TECO
TAMPA ELECTRIC
AN EMERA COMPANY

2025 SAFE WORK PRACTICES

Electric Delivery

Safety of Life Shall Outweigh All Other Considerations

Table of Contents

Return to Top

Revisions:

DATE	SWP	BULLET #	REVISION DESCRIPTION
11/2024	100 General	01	**Added:** "Specific use of PPE is described throughout this document. However, the hazards of every task must be analyzed and PPE determined for that specific task."
11/2024	100 Clothing	02	**Removed:** "Only approved personal fall-arrest equipment shall be used."
11/2024	100 Clothing	03	**Revised** "When exiting, high visibility clothing shall be worn. Traffic Vest consists of a high visible yellow mesh vest with reflective grey striping. Fire retardant Traffic Vest consists of same high vis. yellow and grey striping but a much heavier fire-retardant fabric."
11/2024	100 Safety Eyewear Protection	01	**Revised** "Safety eyewear (safety glasses) must meet or exceed ANSI Z87.1, OSHA standards, and the TEC Safety Glasses Policy." **Added:** Link to the TEC Safety Glasses Policy.
11/2024	100 Safety Eyewear Protection	02	**Revised** "consist of safety glasses and worn on jobs or in areas where hard hats are required and designated eye protection areas, on all job where it has been specified that eye protection is required, and at any time a hazardous condition exists."
11/2024	100 Safety Eyewear Protection	05	**Revised** "Safety glasses and a face shield or goggles shall be used when drilling ductile iron poles in the air. Safety glasses alone can be used while drilling ductile and steel poles on the ground."
11/2024	100 Safety Eyewear Protection	07	**Added:** "due to reduced visibility."
11/2024	100 Fall Protection	01	**Added**: "Only approved personal fall-arrest equipment shall be used."
11/2024	100 Fall Protection	02	**Removed**: "more than" four feet **Added**: four feet "or greater"
11/2024	100 Fall Protection	04	**Removed**: "more than" four feet **Added**: four feet "or greater"
11/2024	101 Job Planning	Header	**Added**: "Before working on or near energized conductors and equipment, consideration shall be given to de-energize the source."
11/2024	108 Grounding Procedures	03	**Added**: "Distribution protective grounding cables shall be flexible stranded conductors of sufficient current carrying

			capacity to activate protective devices without damage to the cable, but no less than 2/0 stranded copper." Added: Hyperlink "Reference Standard Procedure Bulletin 8.4"
11/2024	109 Pole/Structure Rescue	02	Removed: "more than" four feet. Added: four feet "or greater"
11/2024	117 Meters	Title	Removed: "Meters" Renamed: "Service & Meter Installation" Completely removed section 129 Service & Meter Installation. Combined section 129 with section 117.
11/2024	117 Meters	07	Is now 117 Service & Meter Installation. Removed: "ANSI Z-87.1 safety eyewear with side shields and other safety equipment shall be worn while connecting meters, and at all times when working on energized equipment." These requirements are covered under section 100 Safety Eyewear Protection
11/2024	117 Meters	08	Is now 117 Service & Meter Installation. Removed: Workers doing work on energized equipment shall devote their undivided attention to the work at hand.
11/2024	117 Meters	09	Is now 117 Service & Meter Installation. Removed the PPE requirements as they are already called out in section 100 General and section 100 Clothing.
11/2024	117 Meters	10	Is now 117 Service & Meter Installation. Renumbered bullets 10 through 19. Those bullets are now 7 through 16.
11/2024	117 Meters	15	Is now 117 Service & Meter Installation bullet 12. Changed "broken glass" to "broken material"
11/2024	117 Meters	17	Is now 117 Service & Meter Installation bullet 14. Removed: "The secondary side of a current transformer shall not be opened while the primary side is energized". Added: "When the primary side of a current transformer (CT) is energized, the secondary side of the CT shall be properly wired to the test switches in the meter socket along with the proper meter or flat bars installed in the socket, or else the CT must be shunted."
11/2024	117 Meters	New	Is now 117 Service & Meter Installation bullet 17. Added Bullet 17: "When installing, removing, or working on or near energized meter installations, the appropriate PPE and face shield shall be worn. Face shields shall also be worn when working on energized metering

			equipment; large wire trough installations, or large group metering installation or any time a hazardous condition exists which may cause a flash or injury to the face or eyes. FR clothing shall be worn properly. Rubber gloves shall be worn while working energized secondaries and setting meters."
11/2024	117 Meters	New	Is now 117 Service & Meter Installation. Added Bullet 18: "When pulling services, all exposed conductors within reaching distance shall be covered."
11/2024	117 Meters	New	Is now 117 Service & Meter Installation. Added Bullet 19: "When working on energized lines, workers shall not overreach the protective equipment."
11/2024	117 Meters	New	Is now 117 Service & Meter Installation. Added Bullet 20: "Secondaries shall be worked from below, whenever possible."
11/2024	117 Meters	New	Is now 117 Service & Meter Installation. Added Bullet 21: "Services shall not be energized without the consent of the worker at the other end."
11/2024	117 Meters	New	Is now 117 Service & Meter Installation. Added Bullet 22: "A check shall be made on temporary service supports to determine stability before placing a ladder against it."
11/2024	117 Meters	21	Is now 117 Service & Meter Installation. Renumbered bullets 21 and 22. Those bullets are now 25 and 26.
11/2024	117 Meters	23	Is now 117 Service & Meter Installation. Removed Old Bullet 23: "When removing or installing bolted-in self-contained meters, the meter socket shall be de-energized, unless approved insulated (rated) tools are being used."
11/2024	117 Meters	New	Is now 117 Service & Meter Installation. Added Bullet 23: "Services shall be de-energized where damage or deterioration may cause a flash if a meter is removed."
11/2024	117 Meters	24	Is now 117 Service & Meter Installation. Renumbered bullets 24 through 28. Those bullets are now 27 through 31.
11/2024	117 Meters	28	Is now 117 Service & Meter Installation. Renumbered bullet 28 to bullet 31. Added: "unless approved insulated (rated) tools"
11/2024	124 Working On or Near Energized	New	Added Bullet 03: "An interrupting device shall be used to open a primary load."

	Lines and Equipment		
11/2024	124 Working On or Near Energized Lines and Equipment	03	Renumbered bullets 03 & 04. Those bullets are now bullets 04 & 05.
11/2024	124 Working On or Near Energized Lines and Equipment	05	Renumbered bullets 05 though 10. Those bullets are now bullets 07 through 12.
11/2024	124 Working On or Near Energized Lines and Equipment	New	Added New Bullet 06: "Mechanical jumpers shall not be used on any underground cable termination or on the associated hardware at the connection point of the switch."
11/2024	129 Service & Meter Installation	All	Removed: Section 129 and combined with Section 117 Meters
11/2024	130 Testing Procedures	All	Due to the removal of Section 129, all sections starting with 130 Testing Procedures have been renumbered.
11/2024	131 Underground Distribution	New	Is now Section 130 Underground Distribution. Added New bullet 14: "Consideration shall be given around eliminating picking up load in a live-front situation when possible."
11/2024	131 Underground Distribution	14	Is now Section 130 Underground Distribution. Renumbered bullets 14 through 17. Those bullets are now bullets 15 through 18.
11/2024	131 Underground Distribution	New	Is now Section 130 Underground Distribution. Added New bullet 19: "Mechanical jumpers shall not be used on any underground cable terminations or on the associated hardware at the connection point of the switch."
11/2024	131 Underground Distribution	18	Is now Section 130 Underground Distribution. Renumbered bullets 18 through 31. Those bullets are now bullets 20 through 33.
11/2024	Cross Reference Index	All	The Cross Reference Index has been replaced with this revision list.

Return to Top

Foreword

At Tampa Electric, we believe no business interest shall outweigh the health and safety of employees and contractors, and we believe that by working together our workplace can be one where no one gets hurt.

This set of Electric Delivery Safe Work Practices is one important element of our overall safety program. It has been prepared by employees as a guide to the do's and don'ts that employees and contractors are required to follow in the performance of their work. These Practices cover most situations - but they are not exhaustive. When situations arise that aren't addressed by this Safety Manual, we expect workers to properly assess the risk, to exercise their best judgement, and to make the safe choice. If any employee is in doubt about the safest way to proceed, STOP what you are doing and consult your supervisor.

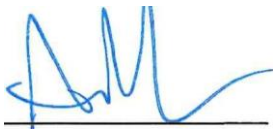
We expect each employee to be thoroughly familiar with the contents of this Manual and to observe all rules that apply to your work before starting any job you are assigned. As part of this expectation, we also acknowledge that every worker has the following rights:

- The right to refuse to do work you consider to be unsafe.
- The right to stop working if you feel something is unsafe.
- The right to understand the work you are being asked to perform.
- The right to be-and to feel-fully trained.

We urge you to speak up for safety, and we urge you to exercise these rights.

Please carry this Manual with you and refer to it regularly while performing your work. If any employee feels the contents are unclear - or that the Manual is missing something important - we encourage you to raise the suggestion with your supervisor or a member of the Electric Delivery JDC. Also, if you encounter a situation where you will have to break one of these Safe Work Practices to complete a job you have been assigned, you are NOT permitted to continue the job. STOP the job and follow the Deviation Process (see Appendix A of this Manual)

Thank you for the work you do every day for Tampa Electric, and for choosing to do it safely.



Archie Collins
President and Chief Executive Officer
Tampa Electric Company

Chris Parsels
Business Manager and Financial Secretary
International Brotherhood of Electric Workers

100 PERSONAL PROTECTION EQUIPMENT (PPE)

GENERAL

01

Specific use of PPE is described throughout this document. However, the hazards of every task must be analyzed and PPE determined for that specific task.

02

Loose dangling jewelry or flapping clothing such as neck ties and unbuttoned cuffs, shall not be worn when working around moving machinery or rotating parts. Special care shall be used to make sure that rings and other jewelry items do not catch on fixed objects when workers move from one elevation to another.

03

Workers shall be required to secure hair when working around moving machinery.

CLOTHING

01

FR clothing and apparel shall be worn properly when working within minimum approach energized area, or if there is exposure to electric shock or arc flash: Sleeve cuffs shall be fully rolled down and secured. All buttons below the collar shall be secured. Shirt tails shall be tucked into pants.

02

Workers engaged in climbing poles or structures, or in work areas where there is danger of injury to the arms such as cuts, abrasions, or thermal burns shall wear a long sleeve shirt buttoned or pulled down to the wrist.

03

High visibility clothing shall be worn when within fifteen (15) feet of the travel roadway. Traffic Vest consists of a highly visible yellow mesh vest with reflective grey striping. Fire-retardant Traffic Vest consists of same high vis. yellow and grey striping but a much heavier fire-retardant fabric.

04

Clothing made from the following types of fabrics, either alone or in blends, is prohibited: acetate, nylon, polyester, rayon.

Return to Top

SAFETY EYEWEAR PROTECTION

01

Safety eyewear (safety glasses) must meet or exceed ANSI Z87.1, OSHA standards, and the TEC Safety Glasses Policy. Safety Eyewear Policy & Criteria

02

Basic eye protection shall consist of safety glasses worn on jobs or in areas where hard hats are required and designated eye protection areas, on all jobs where it has been specified that eye protection is required, and at any time a hazardous condition exists.

03

Face shields, goggles, and safety glasses are needed when using any of the following: (i.e., stationary, or portable tools with cutting, sanding, grinding wheels, wire wheels, chainsaws, or rotating wire brushes). Workers requiring corrective lenses shall be provided prescription safety glasses through an approved eyewear safety supplier.

04

Additional or specialized eye protection shall be worn as required by the job.

05

Safety glasses and a face shield or goggles shall be used when drilling ductile iron poles in the air. Safety glasses alone can be used while drilling ductile, steel poles on the ground.

06

Mono-goggles and a face shield shall be worn when drilling concrete, regardless if on ground or in air.

07

Tinted lenses are prohibited when working in dark conditions - they contribute to or increase the risk of injury due to reduced visibility.

08

Contact lenses shall not be worn with full-face respirators, nor while handling acids and caustics.

FALL PROTECTION

01

Workers undergoing training are not considered "qualified" until they have completed the appropriate training. Workers shall be instructed in the use of fall-arrest equipment and/or positioning devices prior to using them on the job. Only approved personal fall-arrest equipment shall be used.

02

Fall-arrest equipment, work positioning equipment, and/or travel restricting equipment shall be used by workers working at elevated locations four feet or greater above the ground unless an approved ladder, work platform, a guardrail system, or a safety net system is in place.

03

All personal fall arrest equipment shall be inspected before use each day to determine that the equipment is in safe working condition. Defective equipment shall be tagged and removed from service.

04

Fall arrest equipment is required to be used by workers climbing or changing locations on poles and structures at locations four feet or greater above the ground.

05

Lifelines shall be protected against being cut or abraded.

06

Personal fall-arrest systems shall be rigged such that a worker can neither free-fall more than six feet nor contact any lower level.

07

If vertical lifelines or drop lines are used, not more than one worker may be attached to any one lifeline.

08

Snap hooks may not be connected to each other and shall not be connected to loops made in webbing-type lanyards.

09

Anchorage points for positioning devices and fall-arrest equipment shall be located above the body belt or harness attachment point.

10

Fall-arrest equipment subjected to stress impacts caused by a free-fall or by testing shall be tagged and removed from service.

11

One-man crew shall be equipped with suspension harness straps.

Note: Fall protection requirements for work on ladders, scaffolds or other approved work surfaces are included in other sections of the Safe Work Practices Manual. Refer to SWP 115 "Working Above Grade."

FOOT PROTECTION

01

Only approved foot protection meeting ANSI Z-41.1 that are in good condition shall be worn.

02

At a minimum boots or shoes with impact resistant toe caps and non-slip soles shall be worn.

03

Only boots or shoes with defined heels shall be worn to help prevent slipping when climbing.

04

Where special hazards exist, high-top shoes or boots or puncture resistant soles may be required.

05

When welding or cutting torch, high-top shoes or boots that are close-fitting shall be worn.

06

Leggings are required when welding or cutting with low-quarter footwear. High-top shoes may be worn in lieu of leggings as long as the tops of the shoes are close-fitting and covered by the pant leg when welding or cutting torch.

Return to Top

HAND PROTECTION

01

Workers shall wear the proper approved work gloves when handling sharp, rough, cold or heated materials or when the use of gloves will prevent hand injuries.

02

Only work gloves in good condition, free from holes and fraying, shall be worn. Gloves shall not be altered in any way.

03

Special gloves approved for use in handling acids, caustics or other potentially injurious substances shall be worn when working with these materials.

04

Gloves shall not be worn where there is danger of their being caught in moving machinery or rotating parts, except when using stationary wire brush wheels.

05

Cut level gloves or rubber gloves with leather protectors shall be worn when installing and removing socket-type meters. Cut level gloves are the only approved gloves for handling broken glass, porcelain, or sharp instruments.

INSULATING RUBBER GLOVES & RUBBER SLEEVES

01

Rubber gloves shall be worn when working on exposed energized lines or equipment energized at 50 volts or more. Rubber gloves shall also be worn when working on ungrounded lines and equipment that are subject to backfeed and induced voltage.

02

In addition to rubber gloves, rubber sleeves shall also be worn, if exposed energized parts on which work is not being performed are not insulated from the worker exposing the worker's upper arm to contact with other energized parts.

03

The maximum voltage upon which rubber gloves alone shall be used is 5,000 volts to ground. Any voltage in excess of this shall be worked by an approved method only.

04

Rubber gloves shall not be worn without leather protectors.

05

Before work is begun each day, where rubber gloves are required, each glove shall be visually inspected, and air tested by the worker using the gloves. Defective gloves shall not be used.

06

Where rubber sleeves are required, each sleeve shall be visually inspected daily. Defective sleeves shall not be used.

07

Rubber gloves shall be electrically tested every 90 days or more often if field conditions warrant. Rubber sleeves shall be electrically tested annually or more often if field conditions warrant.

08

Rubber gloves and sleeves shall be stored in approved bags in a fully extended position. Rubber gloves and sleeves shall not be folded. Bags shall be either hung up or placed in a special compartment. They shall not be placed where other tools or equipment can damage the rubber gloves or sleeves.

09

Two pairs of rubber gloves, one inside the other, shall not be worn.

10

Care shall be taken not to allow gloves and/or sleeves to come in contact with oil-base products.

11

No items are permitted to be placed in the rubber glove bag (or sleeves bag) along with the rubber gloves and protector gloves (or sleeves).

12

Protectors shall not be worn in place of work gloves.

13

After use, rubber gloves should be washed daily at the end of the shift prior to storage.

HEAD PROTECTION

01

Only approved hard hats or caps (meeting ANSI Z - 89.1) with standard reflective decals shall be worn.

02

Head protection shall be worn by workers and non-workers under the following conditions:

a) In designated hard hat areas
b) On a power plant site
c) At all construction sites
d) By all operating personnel in the field
e) By those indoors and in shops and storerooms, who are subject to falling objects or other hazards.
f) At any other work area where there is a danger of head injury.

03

Exceptions may be authorized by the supervisor if it is judged that circumstances require it, except in OSHA-designated hard-hat areas (designated by a sign).

04

Hard hats shall be kept clean and regularly inspected. Those found to be defective shall be replaced.

05

Nothing may be worn under a hard hat except a welder's skull cap or dew rag. Skull caps or dew rags must be made of flame retardant (FR) materials when used near energized lines or equipment.

HEARING PROTECTION

01

Approved hearing protection shall be worn when workers are working in an area designated as requiring protection.

02

Hearing protection shall be worn on certain jobs as directed by the supervisor.

03

Workers who work in areas where Hearing Protection Required signs are posted shall participate in regular audiometric evaluations.

04

Approved hearing protection is available and recommended for use in noisy work areas.

05

Workers required to wear hearing protection shall comply with the proper use, limitation and care of the protectors worn.

06

Workers shall wear proper protection devices when exposed at or above these levels.

PERMISSIBLE NOISE EXPOSURES:

Duration Per Day (hours)	Sound Level (dBA, slow response)
8	90
6	92
4	95
2	100
1	105
½	110
0.25	115

RESPIRATORY PROTECTION

Note: Use of respirators requires training specific to the type used for protection. When various types of respiratory protection devices are available, care must be taken to make the proper selection. The device must provide adequate protection against the anticipated hazard. If there is doubt, the higher protective device must be used. Reference Respiratory Protection Program.

01

Only approved respiratory protective equipment that is in good condition shall be worn.

02

Proper respiratory protective equipment shall be worn at any time a hazardous atmospheric condition exists. The manufacturer's instructions for respirator use shall be followed.

03

Workers shall be clean shaven prior to fit testing and use of a respirator.

04

Workers covered by the Respiratory Protection Program shall be regularly fit-tested and shall participate in regular pulmonary evaluations to determine that they are physically able to wear a respirator while performing work.

05

Only workers who are trained in use, care and limitations of respirators are qualified to wear them.

06

Negative pressure respirators are not to be used in atmospheres containing less than 19.5% oxygen.

07

Class D grade air shall be used in all supplied air applications. Specification for compressed air for industrial breathing and firefighting uses (as per ANSI/CGA G-7.1): percent oxygen: 19.5-23.5; carbon monoxide: < 10 ppm; oil (hydrocarbons: <5 mgt/m^3; carbon dioxide: <1000ppm; odor: none.

08

Breathing air hose connections must be incompatible with other fittings for industrial gases.

09

Air pressure at the point of attachment at the hood must be regulated within the ranges specified by regulations.

PROTECTIVE EQUIPMENT

01

When installing, removing, or working on energized meter installations, the following equipment shall be worn hard hat, FR clothing, appropriate gloves, approved safety eyewear, approved footwear, and 8 Cal tinted Face Shield. 8 Cal tinted face shields shall also be worn when working on energized metering equipment; large wire trough installations, or large group metering installation or any time a hazardous condition exists which may cause a flash or injury to the face or eyes. FR clothing shall be worn properly: Sleeve cuffs shall be fully rolled down and secured. All buttons below the collar shall be secured. Shirt tails shall be tucked into pants.

02

In the shop, eye protection shall be worn while repairing, soldering, wiring meter sockets, or using an air hose, and other equipment.

03

When working on energized self-contained 480 voltmeter sockets, all FR clothing, safety glasses and additional PPE are required to be equivalent to 20 Cal.

FR-HRC2 (Equals 8 Cal.) shirt with long sleeves and pants (In addition to minimum category FR12 coveralls with the 20 Cal. Hood, face shield and rubber gloves) shall be worn.

101 JOB PLANNING

Before working on or near energized conductors and equipment, consideration shall be given to de-energizing the source.

01

The worker in charge shall conduct a job briefing with the workers involved at the job site before they start each job. The briefing shall obtain input from all people involved in the work and cover at least the following subjects: weather, hazards associated with the job, work procedures involved, special precautions, energy source controls, equipment, adjacent structures, and personal protective equipment requirements. Ensure that all crew members are aware of the hazard present in a critical task job risk briefing. A job risk briefing will also be required that reflects the acknowledgement of the additional risks involved with that critical task.

02

Job briefings shall be documented on a Job Risk Briefing Form. In the event of an additional worker or contractor entering the workspace after the job briefing has been completed, the job briefing form

will be reviewed with the new worker, or contractor entering the workspace, and their name added to the form.

03

Switching instructions shall be received from the dispatcher in accordance with SWP 108 Switching and Tagging.

The person in charge shall be certain that each member of the crew is familiar with the status of equipment, what part is energized, location of grounds, what the limits of the working space prior to commencement of work.

04

If the work or operations to be performed during the workday or shift are repetitive and similar, at least one job briefing shall be conducted before the start of the first job of each day or shift. Additional job briefings shall be held if significant changes, which might affect the safety of the workers, occur during the course of the work.

05

A brief discussion is satisfactory if the work involved is routine and if the worker, by virtue of training and experience, can reasonably be expected to recognize and avoid the hazards involved in the job.

A more extensive discussion shall be conducted, with the risk briefing form, if the work scope changes: if the work is complicated or particularly hazardous, or if the worker cannot be expected to recognize and avoid the hazards involved in the job.

06

A worker working alone need not conduct a job briefing. However, the worker shall ensure that the tasks to be performed are planned as if a briefing were required.

07

The person in charge is responsible for accounting for all workers upon the completion of each job.

08

If working in remote areas there are a number of concerns that need to be addressed: weather, access, communication, supplies and logistics, nature of work and emergency plans. When working in remote locations, test your communications to make sure radio and cell phones are working properly and in the event of an emergency – alternative means of identifying your location should be established (i.e. pin drop GPS, cone at road).

Return to Top

102 ERGONOMICS

GENERAL

01

Workstations and/or work areas shall be arranged to accommodate a full range of required movements. Ergonomic assessments of workstations are available through the TECO Safety Department.

02

Machine controls shall be reachable and easily accessible prior to operation.

03

Lighting shall be adequate to perform task activities.

04

Adequate space shall be available to allow proper lifting techniques. When two or more workers are required to lift or pull together as a team, their efforts shall be coordinated. One shall give the signal for the group. When carrying pipes, conduit or other long objects, special care shall be used when rounding corners and entering doorways. See section Manual Lifting and Carrying.

05

Workspaces and areas shall be arranged to avoid the need for carrying objects overhead and for overreaching.

06

Tools shall be selected for ergonomic features. Vibration dampening products shall be used on vibratory type tools and equipment where applicable.

07

An ergonomic hazard may be caused or aggravated by repetitive motions, forceful exertions, vibrations, sustained or awkward positioning or mechanical compression of the body parts over extended periods or from ergonomic stressors. Ergonomic hazards shall be identified and reported to the TECO Safety Department for assessments.

Return to Top

COMPUTER PRACTICES

01

Position display screen slightly below eye level and avoid glare on the screen.

02

Adjust work surfaces and space to comfortably perform work tasks.

03

Adjust keyboard position to ensure proper position, angle, and comfort.

04

Take rest pauses to alleviate or delay onset of fatigue as necessary.

05

Sit upright to avoid straining neck and back.

06

Use a footrest if feet don't rest comfortably on the floor.

07

Shift sitting position frequently to relax tension away.

08

Blink frequently. Make a conscious effort of it so your eyes won't get dry.

09

Vehicle mounted computers and Mobile Data Terminals – please refer to your departmental policy for proper usage.

OFFICE SAFETY PRACTICES

01

Use handles to open and close file drawers or cabinets. Open one drawer at a time to prevent the file cabinet from tipping over.

02

Do not lean back in chairs with feet propped or raised above seat-level to prevent tipping over backward.

03

Damaged chairs or office furniture shall not be used. They shall be removed from service and tagged for repair using a Repair tag.

04

Only approved step stools and ladders shall be used to reach elevated objects or locations.

05

Turn OFF and unplug office machines prior to adjusting, repairs, or performing maintenance.

Keep overhead bins fully opened or closed.

MANUAL LIFTING AND CARRYING

Note: Manual handling of materials causes over a third of all workplace injuries. These include work-related musculoskeletal disorders (MSDs) such as pain and injuries to arms, legs and joints, and repetitive strain injuries of various sorts. The term manual handling covers a wide variety of activities including lifting, lowering, pushing, and carrying. They can occur almost anywhere in the workplace and heavy manual labor, awkward postures, repetitive movements of arms, legs and back or previous/existing injury can increase the risk.

01

When lifting, carrying, or lowering objects, approved methods shall be followed. Mechanical aids shall be used whenever possible. Do not try to catch falling objects if they slip when lowering or carrying.

02

Proper techniques / methods include straight posture, lifting using leg muscles, good footing, and avoiding over-extending and twisting. Use a wide-balanced stance with one foot slightly ahead of the other.

03

Get as close to the load as possible – The load should be kept close to the body for as long as possible while lifting. Keep the heaviest side of the load next to the body.

04

Adjust yourself to the best possible position for the lift - Shoulders should be kept level and facing in the same direction as the hips.

05

Loads shall be carried in such a way as to permit a clear view of the path to be followed.

06

There is a difference between what a person can lift, and what a person can lift safely: test the load first before attempting to move forward with it. Place the load back down and reposition, readjust if necessary.

07

Lift in a smooth, fluid motion without making any sudden jerking motions – Tighten your stomach muscles as you start to lift. Keep your lower back in its normal curved position and use your legs to lift.

08

When two or more workers are required to lift or pull together as a team, their efforts shall be coordinated. One worker shall give the signal for the group.

09

Push a load on the floor, rather than pull. Pushing lets you maintain the normal curves in your back and puts less stress on the spine.

10

When carrying pipes, conduit or other long objects, special care shall be used when rounding corners and entering doorways.

11

Plan work activities to reduce or eliminate repeated manual lifting where possible.

Return to Top

Return to Top

103 WORK AREA PROTECTION & MOT

WORK AREA PROTECTION

01

Workers shall heed warning signs. Where hazardous conditions exist, barricades, barriers and/or warning signs, such as tape, cones, or flashing lights, shall be used to warn workers and the public of the dangers.

02

Where hazardous conditions exist in a poorly illuminated area or after dark, adequate lighting shall be provided, and flashing warning lights shall be placed on all sides of the hazardous area.

03

Approved railings shall be used to guard stairways and open-sided floors. Toe boards or other suitable means shall be installed where falling tools or materials create hazards to others.

HAZARD COMMUNICATION

01

Barriers or barricades shall have an information tag posted on all sides and at a minimum be placed every 25 feet. All information on the tag should be legible and the minimum required information shall include:

COORDINATION OF WORK

01

When different workgroups are working under the same barrier or barricade, the job, project, and site supervisors shall coordinate with each other to ensure the information tag reflects all the hazards present in the area.

02

All barricades shall have an information tag listing the date the barricade is put in place, the person responsible for placement of the barricade, and the purpose of the barricade.

03

Red danger tag shall be placed to designate danger and to prevent access into an area. Persons required to enter the red-tagged area to address the hazard shall understand and be protected from the hazard. If no work is currently occurring within the barricaded area, approval to enter the space must be obtained from the qualified person in charge of the work or the person holding the danger tag.

04

Yellow caution tag with a tag is used to caution and make aware the potential of a hazard in the area. Persons required to enter the area shall understand and take proper precautions from hazards.

05

When trenches are required to be left open, sufficient work area protection shall be placed to adequately protect the public and workers. Warning lights shall be used where trenches are left open overnight.

PUBLIC SAFETY

01

Whether indoors or outdoors, precautions shall be taken to warn and restrict the public's exposure to hazards created by Company operations. Reference Public Safety and Awareness Program.

02

When working on or near streets and highways, signs, signals, and other warning devices shall be used in accordance with Section 26 in the General Rules and Specifications manual. Only workers trained or those supervised by a trained person in Maintenance of Traffic procedures shall install MOT equipment.

03

When a Company operation affects the general public in any way, every effort shall be made to warn and limit the public from the hazards which exist.

04

Unattended holes or floor openings shall be covered or adequately barricaded. Warning lights with proper barricades shall be placed at each opening or obstruction left overnight.

05

Workers finding low or fallen wires, broken poles or other damaged electrical equipment shall guard them until relieved by personnel qualified to deal with the situation, or until informed by an authorized person that the condition has been made safe.

06

Workers who recognize other hazardous conditions such as crane operations, well-drilling operations and erection of antennas adjacent to energized lines shall warn the individual and report the incident as soon as possible to System Service or their supervisor.

07

Workers shall ensure that visitors are not unduly exposed to hazards and shall ensure that they wear appropriate personal protective equipment.

08

Guidelines for specific work area protection situations shall be followed, as described in the General Rules and Specifications Manual.

09

As much advance warning shall be given as practical. Signs and in some cases, lights shall be placed well in advance of the work area to allow the motorist time to adjust to upcoming conditions in accordance with approved standards.

10

All signs shall be located on the side of the roadway and maintained at right angles to, and facing, oncoming traffic. The road and the areas immediately adjacent thereto, such as the shoulder of the road, parking strip, etc. This area normally extends approximately 15 feet from the road.

11

Only approved warning devices shall be used. Signs shall be equipped with orange flags for better visibility.

12

Signs shall be removed when the work has been completed. If work is temporarily suspended signs shall be covered or removed.

13

When the work area is adjacent to, or encroaches upon a lane of traffic, cones shall be used as delineators to channel traffic away from the work area. The taper shall be long enough so vehicles approaching the restriction side by side have sufficient distance in which to adjust their respective speeds and merge to a single lane before the end of the transition. In higher traffic areas, consideration should be given for additional barriers to be in place.

14

Every effort shall be made to move traffic around the work area as safely and expeditiously as possible. If there is enough room for two vehicles to pass each other, cones shall be used to divide the space into two lanes. If there is only room for one-way traffic, the entire lane shall be blocked off.

15

In congested areas where there is heavy traffic, it may be necessary to designate a member of the crew as a flag person. A flag person shall wear a high visibility vest and carry a red flag or approved paddle.

16

Under extremely heavy traffic conditions, a second flag person may be required. Each flag person shall be able to see the other clearly so as to coordinate their signals. Workers shall be able to communicate.

BARRICADES AND BARRIERS

01

When work is to be done in a de-energized bay adjacent to an energized bay, barricades shall be installed to warn against entry into the energized area.

02

When an addition is being constructed, barricades will be installed around the existing energized substation until the new construction is completed.

03

When barricades are installed within minimum approach distances, they shall be rated for the voltage present.

04

When workers are positioned on top of structures, transformers, breakers, regulators, or ladders and within minimum approach distance of an energized conductor or apparatus, barriers rated for the voltage shall be used to prevent accidental contact or approved protective equipment shall be used.

05

When working within minimum approach distance to energized conductors or equipment, temporary barriers rated for the voltage present shall be installed to protect workers.

OIL SPILL CLEANUP

01

Only company approved traffic vests in good condition shall be worn.

02

Oil spill response vehicles will be set up in the safest possible location.

03

Oil spill response vehicles will have their high intensity, rotating, flashing, oscillating and/or strobe lights operating.

04

At a minimum, the work area protection/ Maintenance of Traffic shall have cones placed in advance of on-coming traffic.

05

Use extreme caution when the oil spill response vehicles are in or near energized lines or equipment. Follow the instructions of the qualified person in charge consistent with the Safe Work Practices.

06

Only FDOT approved containers shall be used for gasoline, diesel, oil etc.

07

Tools, parts, and other supplies carried by oil spill response vehicles shall be properly secured.

Return to Top

104 HEAT AND COLD STRESS ENVIRONMENTS

Reference Heat Stress program. Reference Cold Stress program.

105 ENVIRONMENTAL CONTROLS

HAZARDOUS MATERIALS

01

Read and understand the:

a) Hazard Communication Program
   i. TEC-SMS-PROG-3.04 Hazardous Materials Management.pdf

b) To include Safety Data Sheets
   i. MSDS online and product warning labels for the products and substances with which you are working.

c) PGS/TECO new Chemical Evaluation Request.
   i. PGS/TECO New Chemical Evaluation Request - All Items

02

Hazardous materials, chemicals and products shall receive approval for use by evaluation through the Standards, and Safety, and Environmental departments.

03

Only qualified and authorized workers shall handle hazardous materials.

04

Appropriate personal protective equipment as defined in the SDS shall be worn to reduce exposure to injury and other risks.

05

Practice good personal hygiene to reduce exposure to hazardous substances.

06

Consult with a supervisor or safety staff member if you have any questions about working safely with hazardous substances.

HAZARDOUS MATERIAL SPILLS

01

Any identified or unfamiliar hazardous material spill or leak shall immediately be reported to the supervisor or local environmental coordinator and handled according to approved procedures.

02

Workers may respond to a hazardous spill or leak based on the level of training that they have received.

INDOOR AIR QUALITY

01

All workers shall comply with smoke-free workplace guidelines.

02

Review SDS on all products and materials to identify those that shall be used cautiously when applied indoors.

03

Maintain adequate ventilation when work tasks such as cleaning, etc., may create potential airborne irritants.

04

Avoid exposures through restricted uses of aerosols, solvents or other vapor producing products.

05

Maintain good housekeeping and minimize dusts and particulates.

06

Workers shall report unusual conditions or concerns to the appropriate supervisor.

LIGHTING

01

Where natural illumination is not adequate, artificial lighting shall be provided. Open flames shall not be used for purposes of illumination.

02

Temporary lighting (except battery powered) shall be protected with approved guards.

03

In areas where flammable or combustible vapors, gases, liquids, dust, or fibers may be present, only equipment approved for the hazardous location shall be used.

PCBs - (POLYCHLORINATED BIPHENYLS)

01

Breathing of PCB vapors shall be avoided. When working with PCBs in enclosed areas, adequate ventilation shall be used to prevent build-up of vapors.

02

Where PCB vapors cannot be completely dispersed, an organic vapor cartridge-type respirator shall be worn.

03

When workers are required to enter confined spaces, (such as a tank) where PCBs are present, self-contained, or air-supplied breathing apparatus shall be used.

04

Workers shall avoid skin contact with PCBs. Approved gloves shall be worn for protection when the job requires placing hands in PCB liquid or handling parts, or equipment contaminated by PCBs.

05

If skin contact occurs, the skin shall be washed with waterless hand soap and dried with paper towels, especially before eating, smoking, drinking, or touching other parts of the body.

06

If there is a possibility of PCBs contacting workers' clothing, approved protective clothes (apron or disposable coveralls and shoe covers) shall be worn.

07

Approved eye protection shall be worn at any time workers work with or handle PCBs. Minimum eye protection shall consist of safety glasses. If a splashing hazard exists, chemical mono-goggles or face shield shall be worn.

08

If there is eye contact with PCBs, the eyes shall be flushed with water for 15 minutes and a licensed health care professional shall be consulted immediately.

09

Tools and other re-usable equipment used to work with PCBs shall be washed with approved solvent and wiped dry upon completion of the job.

10

Upon completion of any job involving PCBs, all contaminated disposable items (ordinary work gloves, rags, paper towels, coveralls, used solvents, etc.) shall be disposed of according to established environmental procedures.

Note: For additional information regarding handling, cleaning and proper disposal refer to Oil-Filled Equipment Spill Response Guide or contact your local environmental coordinator.

FLUORESCENT LAMPS

01

Approved safety glasses with side shields and other approved safety equipment shall be worn when handling fluorescent lamps.

02

Care shall be taken when removing lamps from the packaging and/or fixtures to ensure the lamps remain intact and unbroken.

03

Used fluorescent lamps will be stored separately from new lamps until arrangements for disposal are made in compliance with approved departmental procedures.

04

Fluorescent lamps shall be maintained in a container which will protect them from possible breakage during handling, storage, or transportation.

05

Broken fluorescent lamps shall be placed in a sealed container, and under no circumstances be disposed of in ordinary trash/waste receptacles.

06

Broken fluorescent lamps are considered universal waste and shall be cleaned up and disposed of according to approved departmental procedures.

106 BLOOD BORNE PATHOGENS

Reference Blood Borne Pathogen Exposure program.

107 TOOLING

Note: No manufacturing supplied tool-guarding shall be removed, or safety devices made inoperable. Prior to use, the operator shall ensure that the protective shield is properly attached to the tool.

CHAIN SAWS – GAS, HYDRAULIC, or POLE TYPE

01

Personal protective equipment (PPE) shall be worn when operating chain saws: hard hat, gloves, safety eyewear with side shields (may include face shields and eye wear/goggles), when working on the ground, leg protection (chaps).

02

The starter cord shall not be wrapped around the hand when starting the engine. Watch clearances and make sure of footing before pulling the cord.

03

Make sure everyone is in the clear and the operator has good footing before using the saw.

04

During refueling, smoking or open flames shall not be permitted in the area. The engine shall be stopped. A hot engine shall be allowed to cool before refueling.

05

While standing in an aerial basket, the saw shall be placed on the edge of the basket to start.

06

Saws shall be stored in carrying cases or the guard over the blade when not in use. A saw holder shall be used when carrying saws in aerial baskets.

07

While standing on the pole, and using a chain saw, a separate steel safety shall be used in addition to the fall protection.

HAND TOOLS

01

When performing a cut while operating hand tools with moving parts such as oscillating, circular, or reciprocating motion, the user shall make sure complete 360 degrees of visibility around the object being cut to ensure there are no hazards within the range of the moving parts. If 360 degrees of visibility is not possible, a power tool will be strictly prohibited, and the cut must be made by hand.

02

Defective tools shall be tagged to prevent their use and shall be either repaired or disposed.

03

Tools shall be used only for the purpose for which they were designed.

04

Hammers with metal handles, screwdrivers with metal continuing through the handle and metallic measuring tapes shall not be used on or near energized conductors or equipment.

05

Tools shall not be thrown from place to place or from person to person. Tools that must be raised or lowered from one elevation to another shall be placed in tool buckets or firmly attached to hand lines.

06

Tools shall not be left unsecured on scaffolds, platforms, or other elevated places where they could fall and endanger workers below.

07

Impact tools such as chisels, punches, drift pins and hammers, that become worn, mushroomed, or cracked, shall be dressed before further use, or replaced.

08

Sharp-edged tools shall be kept sharpened. Tools with sharp edges shall be stored and handled so they will not cause an injury. They shall not be carried in pockets. All cutting tools shall be kept properly guarded.

09

Chisels, drills, punches, ground rods and pipes shall be held with suitable holders or tongs, not with the hands, while being struck by another worker.

10

Wrenches with sprung or damaged jaws shall not be used. Adjustable wrenches shall be pulled so force is applied to the side of the fixed jaw.

11

Only proper extensions shall be used for added leverage.

12

Only wrenches designed for the purpose shall be struck with sledgehammer.

13

Tool handles that are loose, cracked or splintered shall be replaced. Handles shall be kept clean of oil and grease.

14

When working on or above open grating, the grating shall be covered to prevent tools or parts from dropping to a lower level, or the danger area below shall be barricaded or guarded.

15

The insulation on non-rated hand tools shall not be depended upon to protect users from electric shock.

16

Files and rasps shall be used with handles. They shall not be used as a pry, nor shall they be struck.

PNEUMATIC AND HYDRAULIC TOOLS

01

Pneumatic and hydraulic tools shall be operated by properly trained persons.

02

Pneumatic and hydraulic tools shall be used with care. They shall not be pointed at another person.

03

Pneumatic and hydraulic power tools shall be secured to the hose by a positive locking means to prevent the tool from becoming accidentally disconnected. Tools shall not be operated at pressures exceeding manufacturers' specifications.

04

Consult manufacturer's safe operating procedures before the use of any pneumatic tool to identify and comply with the requirement for additional personal protective equipment and safety precautions.

05

Rented or leased tools will be inspected carefully prior to use to ensure they are safe and in good operating condition.

06

Safety clips or retainers shall be securely installed and maintained on a pneumatic impact tool to prevent attachments or extensions from being accidentally expelled. Care shall be exercised to ensure the trigger or control will not operate when the tool is laid down. The hose shall not be kinked in order to stop the tool.

07

Before adjusting or changing pneumatic tools, unless equipped with quick-change connectors, the air shall be shut OFF at the air supply valve ahead of the hose. The hose shall be bled at the tool before breaking the connection.

08

Conductive hoses shall not be used near energized equipment.

09

The air tank drain valve shall be opened at regular intervals to prevent excessive moisture accumulation in the tank.

10

Safety relief valves are required on air tanks and shall be tested periodically to insure proper operating condition. Relief valves shall not be tampered with or restrained.

11

The supply line shall be shut OFF at the source before disconnecting the air hose. Reducers or pressure relief devices shall be used to ensure that compressed air used for cleaning purposes is below 30 PSI. Use of compressed air for cleaning tools, parts and workstations shall be evaluated to ensure proper PPE is utilized. Compressed air may not exceed 30 PSI when utilized for cleaning. At no time may compressed air be directed at a person.

12

Compressed air shall not be used to blow dust and dirt from clothing or the body.

13

Manufacturers stated safe operating pressures for hoses, pipes, valves, filters, and other fittings shall not be exceeded.

14

The use of hoses for hoisting or lowering tools is not permitted.

15

Proper tools shall be used to locate or stop leaks.

16

All compressed air hoses exceeding one-half inch inside diameter shall have a safety device at the source of supply or branch line to quickly reduce pressure in the event of emergency.

PORTABLE ELECTRIC TOOLS

01

The non-current-carrying metal parts of a portable electric tool, such as drills, saws and grinders shall be effectively grounded when connected to a power source unless:

a) The tool is a double-insulated type.
b) The tool is connected to a ground fault interrupter.
c) Connected by means of an isolating transformer, or
d) Protected by an "assured grounding system."

02

All power tools shall be inspected prior to use to ensure safe operation.

03

Power tools shall be used only within their design capability and shall be operated in accordance with the instructions of the manufacturer.

04

All tools shall be kept in good repair and shall be disconnected from the power source while repairs or adjustments are made.

05

Electric tools shall not be used where there is a hazard of flammable vapors, gases, or dust.

06

All tools or cords shall be disconnected by grasping the plug, not the cord. Extension cords shall be maintained in good repair. Cords for power tool use shall be of the three-wire ground type. Extension lamp cords shall have guards and shall not be used for tool operations. Tools shall not be lifted or lowered by the cord.

07

Ground fault interrupters shall be used at all times when an electric tool is used.

POWDER ACTIVATED TOOLS

01

Only those workers who are qualified to use powder activated tools shall do so. Tools and cartridges shall not be left unattended. Tools, loaded or unloaded, shall not be pointed at any person.

02

The operator shall inspect the tool to be sure that it is clean, moving parts operate freely and the bore is free from obstructions. The bore shall be cleared before using. A charge shall not be fired to clear the bore.

03

Explosive charges shall be carried and transported according to the DOT specifications. Prior to firing a powder activated tool, advance warning shall be given.

04

Operators and assistants using these tools shall wear eye protection (safety goggles and/or face shield), a hard hat and hearing protection.

05

Tools shall be maintained in good condition and serviced regularly.

06

These tools shall be used only on specific materials. Operators shall know the construction of materials the tool is being used.

07

A defective tool shall be tagged with a "Repair" tag and immediately removed from service.

08

Powder activated tools shall not be used in an explosive or flammable atmosphere.

09

Tools shall not be loaded until just prior to the intended firing. Tools shall be unloaded immediately when work is suspended.

10

Only cartridges with an explosive charge adequate for the job and with proper penetration shall be used.

11

Tools shall be held perpendicular to the work surface.

12

In case of a misfire, the operator shall hold the tool in place for 30 seconds. The operator shall then try to operate the tool a second time, and, if unsuccessful, shall wait another 30 seconds. Misfired cartridges shall then be removed, placed in metal container, and returned to the supervisor. The Supervisor shall consult with their environmental coordinator for disposal.

STATIONARY POWERED TOOLS

01

Appropriate personal protective equipment shall be worn.

02

Machine guards shall be properly installed and shall not be removed except for inspection or repairs. Powered tools shall only be operated with the guards in place.

03

Stationary powered tools shall be secured to prevent movement.

04

A mechanical shifter shall be used to shift a belt in operation. Correct belt dressing shall be used and applied only after the machine is turned OFF and the belt idle.

05

A brush or other safe method shall be used to clean chips away from machines.

06

Clamps shall be used to hold work in a drill press.

07

Prior to machine operation a check shall be made to ensure the chuck wrench has been removed and machine is clear and ready for use. Chuck wrenches shall be removed from the machine immediately after use.

08

Remote disconnect switches or circuit breakers shall be clearly identified and marked as to their purpose.

09

No gauging or calipering shall be attempted while a machine is in operation.

a) Grinding wheels shall be run at operating speeds for at least one minute before work is applied. Wheels shall be dressed as necessary to prevent vibration. The manufacturer's recommended wheel speed shall not be exceeded.
b) Wheel expiration date shall be reviewed before operation.
c) Side-grinding shall be performed only with wheels designed for this purpose.
d) Wheels shall be "ring tested" and inspected for chips and cracks before mounting. Wheels shall not be forced onto the spindle.
e) The tool rest shall have a maximum clearance of one-eighth of an inch from the wheel. The distance between the tongue guard and the wheel shall not exceed one-fourth of an inch. The work shall not be forced against a cold wheel but shall be applied gradually until the wheel is warm. The work shall be held firmly against the tool rest.

LIVE-LINE TOOL CARE AND WORK

01

A careful inspection of all live-line equipment shall be done at the beginning of work.

02

Live-line tools shall not be painted.

03

Live-line tools shall be stored and transported in special boxes or trailers.

04

The live-line tool method is to be used on energized circuits 69 kV and above requiring uninterrupted service. Careful planning by trained personnel following safe work procedures is required.

05

An Energized Work Permit shall be installed on the circuit's equipment before performing live-line work.

06

The Absolute Limit of Approach shall be maintained from an energized conductor, a workman and his tools or the energized metal portion of a live-line tool at all times.

07

Chain hoists, chains, metal slings or cables shall not be used in rigging between the pole and an energized circuit.

08

Live-line tools shall be removed from service every two years for examination, cleaning, repair, and testing as follows:

a) Each tool shall be thoroughly examined for defects.
b) If a defect or contamination, that could adversely affect the insulating qualities or mechanical integrity of the live-line tool is found; the tool shall be repair refinished or shall be permanently removed from service. If no such defect or contamination is found, the tool shall be cleaned and waxed.

Return to Top

ABSOLUTE LIMIT OF APPROACH

Voltage	Distance	
Phase to Phase	Phase to Ground Exposure	Phase to Phase Exposure
0.05 to 1.0 kV	Avoid Contact	Avoid Contact
1.1 to 15.0 kV	2 ft.-2 in.	2 ft.-3 in.
15.1 to 36.0 kV	2 ft.-4 in.	2 ft.-7 in.
36.1 to 46.0 kV	2 ft.-7 in.	2 ft.-10 in.
46.1 to 72.5 kV	3 ft.-0 in.	3 ft.-6 in.
72.6 to 121 kV	3 ft.-2 in.	4 ft.-3 in.
138 to 145 kV	3 ft.-7 in.	4 ft.-11 in.
161 to 169 kV	4 ft.-0 in.	5 ft.-8 in.
230 to 242 kV	5 ft.-3 in.	7 ft.-6 in.
345 to 362 kV	8 ft.-6 in.	12 ft.-6 in.
500 to 550 kV	11 ft.-3 in.	18 ft.-1 in.
765 to 800 kV	14 ft.-11 in.	26 ft.-0 in.

09

Before the limits of approach are encroached upon, the hazard shall be moved, or protective equipment used.

10

If it becomes necessary to deviate from the original plan, all work shall stop, and all changes shall be discussed with all crew members to make sure any additional hazards have been identified and addressed.

11

Live-line work should only be accomplished when the weather is clear and dry.

12

A careful inspection shall be made of a structure before performing live-line work.

13

Avoid unnecessary conversation during live-line work.

14

Live-line work shall be performed on one conductor at a time.

15

Live-line work shall not be performed on an adjacent structure.

16

Safe working loads of live-line tools shall be adhered to per hot stick manual and manufacturers' recommendations. Extreme caution shall be exercised when raising or moving conductors above the level of the conductors on the adjacent structures.

17

Nylon strap hoists are not to be used as live-line tools.

18

On 138 kV armless construction, the conductors shall be laid out with live-line tools before climbing through them.

19

Protective equipment shall not be used on voltages above 69 kV.

INSULATING EQUIPMENT

01

Insulating equipment shall be installed from a safe position, and whenever possible, from a position below the conductor or apparatus to be covered. The line or equipment nearest the worker shall be covered first. In removing insulating equipment, the equipment furthest away shall be removed first.

02

Climbing above exposed and energized conductors or equipment shall not be permitted.

03

When it is necessary to work on or near energized conductors or equipment, sufficient protective equipment shall be used to prevent accidental contact with the energized conductor or equipment.

04

All open leads and wires shall be de-energized and grounded or covered with insulating protective equipment whenever it is necessary to work around or climb through them.

05

When qualified workers cover conductors carrying 7,620 volts and higher, workers shall be positioned on an insulated platform or in an aerial basket, unless insulated handles or live line tools are used to install protective equipment.

06

When not in use, equipment shall be shielded from sunlight, heat, ozone, oil, and other harmful agents and protected from physical damage.

07

Blankets shall not be used on the ground without protecting them from physical damage and moisture by means of a tarp, canvas, or other protective mats.

08

Flexible equipment shall always be stored in a relaxed position. Blankets, line hose and hoods shall not be stored in folded or strained positions.

09

Barriers rated for the voltage present shall be used when working adjacent to energized conductors or equipment that cannot be adequately insulated with cover-up material. When barriers are erected near energized equipment or conductors, they shall be constructed of non-conductive materials and rated for the voltage present.

10

All protective equipment shall be maintained in satisfactory condition. When it becomes defective, it shall be tagged and replaced or repaired.

11

At least once a month, each person in charge shall see that the insulating equipment is properly inspected. The supervisor or person in charge shall fill out and sign the form provided to verify that this inspection has been completed.

12

Hot sticks shall be used to operate disconnect switches. When switching, workers shall keep as far as practical from the energized equipment.

13

Each live-line tool shall be wiped clean using a silicone wiping cloth and visually inspected for defects before use each day.

14

All live line tools shall be tested electrically every 24 months.

USE AND CARE OF TOOLS

01

Metal tapes, tapes having metal strands woven in the fabric, brass-bound rulers, metal scales and metal gauges shall not be used when working on or near energized conductors or equipment.

02

Hand lines shall be a minimum of one-half inch in diameter and equipped with a rated safety hook and block.

03

Each worker shall inspect their climbing tools, body belts and safety belts and harnesses each month. The person in charge shall complete the form provided to verify that this inspection has been completed.

04

Gaff protectors shall be used when climbers are not in use. The gaff shall not be less than one and one-quarter inches long, measured on the inside.

05

Tools carried in the tool belt shall be secured so that they cannot fall. Large tools shall not be carried in the tool belt.

06

The tool bucket shall be kept free of broken glass, broken pieces of porcelain, nails and other materials which might damage rubber gloves or other protective equipment.

07

Insulation on tools shall not serve as a substitute for rubber gloves when the rubber glove rules require their use.

08

When not in use, pruning tools, hand saws, axes, hatchets and machetes shall be covered with an proper sheath.

09

All tools shall be periodically inspected, and any defective tools tagged and removed from service, regardless of ownership.

10

All live-line tools, insulated platforms, barriers, and cover-up materials shall be inspected visually before use. Where hazardous defects are indicated, such equipment shall be tagged and removed from service. Any worker has the authority to take a tool out of service.

Return to Top

108 LOCKOUT | TAGOUT (See Electric Delivery Switching & Tagging Procedure)

Within Electric Delivery locations, workers shall be familiar with and comply with the clearance and tagging procedures for their locations. It is assumed that if the equipment to be serviced is operating, it shall be shut down using normal shutdown/switching procedures.

01

Only competent, approved, and authorized personnel shall apply locks and/or tags or other energy isolating devices to Company equipment, machinery, or vehicles. All other affected personnel shall be trained in the purpose and application of the procedures.

02

Approved lockout/tagout, and application devices shall be the only devices used for controlling energy and tagging purposes and shall not be used for other purposes.

03

Tagout devices shall be constructed and printed so that exposure to weather conditions or wet locations will not cause the tag to deteriorate or cause the tag message to become illegible.

04

All information required on the tag shall be properly and legibly entered so that exposure to the elements will not cause the message to deteriorate.

05

If more than one person is required to lockout or tagout equipment or machinery, each person will place their own personal lockout or tagout device on the energy isolating device. When an energy isolating device cannot accept multiple locks or tags, a multiple lockout/tagout device such as a multi-holed hasp shall be used.

06

As an alternative, to utilizing a multi-holed hasp to lockout a device, a single lock may be used to lockout the equipment or machinery with the single key to that lock being placed in a lockout box or cabinet which allows the use of multiple locks or tags to secure that cabinet.

07

Shift changes shall be coordinated by the Supervisor or competent worker in charge, utilizing the ED Switching & Tagging Procedure (STP) to ensure the safe exchange of information and control of hazardous energies.

08

In the event work cannot be completed by the end of a shift and there are no overlapping shifts or direct exchange of information between competent workers assuming the work, the competent worker in charge of the outgoing shift must document the information required in the ED STP for the competent worker in charge of the next immediate incoming shift.

09

Once the information defined in ED STP has been reviewed by the competent worker in charge of the incoming shift, and by the competent worker about to perform the work as applicable, the worker may apply his/her own lock and/or tag to the equipment and remove the previous lock and/or tag once he/she is confident that the work can be performed safely.

10

In the event a competent worker leaves the work site without removing his/her lock from equipment, machinery, or vehicles on which work must continue, and the information defined in the ED STP is not available, all efforts must be made to contact that worker to return to work and remove the lock and/or tag or to provide the necessary information.

11

If a competent worker who applied the lock or tag device is not available to remove it, and cannot be contacted, the lock or tag may only be removed according to the following procedures:

a) A supervisor and another competent person, from the same department as the worker whose lock or tag has been applied, shall be assembled at the work location.
b) The supervisor will verify that the competent person who applied the device is not available.
c) The supervisor and competent person will evaluate the equipment, machinery, or vehicle in question to include the inspection of any energy control device, all affected energy sources, (e.g.: hydraulic, electrical, chemical, pneumatic, thermal, stored energy, etc.) and any other potential hazards that may result from continuing the maintenance and/or repair, or from re-energizing that piece of equipment, machinery, or vehicle.

d) Make all reasonable effort to notify the original competent person that their lock or tag has been removed.
e) Apply as necessary any new locks and/or tags to the equipment, machinery, or vehicle.
f) Document the results of this exception procedure and maintain with appropriate lockout/tagout files.

12

The competent worker shall know the type and magnitude of energy sources that the machine or equipment utilizes and shall understand the hazards and the appropriate means to eliminate the hazard.

13

Operate the disconnect switch, line valve, or other isolation devices so that the equipment is isolated from its energy source(s). Always trace all lines/wires of supply back to their source to assure that there are no added splices, connections or T's that have not been secured. Stored energy in batteries, capacitor banks, springs, elevated machine members, rotating flywheels, hydraulic systems, and air/gas, steam, or water pressure, etc., must be dissipated or restrained by methods such as switching, repositioning, blocking, bleeding down, etc.

14

The competent worker shall lockout and/or tagout the energy isolating devices with assigned individual locks and/or tags.

15

Any time a lock is used to secure an energy source, it must be accompanied by a tag identifying the person that installed it, the date and time it was installed, and a means by which the worker may be contacted. At no time will the locking device be removed by anyone other than the person who is identified on the tag unless following specific departmental procedures.

16

After ensuring that no personnel are exposed, and as a check on having disconnected the proper energy sources, a "zero energy state" will be verified through appropriate means by the competent person.

17

All operating controls shall be reset to NEUTRAL or the OFF position after verification of "zero energy state".

SWITCHING AND TAGGING PRACTICES

Note: THREE-WAY COMMUNICATION: Switching and Tagging requires three-way communications in which the system operator shall issue directives in a clear, concise, and definitive manner; the recipient of the directive shall repeat the information back correctly; and the system operator shall acknowledge the response as correct or shall repeat the original statement to resolve any misunderstandings.

01

A switch, fuse, tap or any other device under the jurisdiction of a Switching Supervisor shall not be tagged or operated without the specific instructions of the Switching Supervisor.

02

Switching orders are not transferable. The competent person receiving the orders shall be responsible for and personally direct the switching procedures.

03

Where equipment or switches are isolated for testing, maintenance or construction, and arrangements have been made with the Switching Supervisor, this isolated equipment or switch can be operated without specific instructions from the Switching Supervisor.

04

Use of the Clearance Request Sheet (electronic process) for transmission tagging shall be done in accordance with Transmission Department procedures in TOA (Transmission Outage Application).

05

The tag shall be securely attached in a conspicuous location on the control switch, the open disconnecting device, or on the pole or structure where such switch or device is located.

06

The Switching Operator's department shall maintain a file of all switching tags for at least 30 days.

DANGER TAG (RED TAG)

01

The Danger tag shall be used only on electrical circuits and equipment. A Danger tag placed on an open disconnect forbids closing that device.

02

No one, regardless of rank or authority, shall in any case operate any switch or piece of equipment, which has a Danger tag attached to it; nor shall the Danger tag be removed without orders from the Switching Supervisor.

03

The supervisor or person in charge receiving the clearance shall test for voltage, and then shall apply approved grounds. Clearances shall not be given through any device where a gap is not visible.

04

If clearance is required for more than one crew working on the same job, each person in charge shall obtain clearance and shall not work under the clearance of another.

ENERGIZED WORK PERMIT

01

The Energized Work Permit is the only protective tag used on energized circuits or equipment. Before this tag can be placed on any switch having an automatic re-closing feature, the re-closing feature shall be disabled.

02

When working under the protection of the Energized Work Permit, the circuit, equipment, or switch shall be considered energized at all times.

TAGGING FOR OR BY OTHER COMPANIES

01

When work is to be done by TECO requiring the opening and tagging of switches controlled by another company, the switching and tagging shall be arranged through the TECO Switching Supervisor.

02

When another company is working adjacent to TECO transmission lines and it becomes necessary to deenergize the line, the line shall be tagged to the Switching Supervisor's designated representative.

Return to Top

LOW VOLTAGE (600 VOLTS or BELOW) UTILIZATION CIRCUITS

01

When work is to be done on a low voltage utilization circuit, the circuit shall be tagged and locked out or made inoperative in accordance with this Safe Work Practice. An utilization circuit is defined as an electrical circuit and its associated equipment which utilizes (uses) electric energy for mechanical, chemical, heating, lighting or similar useful purpose. (Specifically covered under OSHA Subpart S 1910.301 – 1910.399). Also, defined as any electrical circuit not a part of power generation, transmission and distribution installations, including related equipment for the purpose of communication or metering.

GROUNDING PROCEDURES

01

For workers to work lines or equipment as de-energized, the lines or equipment shall be de-energized, clearance issued, tested for voltage with an approved device and grounded. When the line or equipment has never been energized and there is no possibility of contact with another energized source, and the hazard of induced voltage is not present, grounds are not required.

Note: Visual indicators (i.e., flags) should be used to indicate grounds are present.

02

Only approved protective grounding devices shall be used in accordance with approved grounding procedures. All grounding conductors, devices, fittings, etc., shall be inspected and tested periodically to ensure grounds are intact, continuous, and in good repair. Where such grounds are found to be broken, corroded, non-continuous or in need of repair, they shall be removed from service, tagged with a Repair tag and repairs will be made immediately.

03

Before installing a grounding device, a worker shall complete a pre-use inspection to determine that the device is in satisfactory condition. All protective grounding cables (For 69 kV and 138 kV) shall be flexible stranded conductors of sufficient current carrying capacity to activate protective devices without damage to the cable, but no less than 4/0 stranded copper. (Reference Standard Procedure Bulletin 8.4).
For Transmission work on 230 kV, no less than parallel 4/0 grounds are sufficient. (Reference Standard Procedure Bulletin 37-6 Standard Procedure Bulletins Transmission).

Distribution protective grounding cables shall be flexible stranded conductors of sufficient current carrying capacity to activate protective devices without damage to the cable, but no less than 2/0 stranded copper.

Reference Standard Procedure Bulletin 8.4

04

When protective grounds are attached to a line or to equipment, the ground end connection shall be attached first, and then the other end shall be attached by means of a live line tool. Rubber gloves shall be worn during installation or removal.

05

Before protective grounds are attached, the circuit shall be de-energized, clearance issued and then tested for voltage with an approved device. Protective grounds shall not be removed until the work has been completed and all persons involved are notified and in the clear.

06

Whenever possible, a protective ground shall be placed on all phase conductors at the point of work. When grounding at the point of work creates congestion and is a hazard to the worker, grounds shall be placed on each side as near as possible to where the work is being performed.

07

When working on equipment where it is impractical to ground on each side of the work, equipment shall be grounded in at least one location.

08

When electrical testing requires that circuits or equipment be ungrounded, any protective grounds otherwise required shall be removed only during the test, using insulating equipment. When grounding conductors, the grounding cables shall be connected to a suitable ground first; then the nearest phase conductor shall be grounded, and the remaining conductors shall be grounded in order. Workers shall keep as far from the conductor as possible. When removing the grounding cable, the worker shall reverse the order being used and ensure that his body does not come in contact with conductors which are grounded.

09

Equipotential Zone – Temporary protective grounds shall be placed at such locations and arranged in such a manner as to prevent each worker from being exposed to hazardous differences in electrical potential (Reference General Rules and Specifications OP 25-2).

10

All vehicles in the work area where Transmission work is being performed shall be grounded. If there is no potential of induced voltage or contact with energized lines, these grounds may be omitted.

VEHICULAR AND MOBILE EQUIPMENT

01

The authorized worker shall know the type and magnitude of energy sources that the vehicle or mobile equipment utilizes and shall understand the hazards, and the appropriate means to eliminate the hazards.

02

If the vehicle or mobile equipment to be serviced is operating, it shall be shut down using normal shut down procedures.

03

Turn off ignition key, and battery circuit key if used, and remove key from switches. Tag the unit with the approved signed and dated tag indicting the tagout is in effect and place the Danger Do Not Operate or other similar sign on the access to the operator's compartments or on the steering wheel.

04

When working on electrical systems, disconnect all battery cables, apply a cable locking device, if necessary, and attach a signed and dated tag.

05

After the vehicle or mobile equipment is tagged out, the authorized worker shall test the system by trying to activate it through normal procedures (ignition switch, start button, etc.) to assure it is safe to work on. All systems shall be reset to a NEUTRAL or OFF position after the initial test.

06

If it is necessary to utilize valves and/or release devices that must remain in an open or closed position during the service and/or repair procedure, they must be tagged out as well.

TERMINATION OF LOCKOUT/TAGOUT

01

After the service and/or maintenance is complete and the equipment is ready to be tested and/or returned to normal operation, it must be inspected for completeness of assembly, the area around the machine or equipment checked to ensure that exposures to hazards or risks are minimal, and that all nonessential items have been removed from the operating area.

02

All equipment guards must be in place and properly adjusted. All affected workers and customers must be notified of the intention to energize and test the machine or equipment. All non-essential personnel will move to a safe location.

03

Do not remove the last lock and/or tag until all hazards have been considered and corrected as needed, and all affected personnel informed.

04

The Competent worker(s) who applied any lock or tag shall remove all lockout and/or tagout devices and operate the energy isolating devices to restore energy to equipment in the exact reverse order that they were installed.

109 RESCUE OPERATIONS

01

Rescue and resuscitation techniques shall be reviewed and practiced at least once a year.

02

The emergency channel shall be used in emergency situations, which will notify dispatchers, who, in turn, shall call for emergency assistance in accordance with approved policy. Radio calls for emergency medical assistance in life threatening situations shall be identified with the words "Mayday, Mayday." Calls for other emergency situations shall be identified with the words "This is an emergency." All other radio communication shall cease while the emergency is underway.

POLE/STRUCTURE RESCUE

01

A lifeline of one-half inch minimum diameter shall be used whenever a worker climbs poles, towers or structures.

02

An approved full body harness with shock absorbing lanyard shall be worn and used by workers working at elevated locations four feet or greater above the ground on towers or any structures where fall protection has not been provided.

03

The rescuer shall exercise extreme caution to prevent from also becoming a victim. The circuit shall be de-energized to remove the victim. If the circuit cannot be de-energized immediately, the rescuer shall use adequate protection for their own safety.

04

The rescuer shall proceed to lower the victim to the ground as soon as possible in accordance with approved methods. All CPR/AED procedures are to be administered while victim is on the ground.

AERIAL DEVICE RESCUE

01

An approved full body harness with a shock absorbing lanyard shall be worn and used by workers working from aerial devices.

02

The rescuer shall proceed to lower the victim to the ground as soon as possible using the lower, or remote, controls on the equipment.

03

The victim shall be removed from the basket as soon as possible in accordance with approved methods.

VAULT/MANHOLE RESCUE/CLOSED VESSEL

01

When work is being performed in a vault or manhole, an approved tripod or other type lifting device shall be set up, tested, and readily accessible.

02

Workers working in a vault or manhole shall wear an approved full body rescue harness.

03

When a worker is in a vault or manhole another qualified rescuer with the proper equipment readily available shall be stationed at the surface to assist in case of emergency.

04

Workers may not enter an enclosed space while it contains a hazardous atmosphere unless entry conforms with the Tampa Electric Company Permit-Required Confined & Enclosed Space Program.

05

If required, CPR/AED shall be administered after the victim has been brought topside.

06

Entry into and rescue from closed vessels shall be in accordance with Tampa Electric Company Permit-Required Confined & Enclosed Space Program.

OTHER RESCUE

01

Whenever workers are engaged in work where the danger of drowning exists, they shall be required to wear an approved personal flotation device.

110 FORKLIFT & POWER INDUSTRIAL VEHICLES

01

Only qualified and authorized personnel shall operate a forklift. All operators shall comply with the manufacturers' safe operating instructions. All forklift operators will be tested/certified on a 3-year cycle or whenever an incident mandates re-testing.

02

Hard hats, safety glasses and steel toed shoes shall be worn at all times when operating a forklift. Seatbelts shall be worn when operating forklift.

03

The operator shall complete an equipment inspection checklist at the beginning of each shift prior to using the forklift. A written copy of the completed checklist shall be retained on file according to department procedures.

04

When descending an incline, the load shall be to the rear. When ascending an incline, the load shall be to the front.

05

Loads shall not be raised or lowered while the forklift is traveling.

06

Wheels shall be chock if the forklift is parked on an incline.

07

When traveling, sudden stops that might spill the load shall be avoided.

08

The horn shall be sounded when entering or exiting a building or when approaching blind corners.

09

Forklifts with gasoline or diesel engines shall not be operated in any building or enclosed area for prolonged periods of time, to avoid dangerous levels of carbon monoxide.

10

When a forklift is moved, loaded or empty, forks shall be carried as low as possible but high enough to clear uneven surfaces.

11

The strobe light on the forklift shall be turned ON whenever the unit is in operation.

12

Passengers are not allowed to ride a forklift. No one shall be permitted to ride the load at any time.

13

Only an approved platform shall be used as a man lift. The platform will be properly secured to the mast or forks, and guards will be in place to prevent hands or materials from passing into the mast area.

14

Appropriate personal fall arrest equipment (full body harness and shock absorbing lanyard) shall be used and properly secured by all personnel while working in an elevated platform. The full body harness and shock absorbing lanyard shall be inspected prior to operating the unit to ensure they are in good repair and securely fastened.

15

Personal fall arrest equipment shall be properly secured to the fork-tine carriage and not to the platform or work basket.

16

The forklift operator shall never leave the lift while an occupied work platform/basket is elevated.

17

When forklifts are used in loading and unloading operations inside box trucks or trailers, special precautions shall be exercised. The vehicle shall be properly docked and parked with the wheels safely chocked. In addition, there shall be no personnel (other than the operator) permitted inside box trucks or trailers while the forklift is in operation (traveling). Beware of your surroundings when entering and exiting a trailer.

18

Any malfunction or equipment failure, the unit shall be tagged out-of-service until repairs are made and the unit re-certified.

19

When the forklift is not in use, the forks shall be lowered, brakes set, and the key turned to the OFF position. If the forklift is propane-powered, turn off gas supply.

20

Personnel shall not stand or pass beneath the elevated forks, whether loaded or empty.

21

Forklift trucks shall not be used in place of jacks or other lifting devices.

22

Only loads which are securely and safely loaded and within the rated capacity of the forklift shall be handled.

23

When refueling forklifts, the engine shall be turned OFF. When fueling a propane-powered forklift, ensure that the propane bottle is in the off position and the propane fuel line is purged before loosening the hose. Wear the proper PPE, then exchange the empty cylinder for a full one and properly secure hose to cylinder.

24

When servicing battery-powered lifts, ensure power is disconnected and connect charge to proper lead, wear appropriate PPE. When checking battery water levels, wear proper PPE and never use another forklift to push battery out to check water levels.

25

Only approved attachments to the mast or forks shall be used. Improvised methods shall not be used.

26

All fork tine attachments, slings and lifting accessories shall be properly marked indicating load capacity.

27

The rated capacity of all equipment shall not be exceeded. Equipment not rated with load capacity shall be taken out-of-service until properly inspected and rated.

GOLF CARTS

01

Golf cart operators shall comply with all traffic signs and directions. Where speed limits are not posted, do not exceed 10 MPH speed limit.

02

Drive the vehicle only as fast as terrain and safety considerations allow. Consider the terrain and existing traffic conditions.

03

Avoid sudden stops or change of direction as they may result in a loss of control.

04

All travel should be directly up or down hills. Use extra care when driving the vehicle across an incline.

05

Feet, legs, hands, and arms shall be always kept inside the vehicle.

06

Check the area behind the vehicle before backing up.

07

Do not exceed vehicle capacity. Standard vehicle is limited to two occupants maximum per seat.

08

Balance and secure loads before driving. Keep items within the perimeter of the cart. Stay within the weight limits of the cart.

09

Drive golf carts on Company property only. Do not drive carts on public roads.

POWERED INDUSTRIAL TRUCKS

01

Operate the truck in reverse facing in the direction of travel when visibility is impaired.

02

Place the travel controls in NEUTRAL, fully lower lifting mechanism, and completely shut down the unit before removing the safety harness and leaving the operator cab. Note: move above.

03

Be certain that the dockboard or bridge plate is properly secured prior to driving over it. Drive carefully and slowly across the dockboard or bridge plate, and never exceed its rated capacity. Note: move above

04

Order picker trucks shall not be used on ramps and are not designed for outdoor use. Note: move above

05

Order picker trucks are designed for use on smooth, hard floors with minimal grades. They should be used in dry areas only, and in areas requiring exhaust free operation. Note: move above

06

Operate three-wheel material chasers with extra caution and slow speeds when crossing uneven pavement or in adverse weather conditions. Reference TEC Severe Weather Guidelines.

07

Follow all traffic control rules, yield to pedestrians and other vehicles, and exercise extreme caution when operating a three-wheel material chaser in a parking lot throughout all areas.

111 LP GAS OPERATIONS

GAS SERVICE

Note: This section applies to propane or natural gas systems.

01

When entering or working on customer property, workers shall check for hazardous conditions, such as, tripping hazards, dogs, or other potentially dangerous animals.

02

Smoking and open flames are prohibited when working on gas service installations.

03

Prior to beginning work, visually inspect the gas service installation for hazards.

04

Appropriate personal protective equipment (hardhat, safety eyewear, protective footwear, gloves, etc.) shall be worn as required by the work conditions and task to be performed.

05

Gas service reconnects and disconnects shall be performed according to established procedures.

06

Electrical bonding jumper straps shall be applied during all gas service disconnects.

LP GAS OPERATIONS

Note: Refer to SWP 112 Fire Prevention.

01

Only qualified workers shall fuel liquefied petroleum (LP) gas-powered vehicles.

02

Workers shall follow, in prescribed order, all procedures in fueling LP gas-powered vehicles and LP operations.

03

Workers fueling LP-powered vehicles shall wear approved personal protective equipment.

04

The main fuel line valve shall be shut OFF in LP gas -powered vehicles left in buildings overnight.

05

Workers shall not vent LP gas fuel tanks inside buildings.

112 FIRE PREVENTION

01

All No Smoking signs shall be strictly observed.

02

Each worker is responsible for recognizing and eliminating fire hazards. If unable to eliminate fire hazard, notify appropriate department and record event in incident reporting system.

03

Each worker is responsible for knowing what action to take in case of fire, including whom to notify, where and how to sound available alarms and what firefighting equipment to use. For specific details refer to the appropriate department's emergency plan.

04

Exit routes and doorways shall be clearly marked and kept clear of all obstructions. Open flames or spark-producing tools shall not be used in any area where combustible gas vapors or dust may exist unless proper precautions.

05

Fire extinguishers that have been discharged, even partially, shall not be placed back in service, but shall be promptly tagged and removed from service. The discharged extinguisher shall be replaced with a fully charged unit.

06

Designated fire protective equipment shall not be removed from fire stations or used for purposes other than firefighting or drills.

07

Access to fire extinguisher and other fire protective equipment shall not be obstructed.

08

No open flames shall be allowed, or spark-producing tools used in the area (within 35 feet) where flammable or combustibles are stored.

09

Flammable and combustible liquids and gases shall be stored and transported only in approved containers. Containers being transported shall be properly secured.

10

Transportation of any flammable liquid shall be in compliance with Safety Data Sheets (SDS) regulations.

11

Flammable hazard or combustible waste liquid shall be disposed in accordance with SDS regulations. Waste shall never be emptied into any drain.

12

Combustible waste material, such as oil or paint-soaked rags, shall be placed in metal containers with self-closing or self-extinguishing lids.

13

When pouring flammable liquids from one metal container to another, or in filling gasoline tanks, metal-to-metal contact shall be maintained between the two containers or between the hose nozzle and the tank to prevent static discharge.

14

Dispensing drums shall be equipped with self-closing spigots. Pipe connections on all drums and piped flammable liquids shall be vapor and liquid tight.

15

Leaking hoses and nozzles shall be repaired or taken out of service.

16

All controlled products shall be cleaned up immediately in accordance with SDS regulations.

17

The cutoff switch for electric pumps used to dispense flammable liquids shall be clearly identified and easily accessible.

18

Place containers on the ground when filling with flammable liquid instead of in the back of a truck with a bed liner to prevent static discharge.

19

Workers shall be responsible for maintaining a clean and orderly workplace, whether on company property, in vehicles, or at a job site.

20

Tools and material shall be placed so as not to create a tripping hazard. Aisles, passageways, and stairs shall be kept clear.

21

Scrap materials and debris shall be picked up and disposed of properly.

113 BATTERIES

01

For additional information, refer to manufacturers' product information and Safety Data Sheet (SDS).

02

Adequate ventilation shall be provided in battery and battery-charging areas. Where natural ventilation does not constantly change the air, forced ventilation shall be used. The manufacturers' recommendations shall be followed in charging batteries.

03

Approved signs shall be posted and observed in all battery areas. Signs shall read "Danger-No Smoking, Open Flames or Ignition Sources."

04

An approved eye wash unit shall be immediately available in the battery charging areas.

05

Worker shall wear acid-proof gloves, aprons, chemical monogoggles and face shield when handling or repairing batteries.

06

Care shall be exercised to prevent short-circuiting, generating a spark or ignition source when working on or near the battery or when cleaning or making repairs.

07

When making up electrolyte for batteries, workers shall always pour the acid slowly into the water, not water into the acid. The wrong procedure can cause an explosion. Care shall be exercised when adding/removing liquid to/from batteries to prevent spills or splashes of the liquid. A spill kit, including a neutralization medium such as Sodium Bicarbonate, should be available in work area during electrolyte handling activities.

08

A carboy tilter or siphon shall be used to handle electrolyte.

09

If electrolyte is spilled on clothing, the contaminated clothing shall be removed, and the skin washed with water as soon as possible.

10

Open flames, tools that can cause sparks, and other sources of ignition shall be kept clear of the immediate area during charging operations.

11

When it is necessary to work in battery rooms where sources of ignition exist, the room shall be adequately ventilated. The battery charger shall be turned OFF when practical.

12

When charging batteries, vent caps shall be kept in place. Care shall be exercised to ensure that vent caps are functioning properly. Battery compartment covers shall be opened to dissipate heat and vapors.

13

Care shall be exercised to prevent grounding the case of a NiCad cell, since the case is part of an electrical circuit.

14

When removing a battery, the ground connection shall be the first connection removed. When installing a battery, the ground connection shall be the last connection made.

15

When using a hydrometer to check batteries, splashing battery acid shall be prevented, and monogoggles and face shield shall be worn as minimum eye and face protection.

16

If jumpers are used to start vehicles with dead batteries, the jumper shall be connected first to the positive terminal of the dead battery, then to the positive terminal of the live battery. The other jumper shall be connected first to the negative terminal of the live battery and then to a suitable ground and not the negative terminal of the dead battery.

17

Rooms and cages housing exposed electrical bus above 60 volts shall be locked, and access limited to authorized personnel.

18

Batteries shall be properly disposed of in an environmentally safe manner outside of shop area. Spent dry cell batteries shall be placed in an area of good general ventilation away from ignition sources and outside shops and worker workstations.

19

All batteries greater than or equal to 9 volts, rechargeable batteries, and lithium batteries shall have the terminals covered prior to disposal in the proper accumulation container. Lithium batteries shall never be exposed to water. Batteries shall be properly disposed of in an environmentally safe manner outside of shop area. Spent dry cell batteries shall be placed in an area of good general ventilation away from ignition sources and outside shops and worker workstations.

20

Wear eye protection whenever working with the battery. Use extra care when working around the battery and charging equipment.

21

Charging must be performed in a well-ventilated area.

22

Inspect the charger AC and DC plugs for loose, bent, arced or dirty contacts. Inspect the vehicle receptacle for loose wires or damage. Tag out-of-service any damaged cords or parts.

23

Insert plug fully into receptacle and check that the connection is tight.

24

Be careful not to pull on the cord or place it in a position where it can be driven over or present a hazard to personnel working in the area.

25

When connecting or disconnecting the charger to a vehicle, always make sure that the charger has completed its charge and is OFF (ammeter indicates 0 amps). If the charger is not OFF, an electrical arc may occur when the charger is unplugged and may cause an explosion or fire.

Return to Top

114 CONFINED SPACES | ENCLOSED SPACES: Manholes, vaults

01

Workers shall reference and follow the procedures outlined in the "TECO Permit-Required Confined & Enclosed Space Program" as well as the specific entry procedures for the location involved.

02

TEC has classified manholes and vaults as ENCLOSED SPACES providing that hazards have been mitigated. Reference OSHA 1910.269(e) Enclosed Spaces.

03

Reasonable efforts shall be made to de-energize all energized circuits prior to workers performing any work in a manhole. Upon entry into an energized manhole, the first qualified TEC personnel shall perform a visual inspection verifying what circuits are in the manhole and request EWPs on any additional circuits found in the manhole if necessary.

04

If energized circuits in a manhole cannot be de-energized, workers shall request an "Energized Work Permit" (EWP) on all energized circuits. Underground circuits feeding downtown, and airport are by default a non-reclose state and workers shall not be required obtain an EWP.

05

Anytime a worker enters an enclosed space, manhole or vault, rescue personnel shall be on site. They shall be prepared for rescue prior to entry and have equipment necessary to conduct a rescue. When the space is occupied, there shall be at least two continuous gas monitors in the space and a Supplied Air Respirator System (SARS) on site for the rescuer. Should there be a need for a rescue, any attendant trained in the Enclosed Space rescue shall perform the rescue provided the continuous gas monitor is not in alarm. If the monitor is in alarm and can't be cleared the rescuer trained for the SARS shall don the SARS unit before entering the space for rescue.

06

When covers are removed from enclosed spaces, the opening shall be promptly guarded by railing, temporary cover, or another barrier intended to prevent an accidental fall.

07

Where possible, the manhole cover shall be removed parallel with the flow of traffic and placed on the side away from approaching traffic.

08

Manhole ladders, tools and materials shall be placed where they will not create a hazard.

09

When work is to be done in a manhole or a vault, proper work area protection shall be installed.

10

Forced ventilation into the manhole or not a vented vault shall be used to maintain a safe environment.

11

Upon entry into an energized manhole, the first worker shall perform a visual inspection.

12

Upon completion of the visual inspection, the use of a thermal imaging device (FLIR Model 60) shall be utilized to identify any energized cable and/or splice hot spots.

13

Furnaces and solder pots shall be placed at a safe distance from the hole and shall be placed on the side away from approaching traffic.

14

Open flames shall not be permitted in enclosed spaces until after the air has been tested and found free of explosive or flammable liquids and gases.

15

Whenever a worker enters, or is working in an enclosed space, another trained rescue worker shall be stationed at the entrance to assist with rescue. This worker may perform other duties if it does not interfere with rescue abilities. Note: (At a permitted confined space, attendant cannot leave or perform other duties other than rescue attendant.)

16

A ladder shall always be used when entering or leaving the enclosed space. A cable shall not be used to assist in climbing into or out of an enclosed space except in an emergency.

17

Tools or material shall not be thrown in or out of enclosed space. Only an approved handline shall be used to raise and lower tools and materials.

18

Material, hot solder, or hot compound shall not be lowered into the workspace until definite instructions to do so have been given by a worker in charge.

19

Clearances shall be obtained in accordance with approved switching and tagging procedures.

20

Identifying tags or markers shall not be removed from more than one cable at a time.

21

After receiving clearance and before spiking a cable, all phases of the cable shall be short-circuited and grounded at both ends wherever practical. The ground switch of the high side terminal of each network transformer, adjacent to the work location, shall be placed in the grounded position. This grounded condition shall be maintained during the entire work procedure except as necessary for phasing.

22

After the cable has been identified and the above precautions have been taken, the cable shall be spiked with a remotely controlled power-driven spiker at the point to be cut. No worker shall remain in the enclosed space at the time the spiking test is made.

23

When asbestos abatement is required, only properly trained personnel are allowed to remove and dispose of the material using the appropriate OSHA standards.

24

Manhole covers shall be removed and replaced with a proper tool and appropriately seated.

25

When working in a vault which contains energized equipment, both doors shall be unlocked except when switching.

26

All network transformers shall be energized by using the substation breaker or fuse disconnects. No worker shall remain in the vault when the new transformer is being energized.

115 WORKING ABOVE GRADE

LADDERS

01

Only approved ladders shall be used in a safe manner. Manufacturers' weight limit shall not be exceeded.

02

Ladders shall be visually inspected before they are used.

03

Defective ladders shall be tagged and removed from service. If they are not repairable, they shall be destroyed.

04

Workers shall face the ladder and use both hands when climbing up or down. Tools shall not be carried in the hand. They shall be raised or lowered in a safe manner.

05

Workers shall not slide down a ladder. They shall take one step or rung at a time.

06

Only one worker at a time shall work on a ladder, unless otherwise indicated by the manufacturer's recommendations.

07

The ladder shall be moved as work progresses to avoid overreaching. Two ladders shall never be lashed together to make a longer one.

08

When using straight or extension ladders, workers shall not climb past the third rung from top.

09

Workers shall ensure that both latches of an extension ladder are seated properly. The minimum overlap for extension ladders is three feet.

10

Ladders shall be tied off, top and bottom, to a substantial support whenever practical or a ladder lock shall be used. Under certain conditions it may be necessary for another worker to hold the ladder to prevent falling or slipping.

11

The ladder shall be placed at a proper angle, with the base set out one foot for every four feet of ladder length.

12

When working from a ladder, and the job requires the use of both hands, an approved safety belt shall be worn as a positioning device.

13

If a worker is required to transfer from a ladder to a landing, the side rails shall extend at least three feet above the landing.

14

When using a step ladder, the worker shall not stand on the top step or on the top of the ladder.

15

A step ladder shall not be used as a substitute for a straight ladder.

16

Before climbing a step ladder, workers shall make sure spreaders are fully extended and locked.

17

Workers shall climb the steps of a step ladder, not the support rungs.

18

Before using a platform ladder, it shall be checked to determine that the locking mechanism is functioning properly.

19

Ladders shall not be painted, except that a non-skid paint may be applied to steps or rungs.

20

Portable metal ladders and other portable conductive ladders shall not be used near exposed energized lines or equipment.

21

In the event a worker needs to climb a customer roof, refer to the roof access policy: 115 Roof Access Plan.pdf (tec.net)

LIFTING AND CARRYING

01

When lifting, carrying, or lowering objects, approved methods shall be followed. Mechanical aids shall be used whenever possible.

02

Approved methods include straight posture, lifting using leg muscles, good footing, and avoiding over-extending and twisting.

03

Loads shall be carried in such a way as to permit a clear view of the path to be followed.

04

When two or more workers are required to lift or pull together as a team, their efforts shall be coordinated. One shall give the signal for the group.

05

When carrying pipes, conduit or other long objects, special care shall be used when rounding corners and entering doorways.

Return to Top

SCAFFOLDING

01

Scaffolds shall be designed by a competent person. Scaffold erection shall be done under supervision of a competent person. A competent person has gone through the proper training in order to design scaffold.

02

The scaffold must be inspected by a competent person prior to each work shift and after any incident which could alter the scaffold's safety.

03

Scaffold components shall be maintained in good repair and inspected before erection. Any broken, bent, altered or otherwise structurally unsound frame or support members shall not be used. All scaffolds and their supports shall be capable of supporting the load they are designed to carry with a safety factor of four.

04

When scaffolds must be erected on soft or filled ground, sufficient sills or underpinnings shall be used to insure stability. See Scaffold setup procedures at this link: Scaffold Setup (tec.net)

05

The legs or uprights of scaffolding shall be plumb and securely and rigidly braced to form a stable work platform. Braces shall not be forced to make them fit.

06

Adjusting screws, rather than blocking, shall be used to compensate for uneven ground.

07

Whenever possible, scaffolding shall be secured to a building structure. When this is impractical, outriggers or guying shall be used.

08

All open sides of platforms more than ten feet above the ground or floor shall be protected by guardrails, midrails, and toeboards.

09

When work is being performed over workers working on a scaffold, overhead protection shall be provided on the scaffold.

10

Barricades and warning signs shall be used to keep workers from passing beneath scaffolds. When workers must work or pass under scaffolds, steps shall be taken to protect those below from the hazard of falling tools or material. (i.e., fencing would be used)

11

A ladder or equivalent means of safe access shall be provided to the platform. Crossbraces shall not be used as a means of access.

12

Only "scaffold grade" lumber shall be used for platform planking. Planks shall be laid solid. Planking shall extend beyond end supports by at least six inches and not more than eighteen inches. Planks shall be secured.

13

No scaffold occupied by workers shall be moved horizontally.

14

Materials, tools, or debris shall not be allowed to accumulate on scaffolds and create a hazard.

15

Workers on scaffolds shall work on the platform and shall not use ladders or makeshift devices to gain added height from the platform.

16

Castor brakes on rolling scaffolds shall be locked before workers climb them. Check that castors are pinned into the frames.

17

Ladders shall not be placed in the horizontal position for use as scaffolding.

18

Scaffolds shall not be used as material hoist towers, or for mounting derricks.

AERIAL DEVICE OPERATIONS

01

Workers shall visually check all aerial devices at the first job of the day before use. The lower controls shall be operated and checked before anyone goes aloft.

02

No one on the ground shall operate the controls to the aerial device while occupied, except in an emergency or when following the direct orders from the worker in the aerial device.

03

The aerial device shall be parked out of traffic whenever possible.

04

Workers shall make sure that the brakes are set before setting up the aerial device. When parking on an incline, chocks shall be used.

05

If the vehicle is provided with outriggers, they shall be used. Before operating outriggers, workers shall first check to see that everyone is in the clear. The outriggers shall be firmly placed on pads or firm footing before operating the boom.

06

Workers working in aerial devices which do not meet the criteria of an approved work platform shall use a personal fall protection system with a shock absorbing lanyard properly attached to the boom or basket.

07

Workers shall not climb into or out of the aerial device while the aerial device is elevated, except in an emergency. Workers shall not belt off to a structure while working in the aerial device. When working transmission poles or towers where the aerial device will not reach, it is permissible to strap off to the structure then remove the lanyard and climb the remaining distance.

08

The operating control box shall be kept clear of materials and tools. No objects, except approved storage containers, shall be allowed to hang on the outside of the basket when working in an energized area.

09

No tools or equipment shall be rigged to the basket in such a manner as to cause the basket to become unstable.

10

The boom shall be cradled when the bucket truck is being moved. Workers shall not ride in an aerial basket when the bucket truck is moving. Buckets shall not be operated in winds higher than 30 miles per hour.

11

The manufacturer's designated load limit shall not be exceeded in the loading of an aerial device.

12

When operating a multi-person aerial device, no change in device position shall be made without the knowledge of all workers except in case of an emergency.

13

Good housekeeping shall be exercised in the basket.

14

Workers on the ground should make every effort to minimize work within the drop zone beneath workers working in the air. Workers on the ground should notify workers in the air upon entering the drop zone.

15

Exercise caution when entering bed of aerial device. 3-way communication shall be utilized between person in aerial device and any person entering the bed of the truck.

16

The lower aerial device control area shall be kept clear of materials and tools.

17

When operating the aerial devise around energized lines and overhead structures, be aware of where the upper and lower boom is at all times.

Return to Top

WORKING ON OVERHEAD STRUCTURES (i.e., pole, tower).

01

Before climbing ladders\scaffolds on steel structures, or other elevated structures, a thorough inspection shall be made to determine if they are safe. When there is doubt, they shall not be climbed until they are made safe by guying, bracing or other adequate means fall protection devices shall be used when climbing.

02

Workers on the ground shall stay clear of the overhead work to prevent being struck by falling objects.

03

Tools or materials shall not be thrown up to or down from structures or elevated work areas.

04

Prior to working an elevated structure, the worker shall become acquainted with the physical layout and condition of the conductors, poles, guys, and equipment on the structure on which work is to be performed.

05

Workers shall avoid standing on any foreign equipment which may be attached to the structure or located near it. Workers shall not trust their weight to pins, braces, guy wires, lines or other such equipment which may be unstable.

06

When working on elevated structures, workers shall wear approved fall arrest protection. When strapping off, workers shall observe the hooking of the safety snap into the D ring.

07

No one shall be permitted under a structure which is being erected or assembled.

08

Tag lines shall be used to guide and handle steel. See SWP 134 Material Handling & Storage.

Return to Top

116 CRANES AND HOISTS

Reference ED Cranes, Hoists, & Riggings Hardware programs.

117 Service & Meter Installation

01

When entering or working on customer property, workers shall check for hazardous conditions, such as tripping hazards, dogs, or other potentially dangerous animals.

02

Prior to starting work on a meter installation, all meter parts shall be treated as energized until tested for voltage. If a neutral or ground is disconnected, all meter parts will be treated as energized until a permanent ground is installed. At any time when removing the lid from a meter can, rubber gloves shall be worn.

03

Proper tools shall be used in testing for voltage or polarity. All devices to be used for metering, testing and/or checking of electrical equipment shall be used in accordance with the manufacturers' instructions.

04

All tools, leads, jumpers, and test equipment shall be inspected before each use. Defective tools/equipment shall be immediately tagged and removed from service.

05

All electrical metering and testing devices shall be maintained in a safe, serviceable, clean, and ready to use condition. All leads, power cords, etc. shall be inspected before each use to ensure insulating material(s) are not worn, cracked or otherwise defective. Any hazardous condition shall be corrected before further use of the device.

06

Only qualified workers shall be allowed to use electrical metering or testing devices.

07

Before installing a meter in a new or previously vacated meter socket, a visual check shall be made of the meter (including nameplate and meter base) and enclosure to ensure that the proper meter is being used and the equipment is in good working condition.

08

On all reconnects and new services, tests shall be made for backfeed, proper phasing and voltage, and grounded conductors before installing a meter.

09

All socket-type meters shall be installed or removed with proper gloves. "Cut level work" gloves are intended for physical protection only. Rubber insulating gloves are required for voltage protection.

10

When inserting socket-type meters into socket bases or adapters, load-side prongs shall be inserted first, then line-side. Meter removal shall be accomplished in the reverse order. The exception is a 12S, 5th terminal network meter. It shall be installed and removed straight in and out due to the horizontal 5th terminal. Special care shall be taken when setting or removing network meters so that the 5th terminal on the meter or socket is not damaged.

11

Special care shall be taken when installing or removing meters with teaser wires, affixed cables, or harnesses.

12

When inserting a socket-type meter, the meter cover shall not be struck with the hand or other objects. Should breakage occur or exist, all broken material shall be removed from the meter and the customer's premises and disposed of in a safe manner. Broken or cracked material shall be removed before shipping.

13

Before bypassing any meter device with jumpers, a check shall be made to ensure that all electrical connections are tight and, by use of a voltage tester, that the polarity of all jumpers is correct.

14

When the primary side of a current transformer (CT) is energized, the secondary side of the CT shall be properly wired to the test switches in the meter socket along with the proper meter or flat bars installed in the socket, or else the CT must be shunted.

15

Extreme caution shall be used when working on or near meter installations above 240 volts. When working on energized self-contained 480 voltmeter sockets, all FR clothing and additional PPE are required to be equivalent to 20 Cal FR-HRC2 (Equals 8 cal.) shirt with long sleeves and pants (In addition to minimum category FR12 coveralls with the 20 Cal Hood, face shield and rubber gloves) shall be worn.

16

Meters shall not be tested, installed, or removed where explosive gases are suspected.

17

When installing, removing, or working on or near energized meter installations, the appropriate PPE and face shield shall be worn. Face shields shall also be worn when working on energized metering equipment; large wire trough installations, or large group metering installation or any time a hazardous condition exists which may cause a flash or injury to the face or eyes. FR clothing shall be worn properly.

Rubber gloves shall be worn while working energized secondaries and setting meters.

18

When pulling services, all exposed conductors within reaching distance shall be covered.

19

When working on energized lines, workers shall not overreach the protective equipment.

20

Secondaries shall be worked from below, whenever possible.

21

Services shall not be energized without the consent of the worker at the other end.

22

A check shall be made on temporary service supports to determine stability before placing a ladder against it.

23

Services shall be de-energized where damage or deterioration may cause a flash if a meter is removed.

24

If a visual inspection of the metering installation reveals that the removal of the meter may cause a fault, no attempt shall be made to remove the meter until the service has been de-energized.

25

Customer loads shall be turned off before installing or removing meters, when practical.

26

Meter socket bypass handles shall not be used as service load break or load pickup devices.

27

If a meter socket is to be left energized, a proper meter or approved socket cover shall be installed, or other protective measures taken.

28

Portable test equipment leads shall be connected to the test equipment before energizing the test circuit.

29

Potential test leads and jumpers used in testing watt-hour meters shall be properly fused.

30

Properly sized fuse pullers shall be used to remove cartridge type fuses.

31

When removing or installing bolted-in, polyphaser self-contained meters, the meter socket shall be de-energized, unless approved insulated (rated) tools are being used.

118 SOLVENTS

PAINT, PAINT STORAGE, SOLVENTS, FIBERGLASS AND GEL COAT

01

Review Safety Data Sheets (SDS) and follow recommendations for personal protective equipment, storage, and handling practices.

02

Only approved solvents shall be used. Solvents shall receive approval by evaluation through the Standards and Safety departments.

03

When painting with a brush, on or near energized parts at 600 volts or above, the brush shall be attached to an approved insulated handle.

04

Adequate ventilation shall be maintained in enclosed areas when painting.

05

Only proper solvents shall be used to clean brushes. The solvent shall be disposed of properly in approved containers in accordance with environmental procedures.

06

Open flames shall not be permitted in the area where painting is being done.

07

Approved PPE shall be worn when spray painting is being done.

08

Air pressure to paint spray guns shall be properly regulated.

09

Oil-based paint, varnishes and paint thinners shall be kept and transported in approved containers. The approved container lid shall be properly sealed, so vapors do not escape.

10

When oil-based paint is kept in the original container, the lid shall be properly sealed, so vapors do not escape. When not in use, containers of paint, lacquer, varnish, and thinners shall not be left open.

11

Paint and paint by-products shall be stored in an approved storage area, where there is adequate ventilation and no excessive heat.

12

Pressurized cans of paint, lacquer, etc. shall not be left in direct sunlight or where there is excessive heat. When not in use, pressurized cans with recoverable product shall be stored in an approved storage area. Empty cans and cans with non-recoverable product shall be disposed of properly. They shall not be punctured or placed in a fire.

13

When required, an eyewash fountain and safety shower shall be readily available and in good operating condition.

14

Practice good personal hygiene at all times, including washing hands thoroughly after handling products and before eating.

15

Paint waste and empty containers shall be properly disposed of in accordance with departmental procedures and SDS information. Only an approved can deflator with a non-sparking puncturing device shall be used for all pressurized non-recoverable aerosols. Expanding foam shall be placed in approved waste accumulation container for disposal.

16

Workers shall comply with the manufacturers' specifications for the safe application of these products.

17

An approved respirator shall be used when applying or sanding any paint, fiberglass, or gel coat product.

18

Approved safety eyewear with side shields shall be worn when handling, mixing, or applying these products.

19

Approved chemical resistant gloves shall be used in accordance with the SDS.

119 SUBSTATIONS

01

Only qualified workers, or visitors accompanied by a qualified escort, may enter a substation, and shall wear all appropriate PPE.

02

The person in charge shall check-in with ESO/DSO upon arrival and check-out when leaving.

Upon entering a substation where other workers are present, report your presence to the person in charge to exchange information on special system conditions affecting worker safety and review the job risk briefing form.

03

When working in an energized substation, gates shall be kept closed and latched.

04

Substation keys shall be issued only to authorized persons. Workers are not permitted to loan substation keys to unauthorized individuals.

05

All fences and gates shall be checked to be bonded and grounded before entry. Danger High Voltage signs shall be permanently displayed on the fence on all sides of the substation. Damage to fences shall be reported immediately to the supervisor. If any ground is cut or not bonded, no entry shall be made until ESO/DSO has been notified.

06

Parking shall not be allowed within the substation unless required for work purposes.

07

Those entering or working in an energized substation shall not carry anything on their shoulders.

08

Before driving a vehicle into a substation, workers shall check clearances between protruding parts of the vehicle and the substation equipment and shall never drive over trough covers unless they are rated for it.

09

No materials or equipment shall be stored under energized buses, lines or near energized equipment.

10

When leaving a substation, workers shall lock all doors, control houses and outside gates and check to be sure everything is secure and in proper order. Consideration shall be given to eliminating conditions which might attract unauthorized entry.

11

Barriers shall be used to warn of hazards adjacent to the work area.

12

When work is to be done in an energized substation, the person in charge shall determine:

a) That people who enter the area are qualified.
b) A job briefing shall be filled out to identify all hazards and barriers needed to reduce risk. Hazards shall be communicated to all workers.

13

Climbing above exposed energized equipment or conductors is not permitted.

14

All equipment shall be considered energized at full voltage unless de-energized, tested for voltage and grounded. In a substation, special precautions shall be taken to guard against hazards of induced voltage. See SWP 124 Working on or Near Energized Lines (Induced Voltage).

15

No one shall be permitted to approach or take any conductive object any closer to exposed energized parts than the Minimum Approach Distance shown in Table R-6 unless:

a) The worker is insulated from the energized part; or
b) The energized part is insulated or guarded from the worker. See SWP 124, Working on or Near Exposed Energized Lines or Equipment.

16

Chain jacks shall not be used on energized conductors or equipment. When using chain jacks on de-energized conductors or equipment, where accidental contact with energized equipment could be made, protective equipment shall be used.

17

When it is necessary to do any switching in a substation where workers are present, the Switching Supervisor shall notify the persons holding clearances in the substation, who in turn, shall notify their workers.

18.

If workers need to enter a transformer or vessel requiring Confined Space entry procedures, see SWP 114, Confined Spaces.

120 HOT WORK

Reference Hot Work Permitting Program.

https://tecoenergy.sharepoint.com/sites/SafetyPortal/SafeWorkPractices/SWP/Forms/AllItems.aspx

121 CAPACITORS

01

When opening or closing the capacitor bank (cap-bank) ground, rubber gloves shall be worn.

02

Live-line tools shall be used to short out and ground capacitors.

03

Before working on capacitors, they shall be de-energized, shorted-out, and grounded.

04

Workers shall wait five-minutes before shorting out capacitors to allow the capacitor to drain itself by built-in discharging devices.

05

When capacitors are removed from service, they shall be shunted with a minimum number size #6 copper wire and shall remain shunted until they are put back into service or discarded.

06

When opening a cap-bank disconnect controlled by a time clock or other remote device, check to be sure all switches are OPEN.

07

When opening any disconnect associated with capacitors a load-break device shall be used.

08

When closing disconnects associated with capacitors make sure all switches are open.

09

Use the delay setting to close the capacitors. Make sure all switches are open prior to closing with a remote device.

122 CLIMBING POLES | STRUCTURES

01

Prior to climbing poles and structures, an inspection using the approved method shall be made to determine if the poles or structures can sustain the additional or unbalanced stresses which they will be subjected to from climbing or from adding or removing conductors or equipment.

Please refer to Appendix D to Subpart V of Part 1926-Methods of Inspecting and Testing Wood Poles.

02

If the pole or structure cannot withstand the loads which will be imposed, it shall be braced or otherwise supported to prevent failure.

03

When climbing, workers shall avoid standing on any foreign equipment which may be attached to the pole or structure or located near it. Workers shall not trust their weight to pins, braces, guy wires, lines or other such equipment which may be unstable, unless specifically designed to support the weight of a person.

04

When climbing poles care shall be exercised to set the gaff securely in the pole. Avoid weather cracks, knots, holes, nails, signs, grounds, or other pole attachments. A step bolt is a bolt or rung

attached at intervals along a structural member and used for foot placement during climbing or standing.

05

Workers climbing poles shall be always attached by means of a fall arrest protection (e.g., Bucksqueeze or a Buckadjuster). Workers shall always verify a proper connection between the snap hook and D-ring.

06

The fall arrest protection (e.g., Bucksqueeze/Buckadjuster) shall not be placed around the top of the pole, at the end of a crossarm, on crossarm braces or in any other place where it may possibly slip off. The fall arrest protection shall not be placed around pins or similar parts of the structure which might break.

07

Climbers shall not be worn on the ground unless in position to climb a pole.

08

Workers shall check to be sure the gaffs are properly sharpened and within safe length limits and when climbers are stored; the gaffs shall be covered with approved protectors.

09

When two or more workers are to work on the same pole, one shall reach the working position before the other leaves the ground. Descending the pole shall be done one at a time.

10

While standing on the pole, and using a chain saw, a separate steel safety shall be used in addition to the fall arrest protection. All cuts must be made above the fall arrest protection.

123 CURRENT & POTENTIAL TRANSFORMERS

01

Repair work shall not be performed on an energized instrument transformer.

02

Unless in normal operation, the secondary winding of a current transformer shall be short-circuited when the primary circuit of the current transformer has current flowing in it. Failure to do this results in dangerous voltage in the secondary circuit.

03

The cases of all instrument transformers shall be grounded except for the non-metallic cased 600-volt type.

04

The lack of voltage on the low voltage side of the potential transformer shall not be considered as positive indication that the high voltage side is de-energized.

05

When performing a task on overhead (OH) specialty feedthrough equipment that allows voltage to pass through, such as, but not limited to primary metering and auto reclosure switches, the preferred method is to de-energize, isolate, test, and ground. When de-energizing is not feasible, such as taking an outage on industrial customers, team members shall perform a hazard assessment, use the appropriate insolate and isolate methods, and obtain an EWP.

06

When inserting test jacks into switchboard draw out type meters or into meter test blocks, test leads, and equipment shall be checked to ensure that current transformer secondaries are not open-circuited.

07

When an open circuit exists in the secondary of a high voltage current transformer, the current transformer shall be de-energized before the secondary is closed. If an open circuit in a low voltage current transformer secondary is encountered, 20,000-volt gloves shall be worn to close the secondary. If arcing exists, extra care shall be taken or the circuit de-energized before the secondary is closed.

08

All secondary connections to primary metering instrument transformers shall be visually inspected by a qualified worker before energizing. This includes checking secondary connections on pole-mounted clusters.

09

Before clearing a high-voltage circuit for the purpose of working thereon, all voltage transformers shall be disconnected from the circuit.

124 WORKING ON OR NEAR ENERGIZED LINES AND EQUIPMENT

01

Before working on energized primary, an Energized Work Permit (EWP) is required.

02

All circuits and equipment shall be considered energized at full voltage until de-energized, tested for voltage and grounded.

03

An interrupting device shall be used to open a primary load.

04

Open pole grounds shall be considered energized until a check proves otherwise. Where the possibility of back feed exists, a potential test shall be made before the conductor or equipment is considered to be de-energized.

05

Overhead series street lighting circuits and equipment shall be considered energized and worked as such unless they are de-energized and grounded.

06

Mechanical jumpers shall not be used on any underground cable terminations or on the associated hardware at the connection point of the switch.

07

Crossarm braces shall not be relied upon to support a worker's weight.

08

When work is being performed overhead, workers shall remain away from the base of the pole, except to assist the person doing the overhead work.

09

All equipment and tools to be used aloft shall be raised and lowered by aerial basket, hand line, canvas bucket, or other suitable container. Heavy items shall be raised by crane or hoist. Items shall not be thrown or dropped unless an established drop zone has been determined.

10

When working along streets or highways, workers shall exercise care to keep hand lines from blowing into the lane of traffic.

11

When working at night, floodlights or other portable lights for emergency lighting shall be provided to perform the work safely.

12

The stress on a pole shall not be changed by adding or removing any conductor or guy until it is determined that the pole will withstand the altered stress.

WIRE STRINGING OPERATIONS

01

When in use, all pulling and tensioning equipment shall be grounded. Workers shall not touch equipment unless rubber gloves are being worn.

02

A traveling ground shall be installed between the tensioning reels and the first structure in order to ground each bare conductor during the stringing operations.

03

During stringing operations, each bare conductor shall be grounded at the first structure adjacent to the tensioning machine and at increments no more than two miles apart. Each conductor shall be grounded after it has been pulled in.

04

The grounds shall be left in place until the conductor installation is complete. Such grounds shall be removed as the last phase of the stringing operations.

05

When adjusting brakes while standing on the ground, rubber gloves shall be worn.

06

Wire being strung, removed, or sagged close to energized lines or equipment shall be handled with rubber protective equipment unless adequately grounded.

07

Wires or rope being pulled in or out shall not be allowed to sag to less than 18 feet over a street or highway.

08

Rope, lines, cables, or wires hanging from poles, structures or equipment shall be tended or properly secured.

09

Workers shall not stand in loops of rope or wire. Workers shall not tie wire or rope around the body.

10

Reliable communications, through two-way radios or other equivalent means, shall be maintained between the reel tender and the pulling rig operator. OSHA regulations 1926.964(b)(9) Communications: https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.964

WORKING ON OR NEAR EXPOSED ENERGIZED LINES OR EQUIPMENT

Purpose:

The purpose of protective cover and its application are to protect the worker in the event he should slip or make an unintended move. The arrangement of cover should be such that it prevents possible or accidental contact with energized lines as well as paths to ground and objects of different potential.

01

Only qualified workers may work on or with exposed energized lines or parts of equipment. Only qualified workers may work in areas containing unguarded, un-insulated energized lines or parts of equipment operating at 50 volts or more. Electric lines and equipment shall be considered and treated as energized unless they have been tested for voltage and grounded.

a) Except as provided below in paragraph b, at least two workers shall be present while the following type of work is being performed:

i. Installation, removal, or repair of lines that are energized at more than 600 volts.
ii. Installation, removal, or repair of de-energized lines if a worker is exposed to contact with other parts energized at more than 600 volts.
iii. Installation, removal, or repair of equipment, such as transformers, capacitors, and regulators, if a worker is exposed to contact with parts energized at more than 600 volts.

b) Paragraph a. does not apply to the following operations:
i. Routine switching of circuits if conditions at the site allow the work to be done safely.
ii. Work performed with live-line tools (hot sticks), if the worker is positioned so that he or she is neither within reach of nor otherwise exposed to contact with energized parts, and
iii. Emergency repairs to the extent necessary to eliminate hazards and safeguard the general public.

02

Note: When work is performed within minimum approach distance of exposed energized parts or equipment, the worker shall remove or render nonconductive all exposed conductive articles, such as key or watch chains, rings, or wrist watches or bands, unless such articles do not increase the hazards associated with contact with the energized parts.

Minimum Approach Distances: Workers shall don insulating gloves and\or sleeves as required before they are in a position from which they can reach into the minimum approach distance. No worker shall approach or take any conductive object closer to exposed energized parts than set forth in Table R-6, Minimum Approach Distance unless:

a) The worker is insulated from the energized part. Insulating gloves or insulating gloves and sleeves worn in accordance with Section 210 are considered insulation of the worker.
b) The energized part is insulated from the worker and from any other conductive object at a different potential.
c) Whenever work requires workers to enter or work on any overhead primary energized conductor or equipment, within the minimum approach distance, (Table R-6). An Energized Work Permit shall be required.
d) Once an Energized Work Permit has been installed, the person receiving the Energized Work Permit shall remain on the job site until the tag has been properly released and removed.
e) In addition to the appropriate arc rated FR clothing & safety glasses, the 8-cal. arc flash protective face shield shall be worn when performing the following tasks:

i. Switching of all live-front padmount equipment. The use of a face shield is not required on dead-front padmount equipment but is recommended.
ii. When deemed necessary by supervision. This applies to workers doing the physical work and those standing within a minimum of 10 feet from operating equipment.

f) Switching of all 600 amp disconnect switches shall be performed with a minimum of a 10 foot-stick.

Return to Top

AC Live-Line Work Minimum Approach Distance (Table R-6)		
Voltage	Distance	
Phase to Phase	Phase to Ground Exposure	Phase to Phase Exposure
0.05 to 1.0 kV	Avoid Contact	Avoid Contact
1.1 to 15.0 kV	2 ft.-2 in.	2 ft.-3 in.
15.1 to 36.0 kV	2 ft.-4 in.	2 ft.-7 in.
36.1 to 46.0 kV	2 ft.-7 in.	2 ft.-10 in.
46.1 to 72.5 kV	3 ft.-0 in.	3 ft.-6 in.
72.6 to 121 kV	3 ft.-2 in.	4 ft.-3 in.
138 to 145 kV	3 ft.-7 in.	4 ft.-11 in.
161 to 169 kV	4 ft.-0 in.	5 ft.-8 in.
230 to 242 kV	5 ft.-3 in.	7 ft.-6 in.
345 to 362 kV	8 ft.-6 in.	12 ft.-6 in.
500 to 550 kV	11 ft.-3 in.	18 ft.-1 in.
765 to 800 kV	14 ft.-11 in.	26 ft.-0 in.

Note 1:

These distances take into consideration the highest switching surge a worker will be exposed to on any system, with air as the insulating medium and the maximum voltages shown.

Note 2:

The clear live-line tool distance shall equal or exceed the values for the indicated voltage ranges.

03

Workers shall wear approved FR clothing and 100% cotton as listed below, while working on energized lines and equipment. FR clothing shall be worn properly: Sleeve cuffs shall be fully rolled down and secured. All buttons below the collar shall be secured. Shirt tails shall be tucked into pants.

TECO'S approved FR clothing consists of:

a) FR shirt meeting a minimum Arc rating of HRC: 2 with long sleeves.
b) FR pants meeting a minimum Arc rating of HRC: 2.
c) FR jackets or coats shall meet a minimum Arc rating of HRC: 2.
d) FR or 100% cotton or other natural fiber undergarments.

04

Extreme caution shall be exercised when working on energized lines in inclement weather.

05

Workers doing work on energized lines shall devote their undivided attention to the work at hand.

06

When practical, all protective equipment shall be installed from a level below the conductor or equipment. The removal of protective equipment shall be done with equal care in reverse order. When covering secondaries, the conductor nearest the worker shall be covered first.

07

Workers working on energized lines and equipment shall position themselves below the work whenever possible.

08

When working on or near energized circuits on wood poles, workers shall avoid standing on or touching grounds. Pole grounds are also potential hazards and require cover if they cannot be avoided.

09

When two or more workers are working within reach of each other, they shall not work simultaneously on different phases or items at different potentials.

10

Strap jacks or blocks are preferred for use on energized conductors. Caution shall be exercised when chain jacks are used.

11

When it is necessary to lay an energized conductor on a crossarm or pole, either the conductor shall be covered with approved insulating equipment, on the crossarm or pole shall be covered with an approved guard. (New) Mechanical jumpers that may encounter any other object, pole, x-arm etc. shall be covered or the object itself covered or both.

12

A system neutral shall not be opened until the proposed opening has first been jumpered or by-passed.

13

When it is necessary to perform live-line tool work on lines which are energized, such work shall be performed by qualified personnel.

14

The worker in charge of the live-line tool work shall specify which lines may be worked and what work is to be done.

15

The worker in charge of the live-line tool work shall closely supervise the work and keep workers advised as to their personal safety and handling of the live-line tools.

16

Live-line tools shall be carefully inspected for defects before they are used, they shall be wiped down with a silicone impregnated cloth before use.

17

Each live-line tool shall be removed from service every two years and thoroughly examined for defect. If a defect or contamination that could adversely affect the insulating qualities or mechanical integrity of the live-line tool is found, the stick shall be repaired and refinished or shall be permanently removed from service. If no such defect or contamination is found the live-line tool shall be cleaned and waxed.

18

Proper minimum approach distance between the worker and the energized conductor shall be maintained.

19

Rope shall not be allowed to come in contact with energized conductors of 69 kV and above.

20

All energized conductors and equipment within reaching distance shall be covered. Always check that ground personnel are in the clear before installing or removing cover as well as moving conductors.

21

Workers shall not reach beyond the protective equipment.

WORKING ON DOWNED LINES & EQUIPMENT

Reference Grounding Main Line Feeders During Restoration.

01

"Attached to the circuit" is defined as lines or equipment that are connected to Tampa Electric Company's electrical circuit and/or customer load.

02

Downed lines and equipment still attached to the circuit shall be considered energized at full voltage until de-energized, tested for voltage, and grounded.

03

Before beginning work, the person in charge shall take measures to protect workers and the public, identify special hazards related to induced voltage and backfeed, and develop a plan of action. A tailboard conference shall include the above when a crew is involved.

04

Workers doing work on downed lines and equipment shall exercise extreme caution and devote their undivided attention to the work at hand.

ATTACHED TO THE CIRCUIT

01

Work downed lines and/or equipment as energized at full voltage. Or, where both ends of the line are visible from the point of work and the downed line and/or equipment is isolated from Tampa Electric Company's electrical circuit but not Customer load, the line and/or equipment shall be grounded after testing for voltage. Under these circumstances, grounding can be accomplished without tagging and obtaining clearance.

NOT ATTACHED TO THE CIRCUIT

01

When a downed line and/or equipment is isolated from Tampa Electric Company's electrical circuit and customer load, the line and/or equipment can be handled from the ground with 20 kV rubber protective gloves.

02

If the above conditions cannot be met and the line and/or equipment must be hand-held by personnel on the ground, established switching and tagging procedures shall be followed (which would include isolating, tagging, testing for voltage, and grounding).

INDUCED VOLTAGE

Note: To guard against "Induced Voltage" refer to the following:

a) SWP 108 Lockout Tagout (Grounding Procedures)
b) SWP 119 Substation & Circuit Breakers (Working in Energized Substation)
c) SWP 124 Working on or Near Energized Lines

01

On de-energized lines and equipment, in the vicinity of energized high voltage stations, and/or where energized lines run parallel to de-energized lines, caution shall be exercised to guard against induced voltage.

02

On all 230 kV circuit breakers and other circuit breakers which require entering the tank to work on current-carrying parts, the bushing terminals shall be grounded.

125 LOADING & UNLOADING POLES

Preface: For concrete and metal poles appropriate nylon sling shall be used. For all wood poles appropriate metal sling shall be used. A qualified operator shall position digger derrick, crane and or

apprentice loader boom directly overload with appropriate rated sling or grabbers before lifting load verify pole is manageable and on balance.

01

A Qualified Operator will perform a Job Risk Briefing which will include the task to be performed, hazards involved in performing this task, and the barriers needed to mitigate any hazards.

02

During pole loading or unloading operations, workers shall not stand between the pole pile and the loading or transporting equipment.

03

As part of maintaining the safe lifting zone, workers shall not stand or pass beneath suspended loads.

04

The operator must maintain a safe operating distance from any pinch points, overhead suspended loads, and Line of Fire situations.

05

When pole handling operations (e.g., pushing, pulling, loading, lifting, unloading) are being performed a safe lifting zone shall be established and maintained by the work crew.

06

Care shall be taken to position workers and equipment in such a way as to avoid injury or damage.

07

When guiding poles to control the movement, workers shall be positioned so that they are out of the Line of Fire. When necessary, a tag line shall be attached to ensure pole drift is maintained.

08

When lifting a pole within the minimum approach distance to the primary, an approved lifting plan shall be established.

09

When poles are to be rolled from a pile or from a trailer to the ground, it shall be done with a line, fiberglass handled cant hook or other approved tools. Wood handled cant hooks shall not be used. Fiberglass cant hooks shall not be used to support the weight of the pole while moving the sling.

10

Poles shall be securely fastened to the trailer when being hauled. Fabric pole straps shall be inspected daily and taken out of service when they are found to be frayed, discolored or in poor condition. During daylight hours, a red flag shall be fastened to the far end of the pole that protrudes furthest to rear. After dark, a steady burning red light shall be used instead of a flag.

11

When hauling poles, it may be necessary to have a follow vehicle depending on pole length.

12

When maneuvering corners, motorists shall be given as much advance warning as practical. When a tailer is used, tailer should properly position self to create a buffer zone.

13

A pole trailer with a pintle hook attachment shall be properly connected to its towing vehicle with safety latches and chains.

14

Whenever possible, poles temporarily stored along the streets or highways shall be placed back of the curb or beyond the ditch line and blocked so that they cannot roll.

15

When preparing to unload poles from a transporter, steel stanchions shall be securely in place before restraining straps are released or restraining bands are cut.

16

Workers shall not ride the pole or the hooks when loading or unloading poles.

17

Extra caution shall be exercised during pole hauling operations to avoid blocking roadways and intersections and otherwise endangering traffic; due to limited visibility of the poles and additional hazard presented by the extended load.

18

A safe lifting zone shall be established. The operator will move the pole hauler / IMT loader into position, setup equipment and confirm that the outriggers are on stable ground and in a good location and unstrap the pole to be removed from the trailer.

19

One qualified Line worker / Operator can perform this task following all the procedures of the SWP as stated above.

126 SETTING & PULLING POLES

01

When setting and pulling poles, a clear work zone shall be established during the pre-job risk briefing.

02

Prior to digging with any mechanized equipment, (Dial 811) Sunshine State One Call of Florida, to get any underground utilities marked. Hand digging is permissible in an emergency. If the call has already been made, make sure that you have the locate ticket number on site for reference in case of a problem. All after hour Emergency Locate Ticket requests must be made Online.

03

When operating a piece of equipment via remote operating panel the operator must maintain a safe operating distance from any pinch points, overhead suspended loads, and line of Fire situations.

04

While any pulling, lifting, loading, or unloading operations are being performed the operator must maintain a clear and safe work area for any persons that could be in the work area.

05

Poles being raised or lowered shall be handled with the butt end heavy, if possible. When a standing pole is cut off, it shall be always kept under control.

06

Truck outriggers shall be properly extended when setting or pulling poles. Outrigger pads shall be placed on firm footing. See Pole Pulling Guidelines.

07

While a pole is suspended from the derrick or truck's winch line, the truck shall not be moved except for a determined distance as identified by the hazard risk assessment.

08

When setting or pulling poles between or near energized lines, the worker who may contact or come in close proximity to the pole or truck shall wear high voltage rubber gloves. The boom and cable shall be kept clear of conductors. Any conductor and/or pole that may be contacted shall be covered with approved insulating equipment. When setting or pulling poles without pole guards, no pole shall pass through or by any uncovered primary conductor.

09

When setting or pulling poles in close proximity to an energized circuit, the automatic reclosing apparatus protecting such circuit shall be rendered inoperative and an Energized Work Permit (EWP) shall be installed.

10

When piking poles, extreme caution shall be used to keep the pole under control at all times.

11

Workers shall not be on poles that are being plumbed or tamped unless they are properly secured.

12

When pulling poles or pole butts the cable or boom shall not be overloaded due to the weight of the pole and its adhesion to the ground. Other suitable means such as pole jacks, digging around the pole, etc., shall be considered. Do not use the winch to pull a pole that is firmly imbedded in the ground. Attempting to pull a pole with the winch that is firmly imbedded in the ground could overload the derrick, resulting in possible component failure. Use the pole puller and / or hand dig to break the pole loose from the ground before using the winch to pull the pole out of the ground.

13

When setting or pulling concrete or steel poles between or near energized lines, special attention shall be exercised to keep the pole under control. The conductors shall be covered with insulating equipment or the pole itself shall be covered with pole guards. An Energized Work Permit shall be placed on the circuit. When setting or pulling poles, no uncovered pole shall pass through or by any uncovered primary conductor.

SUPPORTING OF POLES DURING EXCAVATION

01

The line truck may be left unattended only if the excavation process has not reached the pole location. Coordination shall be established with the customer to ensure that advanced notice will be given to the Company to ensure that qualified operators will be available when needed.

02

One lineman and one qualified operator shall be present at the job site when the excavation process is in the near vicinity of the pole. The line truck shall be running during this time and one of the two qualified operators shall remain at the controls until the excavation process has cleared the pole and the proper support has been installed.

127 COMPRESSED GAS

COMPRESSED GAS CYLINDERS

01

Cylinders shall be stored in designated areas and shall be secured in an upright position. Empty and full cylinders shall be stored separately. Oxygen cylinders shall be stored at least 20 feet from fuel gas cylinders or other combustible material, such as oil and grease, or be separated by an approved fire wall. Oil and grease shall not be permitted to come in contact with torches, valves, regulators, gauges or fitting of oxygen cylinders.

02

Cylinders shall not be dropped, struck, rolled in the horizontal position, or exposed to temperature extremes.

03

When opening the cylinder valve the discharge shall be turned away from the operator and opened slowly. This does not apply when the cylinder is required to be in an inverted position.

04

Caps provided for valve protection shall be in place on the cylinder hand-tight, except when regulators are attached. Tools shall not be inserted in the cap for the purpose of loosening or tightening the cap. Utmost caution shall be used when removing caps to assure that the valve assembly is not unscrewed along with the cap.

05

Valves shall be kept fully closed when not in use. If a special wrench is required, it shall be left in place on the valve stem for immediate use in case of emergency.

06

Compressed gas shall not be released from any cylinder without using a suitable regulator except to initially clean the valve orifice. The control valve shall be opened only enough to blow out any foreign particles before connecting the regulator or line to the cylinder.

07

Acetylene and hydrogen cylinders shall not be vented.

08

Sparks or flames shall be kept away from cylinders or hoses. A sign "Danger - No Smoking, Open Flames or Ignition Sources" shall be posted in rooms or at entrances to areas where fuel gas is stored or used.

09

Oxygen shall be used for purposes intended and not for such purposes as to blow out pipelines, dust clothing, start engines, operate pneumatic tools, operate paint-spraying devices, or to pressurize tanks.

10

Cylinders in use shall be secured to a special cart or secured to a stationary object such as a handrail or column. Cylinders shall be properly secured in the upright position while being transported, it shall have valve caps in place, unless secured in a special cart or truck. Transportation of all compressed gas cylinders shall comply with DOT regulations for hazardous materials shipping papers. Tanks shall not be taken into confined spaces for cutting, welding, etc. Regulators shall be removed, and valve caps put in place while cylinders are being transported on elevators.

11

Cylinders shall be legibly marked as to contents. Vehicles shall be properly marked (placarded) when transporting cylinders.

12

Acetylene shall not be used at a pressure in excess of 15 psi.

13

Oxygen and fuel gas systems shall be equipped with UL or FM approved flash arrestors (check valves, flashback arresters, and backflow valves), regulators, and pressure relief devices. The flash arrestors must, at a minimum, be installed at the regulator. Additionally, the flash arrester must be installed in the proper direction of flow to ensure proper operation.

HOUSEKEEPING

01

Workers shall be responsible for maintaining a clean and orderly workplace, whether on Company property, in vehicles, or at a job site.

02

Tools and material shall be placed so as not to create a tripping hazard. Aisles, passageways, and stairs shall be kept clear.

03

Scrap materials and debris shall be picked up and disposed of promptly.

04

Protruding nails shall be removed from boards, or the nails shall be flattened.

05

Vacuuming is the preferred method for dusty clean-up conditions. Note: Coal dust vacuuming can cause static electricity buildup.

06

Disposal of trash and debris shall be done in an approved environmentally safe manner.

128 REGULATORS

01

Before by-passing a regulator, on either single-phase or three-phase regulators, the regulator shall be in the NEUTRAL position and the control power shall be OFF.

If NEUTRAL light is present in a control box, check that it is "ON."

02

When working on regulators or tap-changing transformers, care shall be exercised to see that the power is not backfeed into the regulator, thus creating a primary voltage on the windings.

03

When working on regulators or load tap changer (LTC) internal parts, they shall be de-energized.

04

Capacitors within the high voltage compartment shall be shorted out before work is started.

129 TESTING PROCEDURES

01

Test areas shall be guarded:

a) Test areas shall be guarded by walls, fences, or barriers designed to keep unqualified personnel out of the test areas.
b) In field testing, or at a temporary test site where permanent fences and gates are not provided, one of the following means shall be used to prevent unauthorized workers from entering:
    i. The test area shall be guarded using distinctively colored safety tape that is supported approximately waist high and to which safety signs are attached.
    ii. The test area shall be guarded by a barrier or barricade that limits access to the test area to a degree equivalent, physically and visually, to the barricade specified in paragraph (1) above, or
    iii. The test area shall be guarded by one or more test observers stationed so that the entire area can be monitored.

02

Only approved equipment shall be used when phasing the circuit or testing for polarity.

03

When testing energized circuits or equipment, all temporary leads used in testing shall be adequately supported to prevent injury.

04

The lack of voltage on the low voltage side of a transformer shall not be considered as positive indication that the high voltage side is de-energized.

05

In testing for voltage, the worker shall use only an approved detector.

06

All temporary leads used in testing voltage from 600 volts to 15,000 volts shall be single conductor with 15,000-volt insulation. Everyone shall stand clear when making the test.

07

Safe grounding practices shall be followed in the test areas. Refer to SWP 108 Lockout Tagout (Grounding Procedures).

08

Crews shall phase across normal open switches at the end of any job requiring the addition or relocation of circuits or connection to a new source. Please refer to Phase Relationship Test.

130 UNDERGROUND DISTRIBUTION

Note: Prior to digging with any mechanized equipment, (Dial 811) Sunshine State One Call of Florida, to get any underground utilities marked. Hand digging is permissible in an emergency. If the call has already been made, make sure that you have the locate ticket number on site for reference in case of a problem. All after hour Emergency Locate Ticket requests must be made Online.

TECO's process for determining first the conduit is empty and then cutting a window in it are found at this link: 131 cutting a window to identify cable in conduit.pdf (tec.net)

01

When performing a cut while operating hand tools with moving parts such as oscillating, circular, or reciprocating motion, the user shall ensure complete 360 degrees of visibility around the object being cut to ensure there are no hazards within the range of the moving parts. If 360 degrees of visibility is not possible, a power tool will be strictly prohibited, and the cut must be made by hand.

02

Workers shall check for hazardous conditions before proceeding with work.

03

Only workers or authorized contractors shall be allowed to open or close a pad-mounted enclosure.

Before opening any enclosure, all unauthorized persons shall be required to leave the immediate work area and remain in the clear. Where the public maybe endangered, the work area shall be roped off, barricaded, or otherwise marked to prevent entry.

04

Before opening any enclosure such as a live or dead-front transformer, or switching cubicle which contains exposed energized equipment, workers shall adhere to the following precautions:

a) Rubber gloves, FR clothing (Minimum HRC2 pants, shirt) and approved safety eyewear with side shields and hard hat shall be worn.
b) Weeds, grass, and other vegetation that obstructs the work shall be cleared from the area.
c) All loose objects which could cause a worker to stumble and fall into the energized equipment shall be removed from the area.

05

Door hinges of each enclosure shall be checked before it is opened. Both hands shall be used to keep positive control of the lid of the enclosure. Doors shall be blocked so that they cannot close accidentally.

06

Energized enclosures shall not be left unattended when unlocked or open.

07

After a transformer has been disconnected from the power source, a check shall be made for backfeed.

08

Cables or equipment shall be considered energized unless they have been de-energized, tested for voltage, and grounded in accordance with approved procedures. Primary cables which have been de-energized shall be grounded before working on them.

09

Before de-energizing and grounding primary cables and equipment, permission shall be obtained from the switching supervisor in accordance with switching and tagging procedures.

10

Insulated tools shall be used to open or close energized primary switches and other primary load-breaking devices.

11

An interrupting device shall be used to open a primary load.

12

A bayonet fuse shall be operated by the worker at a safe position from the side of the transformer using a hot stick.

13

Energized elbows shall be installed and removed using a hot stick and or puller based on the configuration of the load break elbow.

14

Consideration shall be given around eliminating picking up load in a live-front situation when possible.

15

A primary or secondary system neutral shall not be opened on any energized circuit.

16

The case ground shall not be removed from an energized transformer. When installing or removing equipment, the first conductor to be connected and the last conductor to be removed shall be the case ground.

17

When work is to be performed on de-energized equipment where it is impractical to ground on each side of the work, the cable or equipment shall be grounded in at least one location.

18

When it is necessary to rearrange or alter neutral conductors or shielding tape on energized circuits, a continuous metallic circuit shall be maintained with jumpers or tape. Rubber gloves shall be worn unless hot sticks are used.

19

Mechanical jumpers shall not be used on any underground cable terminations or on the associated hardware at the connection point of the switch.

20

Due to loop characteristics of underground distribution circuits, both the top and bottom portion of primary switches shall be considered energized, until tested and grounded.

21

When working on any energized cable or equipment, suitable barriers, and protective covering to prevent accidental contact with other conductors or grounds shall be provided and used. When working in a pad mounted transformer, the secondary bushing shall be covered using secondary spade covers.

22

When work is being performed on energized conductors within service pedestals or hand holes, one conductor shall be uncovered at a time except when testing for voltage.

23

Before energizing a service, tests shall be made for grounds and backfeed with a voltage tester.

24

The secondary side of the current transformer shall not be opened while the primary side is energized.

25

Rubber gloves shall be worn, and extreme care shall be exercised when digging or probing in the proximity of energized cable.

26

Before cutting a primary cable, which has been previously energized, the cable shall be isolated, tested, grounded, and tagged.

27

A check shall be made to assure that all grounds have been removed before equipment is put into service.

28

If duct rods are used, they shall be installed in the direction presenting the least hazard to workers. A worker shall be stationed at the far end of the duct line being rodded to ensure that the required minimum approach distances are maintained.

29

When multiple cables are present in a work area, cables, other than the one being worked on, shall be protected from damage. The cable to be worked shall be identified by electrical means:

a) Unless it's identified by cable tags.
b) By reason of distinctive appearance (e.g., difference in cable jackets).
c) or by other readily apparent means of identification (e.g., location).

30

Energized cables shall be inspected for defects prior to them being moved.

31

Where a cable in a manhole has abnormalities, the defective cable shall be de-energized before any worker may work in the manhole.

Note: Abnormalities such as oil or compound leaking from cable or joints, broken cable sheaths or joint sleeves, hot localized surface temperatures of cables or joints, or joints that are swollen beyond normal tolerance are presumed to lead to or be an indication of an impending fault.

32

When work is performed on buried cable or on cable in manholes, metallic sheath continuity shall be maintained, or the cable sheath shall be treated as energized.

33

Before completing the connection of an energized single-phase URD loop, phasing shall be performed to determine that there is correct phasing (not opposite phases) present when completing the loop. Reference: General Rules and Specifications Operating Procedure "OP3-7-032488" in the UG spec. book: GrsUG-03-OperatingProc.pdf (tec.net)

131 GENERAL MAINTENANCE

AIR CONDITIONING MAINTENANCE

01

All workers shall comply with the requirements of the departmental Lockout/Tagout Procedures when working with energized equipment and grounds. Reference Section 108 (Lockout/Tagout) and the Department LOTO program.

02

Approved safety glasses with side shields shall be worn at all times while working with refrigerant, compressed gas, or while operating or servicing HVAC equipment. Workers shall stand clear when starting or energizing HVAC equipment.

03

Only qualified, authorized, or certified personnel shall work with refrigerants. The manufacturers' recommendations shall be followed to avoid over-charging or over-pressurizing systems. A regulating valve shall always be used when pressurizing a system with nitrogen for leak checking. The regulator shall have gauges indicating pressure in the drum, and the pressure being applied to the system. Never pressurize system with nitrogen above manufacturer's specs for maximum pressure.

04

Proper ventilation shall be provided in areas where high concentrations of refrigerant vapors/gases may accumulate (chiller rooms, storage areas, etc.) and when using an open flame or soldering around refrigerants. Care shall be taken to stay out of the smoke or fume stream while soldering. Open flames and hot points shall not be used without approval in areas requiring a Hot Work Permit or in areas restricting flammable combustible materials. Pressure and temperature fuse plugs shall not be re-soldered and shall be replaced only with the type specified by the manufacturer.

05

Only approved solvents shall be used to clean refrigeration equipment. Any spilled or leaked fluid shall be cleaned up immediately following approved Spill Clean-Up Procedures. Avoid skin contact with refrigerants and follow SDS directions to cleanse the skin in the event of accidental exposure.

06

Cylinders must be stored and transported in dry environments and never tamper with cylinder safety relief devices. Regularly inspect the valves and condition of the refrigerant cylinders to ensure that nothing is obstructing the valve, and that no deterioration or damage to the cylinder has occurred. Never refill a disposable (DOT 39) type cylinder or fill an approved refrigerant cylinder over 80% capacity. Auxiliary breathing apparatus shall be readily accessible in areas where large concentrations of refrigerant are present, either in stored amounts or being used in large units.

07

All used refrigerant containers must be properly labeled. Unlabeled containers must be removed from service and either correctly labeled or disposed of properly. Only approved recovery cylinders shall be filled if the present date is not more than five years passed the test date that is stamped on the shoulder of the cylinder.

08

Handle cylinders with care, do not bump or drop, or heat a cylinder with a torch or open flame. Never heat any part of a refrigeration system containing refrigerant. Never mix different refrigerants or pressurize a refrigeration system with oxygen.

09

Foundations and supports for condensing units or compressor units shall be of noncombustible construction and capable of supporting loads imposed by such units. Refrigerant piping shall be properly isolated and supported to prevent damage from vibration, stress, or corrosion. All moving equipment and machinery shall be guarded as per manufacturer's design and/or specifications. All panel covers and machine guards shall be replaced completely as per original installation. Safe access and clear space for inspection and servicing of HVAC equipment shall be provided when designing and installing equipment. Adequate illumination shall be provided for inspection and servicing of mechanical equipment.

ELECTRICAL MAINTENANCE

01

All workers shall comply with the requirements of the departmental Lockout/ Tagout Procedures when working with electrical equipment and grounds. Reference section 108 (Lockout/Tagout) and the Department LOTO program.

02

Electrical equipment and wiring shall be installed in accordance with the National Electrical Code and the manufacturer's design specifications.

03

Approved safety glasses with side shields, the appropriate gloves when required, and other PPE shall be worn at all times when performing electrical maintenance. Only competent and qualified personnel may work near exposed energized lines, circuits, or parts of equipment. Only competent and qualified personnel may work in areas containing unguarded, un-insulated energized lines or parts of equipment operating at 50 volts or more. Electric lines, circuits, and equipment shall be considered and treated as energized unless they have been tested for voltage and grounded. Portable electrical equipment shall be inspected before each use and tested on a regular basis.

When working on or near energized installations the following personal protective equipment shall be used: safety glasses, approved gloves, Approved FR Clothing, a face shield, and head protection. FR clothing shall be worn properly: Sleeve cuffs shall be fully rolled down and secured, all buttons below

the collar shall be secured, and shirt tails shall be tucked into pants when working around rotating, motorized, or energized equipment.

TECO'S APPROVED FR CLOTHING CONSISTS OF:

a) FR shirt meeting a minimum Arc rating of HRC: 2 with long sleeves.
b) FR pants meeting a minimum Arc rating of HRC: 2.
c) Jackets or coats that are FR meeting a minimum Arc rating of HRC: 2.
d) FR or 100% cotton or other natural fiber undergarments.

04

Equipment rooms shall not be used for material storage. Good housekeeping shall be maintained in these areas. A three-foot area shall be kept clear of obstruction in front of electrical distribution panels.

05

A disconnect switch shall be installed within six feet of all fixed electric space heaters and shall be provided on all electric motors of two horsepower and above. Motors and motor-driven machinery shall have a manually operated disconnect switch located within sight of the machinery that will isolate the motor from its source of electric supply. Electrical equipment will be de-energized, tested, and grounded before work is to begin.

06

Caution shall be exercised, and Minimum Approach Distances shall be maintained whenever work is performed on switchboards, equipment, or busses that are energized on the line side of the breaker. Whenever possible workers shall use rubber blankets or other equipment to insulate them from the hazard.

Note: Minimum Approach Distance for 0.05 to 1.0 kilovolts phase to phase is to avoid contact.

07

When work is interrupted, disconnect switches and circuits that have been previously locked out and grounded shall be tested to ensure they are still de-energized before work may resume.

08

Rotors, armatures, other rotating parts, or hazardous energy sources shall be blocked and secured before work may begin in or around their area.

09

Fused disconnects shall be placed in the OPEN or OFF position before removing fuses, and an insulated fuse puller shall be used to remove all fuses.

INSULATION

01

All personnel shall comply with safety and health procedures as defined in the Company's Asbestos Awareness Program. Proper personal protective equipment shall be worn.

02

Unless it has been determined through sample testing or monitoring that the material is not asbestos, all jobs requiring the handling or removal of insulation shall be treated as "presumed asbestos" jobs, and all applicable procedures and requirements concerning working with asbestos shall be followed.

SHOP WORK

01

Approved safety glasses with side shields shall be worn at all times when work is being performed in the shop area. Additional eye protection is required in designated areas and for specific work. Hearing protection shall be worn in designated shop areas while equipment or machinery is being used, and when working around specific tools and equipment requiring hearing protection. Respiratory protection shall be worn when required.

02

All shop equipment and machinery shall only be operated according to manufacturer's safe operating procedures. Only qualified and competent personnel shall operate or adjust shop equipment and machinery. Shop equipment and machinery shall be inspected and serviced regularly to ensure that it is working properly and can be operated safely.

03

Workers shall comply with departmental lockout/tagout procedures whenever servicing or inspecting shop equipment, reference section 108. Workers shall also comply with Barricades, Barriers and Warning Signs safety when performing work that extends outside the normal shop work area, reference section 103.

04

Materials shall be properly placed or stored so as not to create a hazard to workers working in or passing through the shop area. All machine safety guards shall be kept in place except when maintenance or inspection requires removal. Shop equipment or machinery shall only be operated with safety guards properly installed. Machines shall not be left unattended while running.

05

Push sticks or blocks shall be used whenever possible when operating shop equipment or machinery. Hands and clothing shall be kept clear of moving parts. Clamps should be used to hold the work securely on the work surface. Gum, resin, and loose material shall be removed immediately from saw blades and drill bits. Only sharp blades and drill bits, and well-set saws that are properly tensioned, shall be used.

WIRE WINDING OPERATIONS

01

Only qualified and competent personnel shall operate the Reel-O-Matic machine. Work gloves and safety glasses shall be worn at all times during wire winding operations. The operator of the wire winding equipment shall be positioned so as to avoid pinch-points and to be able to observe both pay-out and take-up reels and the wire winding machine. Hands shall be kept well back or behind the guiding bar while tensioning and positioning the wire on the take-up reel.

02

The wire pay-out reel shall be properly balanced and securely fastened on the pay-out cart. The pay-out cart shall be secured to the floor with the brakes firmly set prior to initiating wire winding operations. Only permanent solid weight supports will be used to support pay-out reels during wire winding operations.

03

Workers shall exercise caution when cutting wire. Both ends of the wire being cut shall be secured or held firmly while cutting. The end of the wire shall be securely fastened on the inside of the coil so that no sharp end protrudes.

ANTENNAS & RADIO FREQUENCY TRANSMITTERS

01

Microwave transmitters shall be de-energized before internal inspections are conducted. Do not inspect Heliax or other waveguide devices without de-energizing them.

02

Maintenance shall not be performed on a radio in a vehicle that is in an area where explosives are being used or on a radio in a vehicle that is in an energized primary contact area. If practical move the vehicle from the work area to a safer location. An antenna shall not be installed in such a manner as to radiate RF energy into someone's eyes.

FIBER OPTICS

01

Only qualified and competent personnel shall cleave and splice fiber cable.

02

Bare fiber shall be handled with extreme caution and disposed of properly to reduce injury from sharp ends.

03

Only approved safety glasses with side shields shall be worn to prevent loose fiber from entering the eyes. Workers shall avoid direct exposure to invisible laser radiation, which may emanate from un-terminated fiber connections. Workers shall not look into open ends of open fibers, un-terminated fibers or into parts of fiber equipment.

04

Workers shall take necessary precautions when working with flammable or combustible cleaning agents used in fiber optic splice preparation.

PART WASHERS

01

Only qualified and competent personnel shall operate parts washers. All parts washers shall be used in accordance with the manufacturer's operating procedures and use only approved cleaning

solutions in any parts washer. Do not operate a parts washer if it is damaged, malfunctioning, partially disassembled, or has broken parts, including a damaged cord or plug.

02

Approved safety glasses with sides shields are required when operating parts washers at all times. If possibility of splatter exists, an approved face shield shall be utilized. Chemical resistant gloves are needed for loading and unloading material from cabinet/parts washers.

03

Do not reach inside, climb, or stand on a cabinet type washer with the turntable moving, while it is in operation.

04

Unplug or disconnect the parts washer from the power supply before attempting any maintenance.

05

Keep the floor clean and dry around parts washers to reduce the risk of slipping or falling.

06

Do not introduce toxic materials, solvents, or combustible materials with a flash point below 300 degrees into an automatic cabinet's parts washer utilizing heated water or solvent for cleaning. Flash points of products may be found by referring to the SDS.

07

For cabinet type washers, allow heated parts time to cool before handling.

132 HYDRAULICS

01

Workers shall know and comply with the Lockout/Tagout Procedures as defined in SWP 108 and departmental procedures.

02

Consult the manufacturer's maintenance procedures for specific instructions and warnings before attempting any hydraulic repairs.

03

Always neutralize (relieve) the pressure in all hydraulic systems before beginning disassembly.

04

Do not loosen fittings or lines when hydraulic systems are in operation or under pressure.

05

Air pressure shall not be used to remove or cycle the cylinder rod assembly. Only a controlled source of hydraulic pressure shall be used for hard-to-move rod assemblies.

06

Always use extreme care when removing plugs or any restriction from a hydraulic system suspected to have entrapped air that may be pressurized.

07

Never check for hydraulic leaks with your hand.

08

Pressurized hydraulic systems shall be vented slowly and completely before opening the system. The manufacturer's maintenance and safety procedures will be followed.

09

Secure or block in place any component that may fall, close, or present additional hazard upon removal of any hydraulic component.

HYDRAULIC VEHICLE LIFTS

01

a) Only qualified and authorized persons (proper lift training received) shall operate lifts. When directing vehicles over the lifts, workers shall maintain a safe clearance from the vehicle, and be cautious of tripping hazards.
b) Hydraulic lift controls shall be manually operated and not blocked in the open or shut position.
c) Before raising a vehicle, loose equipment on the vehicle shall be secured and doors closed. Overhead clearance shall be checked before raising any piece of equipment. While lifting a vehicle, anyone in the surrounding bays shall be notified before lifting a vehicle. Only the person operating the lift shall be in the bay while the vehicle is being lifted.

d) Mechanical positive locking devices shall be used, in all lifts equipped with such devices before any work is performed under vehicles that are on lifts.
e) Loads shall be squarely engaged, and neither the lift nor adapter shall be overloaded.
f) Jacks shall be securely positioned on a firm surface.
g) No work shall be done under a vehicle supported only by jacks. A vehicle on jacks shall be supported by adjustable stands in the locked position or otherwise cribbed or blocked before work may begin.
h) Each jack shall have its load rating permanently and legibly marked. No jack shall be overloaded.
i) Every jack shall be inspected before use. Jacks shall be tested and inspected during monthly shop inspections. Jacks that are damaged or unsatisfactory shall be tagged out-of-service and repaired before returning to use.
j) When jacking a vehicle up or down, wheels shall be locked.
k) Workers shall fully engage the parking brake and use wheel chocks when working or troubleshooting under a vehicle (unless setting the rack to lift a vehicle). Wheel chocks must be placed on the front and rear of the same tire.

133 MATERIAL HANDLING & STORAGE

01

Workers shall be familiar with the Safety Data Sheets (SDS) for all stored and processed materials and comply with all special handling instructions. The contents of all stored or staged materials shall be clearly marked and easily visible on the outside of the package. Labeling shall include the flammability/combustibility, corrosiveness, and oxidation properties of the contents as well as any special handling and personal protective equipment and safety precautions required by the manufacturer.

02

Specific hand protection as required by the SDS shall be worn when handling chemicals, or special materials. Approved work gloves shall be used when handling wire, wire rope, glass, porcelain, and other materials with sharp or rough edges.

03

Approved safety shoes shall be worn at all times while working in storerooms or around outside storage racks and bins.

Return to Top

04

Workers shall use proper lifting techniques when handling all materials (reference OSHA lifting techniques).

05

Workers shall use approved warehouse ladders, stairs, personnel lifts, or reach trucks/order pickers to retrieve materials from overhead storage. Workers shall not climb on shelves, bins, or any unauthorized equipment to reach such materials.

06

Racks, shelves, and other devices on which material is stored shall be of substantial construction capable of supporting the weight and size of the material. Racks shall be secured to the floor or otherwise stabilized to prevent tipping or shifting.

07

Full drums, barrels, poles, pipes, conduit, and reels shall be handled with approved mechanical equipment; and/or, be stored on end to prevent shifting or shall be otherwise blocked to prevent rolling.

08

Sharp ends or edges of wire or banding material, nails, and staples shall be removed, secured, or blunted, and disposed of properly when crating or uncrating materials or equipment.

09

Workers shall exercise care when cutting wire. Both ends of the wire being cut shall be secured or held firmly while cutting. The end of the wire shall be securely fastened on the inside of the coil so that no sharp ends protrude.

10

Items shall be properly handled or passed and shall not be thrown when loading or unloading materials or equipment.

11

Floats and hand-trucks shall be pushed, not pulled on level surfaces. Extra care shall be exercised when maneuvering around corners or doorways, and when ascending or descending slopes. Workers shall not stand or ride on floats and hand-trucks.

12

When utilizing mechanical equipment for transport, material shall be properly stacked so as not to obstruct the vision of the operator. A spotter shall be used when line of sight is restricted by the load. Loads shall be evenly distributed to prevent tipping or damaging material.

13

Materials stored in tiers shall be stacked, blocked, interlocked, limited in height so that they are stable and secured against sliding or collapse. Prudent efforts shall be made to store heavier material on lower shelves or bins.

14

Where mechanical handling equipment is used, sufficient safe clearances shall be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways shall be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways shall be appropriately marked.

15

A minimum clearance of 18 inches shall be maintained between stored material and overhead lights, sprinkler heads, and heating/cooling ducts, and fire door openings.

16

Flammable or combustible materials shall not be stored near sources of extreme heat, sparks, or flame.

17

Materials or equipment shall not be stored under energized busses, lines or near equipment. Stored materials shall also not block access to electrical panels, fire control panels or exits.

18

Stored materials shall be kept within the confines of the storage bin or area in which they are placed. Material shall be located properly out of aisles, and passageways.

19

All clearances, including overhead, shall be checked before raising, lowering, or pulling a load.

Return to Top

134 SALVAGE OPERATIONS

01

Approved PPE shall be worn.

02

All salvage equipment and machinery shall be routinely inspected and tested, and properly maintained to ensure they are operating safely and according to manufacturers' specifications.

03

Only qualified and competent personnel shall operate test equipment. All test procedures shall be properly followed, and all records properly maintained.

04

Extra caution shall be exercised to ensure the proper operation of interlock mechanisms and other safety devices before energizing testing equipment.

05

Lightning arrestors and bulbs shall be properly stored and handled to avoid breakage.

06

Only qualified and competent workers shall operate the powered roller conveyor, overhead hoists, and transformer testing and repair equipment.

07

Transformer Shop Safe Operating Procedures shall be followed during all operations of transformer repair.

08

Workers shall review and comply with all Safety Data Sheet requirements for safe use of chemicals and products utilized in transformer servicing, testing, and repair.

09

All transformer repair equipment and machinery shall be regularly inspected, maintained, and operated in accordance with manufacturers' specifications. Any tool, equipment or machinery found not to be operating properly shall be immediately taken out-of-service, and tagged with a Repair tag until maintenance or repairs can be made.

10

A signaling device shall alert all workers working on or around the conveyor before it begins operation. Workers shall communicate with each other if an interruption in conveyor operation is required and not readily observable by other workers working on the line.

11

All machine guards, barriers, and other warning devices shall be maintained in place at all times during conveyor operation.

12

The conveyor shall not be restarted until the worker activating the emergency stop cable has cleared the obstruction or hazard. An inspection of the conveyor shall be made before resuming conveyor operation.

13

Workers shall refrain from walking or stepping on rollers, wheels, chains, pallets, or other items on the conveyor surface. Tread plates shall be used to crossover the conveyor.

14

Workers shall not ride the conveyor at any time.

15

Whenever possible, workers shall stand on the ground or work platforms next to the conveyor to service transformers. Workers shall not stand on pallets or tread plates to service transformers unless the entire conveyor is switched OFF and tagged out.

16

Transformers shall be placed on the slave pallets so as to avoid rubbing or sliding on the conveyor system walls. Sufficient space shall be maintained between transformers on the same pallet to allow safe access to equipment and accessories.

17

Unstable transformers shall not be loaded onto the conveyor unless otherwise blocked and secured to the pallet.

18

Safety interlocks in the transformer electrical testing area shall be properly utilized. Safety interlocks shall not be bypassed or otherwise compromised.

19

Approved barricades and barriers shall be in place before electrical testing is performed.

20

All oil spills shall be cleaned up immediately and the oil residue properly tested and disposed of according to departmental procedures.

21

Proper gloves shall be worn when performing transformer oil servicing, sampling, and testing.

22

Workers shall exercise caution when working with transformer oil and avoid contact with eyes, skin, and clothing. Hands shall be washed after work is completed and before eating, drinking, or using tobacco products.

23

The safe working limit of the hoist shall be clearly indicated on the hoist and shall not be exceeded.

FIELD REPAIRS

01

All repairs made on energized transformers in the field shall be coordinated with Electric Delivery Operations.

02

Workers shall comply with all requirements of the Section 108, Grounding Procedures in Electric Delivery Operations.

03

Application of all grounds shall be applied by authorized Electric Delivery personnel whenever possible.

04

Workers shall comply with all requirements of Section 124, Working on or Near Exposed Energized Lines or Equipment in Electric Delivery Operations.

135 VEHICLE MAINTENANCE

01

Workers shall know and comply with the Lockout/Tagout Procedures in SWP108 and as defined in Fleet Procedures.

02

No worker shall work beneath a vehicle or other piece of equipment held by a chain hoist. Such equipment shall be supported by a stand (locked if adjustable) or otherwise blocked or cribbed. Only TECO Garage Mechanics shall work in a TECO garage Facility, unless approved by a TECO Garage Supervisor. Only qualified workers shall operate a vehicle lift. Only TECO personnel with the proper PPE shall be allowed in the shop passed the yellow walkway lines, unless accompanied by a garage mechanic or authorized by the Garage Supervisor. Walkways are clearly marked on the floor of the garages with yellow strips and are designated for non-PPE walkways only. The proper support should be a factory support, supplied by the manufacture. The support should hold the object up properly and be in good condition. No modifications shall be done to a factory support.

03

Before working beneath raised hoods, tilted cabs or any equipment that has a pinch-point (in, on or between), mechanical supports shall be checked to assure proper support.

04

Oil drippings shall be cleaned promptly and shall not be allowed to accumulate on floors or work surfaces. Tools, parts, hoses, etc., shall not be left in walkways where they can cause a tripping hazard. Only approved cleaning fluids shall be used on floors, parts, etc.

05

Exhaust fumes shall be vented to the outside if it is necessary to run engines inside a closed garage.

06

Portable floor fans shall be equipped with a grill or mesh having openings no larger than one-half inch.

07

Hands shall be kept clear of the high-pressure grease gun nozzle when the handle is pulled.

08

Use approved brake wash methods and appropriate personal protective equipment to minimize airborne dust. Observe manufacturer's safety precautions while using brake pressure bleeders. Exercise proper precautions when handling brake fluid.

09

When using a stepladder for access to a vehicle or vehicle mounted equipment, the stepladder shall be tied or chained off if possible.

TIRES

01

Comply with all manufacturer's specifications and industry instructional materials when changing or servicing tires. Only use approved tire tools for dismounting and mounting tires.

02

If there is known or suspected damage to the wheel, or if the tire has been run at below 80% of its recommended pressure, completely deflate the tire by removing the valve core before removing the wheel/tire from the axle. A tire shall be completely deflated before dismounting from the rim. Bent, broken, or damaged tire rims shall not be used and shall be disposed of properly.

03

All tires mounted on two-piece bolted rims, such as forklift tires, shall be fully deflated before removing the tire from the hub. Tires mounted on two-piece bolted rims shall not be inflated to more than 50% of the rated psi prior to mounting on a hub.

04

Do not weld, heat, or braze any rim parts for any reason.

05

Remove rust, dirt, or corrosion from wheel rim parts. Repaint to extend the life of the part.

06

Approved tire lubricant shall be used to seat the beads of a tubeless tire. Never inflate beyond 5 psi before placing the tire/rim in an approved restraining device (cage). Do not use starting fluid, ether, gasoline, or other flammable material to lubricate, seal, or seat the beads of a tubeless tire. Extreme caution shall be used to avoid sparks or chemical contact when dismounting a tire that has been inflated with a tire chemical inflator.

07

Use a clip-on air chuck with gauge while inside the restraining device (cage). Do not rest or lean any part of the body against the restraining device during inflation. Inspect proper seating of all parts before removing from restraining device.

08

Never inflate beyond inflation pressure specified on the rim or tire.

09

Do not use externally installed plugs to permanently repair any over the road vehicles. Internal plug patches shall be used as a permanent repair. "Fix-A-Flat" or other tire chemical inflators shall not be used to repair or re-inflate flat tires.

ROAD CALLS

Only a high visibility traffic vest in good condition shall be worn. Service vehicles will have their high visibility, rotating, flashing, oscillating and/or strobe lights operating. Cones shall be placed in advance of on-coming traffic.

01

The vehicle to be serviced as well as the service truck shall be moved to the safest location possible before beginning work.

02

Use extreme caution when the vehicle to be serviced is in or near energized lines or equipment.

03

To maintain communications the radio shall be switched to the external speaker while work outside the service vehicle is in progress.

04

Only FDOT approved containers shall be used for gasoline, diesel, oil etc.

05

Tools, parts, and other supplies carried in the service vehicle bed shall be properly secured.

06

Only approved towing / pulling equipment shall be used in accordance with the manufacturer's recommendations.

136 VEHICLE OPERATIONS & VEHICLE RECOVERY

01

Workers operating motor vehicles shall be properly licensed. Workers shall operate vehicles in accordance with Company rules and principles of defensive driving.

02

Only authorized persons shall be permitted to operate Company vehicles or equipment.

03

Operators shall familiarize themselves with and shall obey all state and local traffic laws and ordinances.

04

Unauthorized persons shall not be permitted to ride in Company vehicles unless permission is granted by the supervisor.

05

Where seat belts and shoulder harnesses are provided, they shall be worn.

06

Workers shall ride only in the passenger compartment provided in trucks for their transportation or seated within the body of the truck.

07

Internal combustion engines shall not be operated within closed garages or other buildings where adequate ventilation is not provided.

08

Workers shall not operate any vehicle or equipment in an unsafe condition. Vehicles or equipment shall be tagged, removed from operation, and reported promptly to Fleet personnel.

09

Where visibility is obscured and sufficient personnel are available, a flag person shall be placed at the rear of the vehicle being backed. The flag person shall be positioned in such a manner as to see the area to the rear of the vehicle and be seen by the operator. The operator shall obey signals given by the flag person. When backing a vehicle where obstructions are present, a signal person shall guide the vehicle driver. The signaler shall be positioned where the driver can see their signals and the signaler can see any obstructions.

10

Vehicle operator is responsible for the safe loading and securing of cargo and equipment.

11

Any unusual or oversized loads shall be secured in compliance with state and local laws or ordinances.

12

When loading vehicles, care shall be taken to balance or distribute the load as equally as practical.

13

When loading or unloading, vehicles shall be placed in PARK position, parking brake shall be set and/or the wheels chocked.

14

Vehicles shall not be parked closer than fifteen feet to any railroad track. Notify CSX for clearance.

15

Unless otherwise posted, the speed limit on Company property is ten miles per hour.

16

Operators shall walk around the vehicle (Circle-of-Safety) before moving it to make sure everything is clear.

17

Operators shall consider overhead clearances.

18

Doors shall be opened carefully to avoid striking people, objects, or other vehicles. Caution shall be exercised when opening doors on the street side of a vehicle.

19

Workers shall not board or leave a moving vehicle.

20

Loads extending four feet or more beyond the body of the vehicle shall have an orange warning flag attached.

21

Workers shall comply with all applicable DOT (Department of Transportation) regulations when transporting hazardous materials.

22

Unattended vehicles should not be left running unless the engine is needed to power auxiliary equipment or part of work process.

23

Registered GVW (Gross Vehicle Weight) shall not be exceeded.

24

Operators should park or plan routes to avoid backing when practical.

25

TEC workers are not permitted to use a cell phone while driving a motor vehicle (personal or company-owned) on company business or company time without the use of a hands-free device. They are not permitted to use a cell phone to read or respond to e-mails or text messages, to surf the Internet, or for any other similar use while driving a motor vehicle (personal or company-owned) on company business or company time.

26

Only authorized persons, with vehicle recovery certification training, shall be permitted to recover vehicles and/or equipment. The primary method of recovering/freeing stuck vehicles and/or equipment shall be with a vehicle mounted recovery winch.

27

Only recovery ropes specifically designed for vehicle recovery are the only ropes authorized for use to recover Tampa Electric vehicles and/or equipment. A trained personal must be on site while any recovery rope is being used. Only trained personnel shall attempt to recover stuck vehicles or equipment.

28

Operator(s) under supervision shall assess the situation and attempt to recover/free the stuck vehicle and/or equipment one time. Garage personnel should be contacted if the vehicle cannot be freed after one attempt.

TRAILER/TOWING EQUIPMENT

01

No one shall be permitted to ride on a trailer.

02

Vehicle operator must ensure that any trailer and towing equipment being used is in safe working condition including the emergency break away switch, lights, and tires. Any trailer/equipment found to be in unsafe working condition shall be tagged out and reported to Fleet department for repairs.

03

Vehicle operator is responsible when attaching trailers/equipment to ensure the pintle hook is in good condition. The safety latch shall be closed, locked and a safety pin installed.

04

Vehicle operator is responsible for inspecting the safety chains and ensuring they are attached to the trailer properly.

05

Vehicle operator is responsible for ensuring safety chains are properly secured to the tow vehicle. (Chains should cross with enough slack to allow for turning.

06

All trucks hauling poles or pole trailers shall be driven with extreme caution.

07

Best efforts shall be made to give advanced warning to all traffic before attempting to turn with a load that projects over five feet beyond the end of the truck or trailer.

CARGO /LOAD SECUREMENT

Reference DOT Securement Rules.

01

All loads and cargo shall be properly secured. Objects inside the vehicle shall be secured to prevent them from becoming a distraction while the vehicle is in motion.

02

Equipment and materials carried on or in trailers shall be properly secured and the placement of the load evenly distributed.

03

Cargo likely to roll must be restrained by chocks, wedges, dunnage, or other equivalent means to prevent rolling. If chocks are used, they shall be secured to decking.

04

Vehicle operator is responsible for the inspection of securement devices. Tie downs found to be defective shall be discarded and not used.

05

The vehicle structure and anchor points must be inspected before each use and cannot be damaged, weakened, cut, or cracked.

06

Tie downs shall be attached and secured in a manner that prevents it from loosening, unfastening, opening, or releasing while the vehicle is in transit.

07

Regardless of cargo type, tie downs must be located inboard of rub rails whenever practical.

08

Information on the manufacturing tag of all tie downs shall be followed.

09

The lowest working load limit (WLL) of any of the components of securement shall be used when determining proper securement.

10

The sum of the working load limit (WLL) from all tie downs must equal 50% of the weight of the cargo.

11

Tie downs must be secured in a manner that restrains the load against movement forward, rearward, vertically, and laterally.

12

The headboard of the trailer may be used to assist against forward movement of the load provided that proper weight distribution is maintained.

13

Whenever transporting, all attempts should be made to avoid metal on metal through the use of wood pallets or chocking.

14

A minimum of four tie downs are required.

15

In addition to the four minimum tie downs a separate tie down is required for each attachment.

16

Tiedowns must use securement mounting points on the equipment that was designed for securement purposes when applicable not to the rub rail.

17

Road plates and other loads must be secured using individual tie downs. Parking equipment on top of material/equipment does not constitute proper load securement.

137 TRENCHING EXCAVATION & SHORING

A structure such as a metal hydraulic, mechanical, or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins. Reference Excavation and Trenching Program.

01

A competent person shall conduct daily visual inspections for signs of possible cave-ins, failure of protective systems, or other hazardous conditions. Immediate corrective measures to eliminate or control hazards and conditions shall be taken.

02

A competent person shall be available to conduct inspections prior to start of work, after every rainstorm and as needed throughout the shift. Work shall not continue until after the inspections have been completed.

03

While an excavation is open, underground installations shall be protected, supported, or removed as necessary to safeguard employees.

04

Prior to digging with any mechanized equipment, (Dial 811) Sunshine State One Call of Florida, to get any underground utilities marked. Hand digging is permissible in an emergency situation. If the call has already been made, make sure that you have the locate ticket number on site for reference in case of a problem. All after hour Emergency Locate Ticket requests must be made Online.

05

A competent person shall design the excavating or trenching work and inspect the work throughout each day to ensure the stability of the trench, the safety of the crew, and compliance with departmental procedures.

06

Employees shall comply with all appropriate safe work practices for Section 102, Barricades, Barriers, and Warning Signs; Section 144, Public Safety, and Section 153, Work Area Protection/Maintenance of Traffic (MOT).

07

Employees required to work in trenches or excavations over 54 inches deep shall be protected by a shoring system, or by laying back the earth a minimum of two feet to a stable slope.

08

If examination of the ground indicates that hazardous earth movement may be expected, trenches or excavations less than 54 inches in depth shall also be properly shored or sloped.

09

Other hazards in the immediate vicinity, such as trees, boulders, building foundations, slides, and banks, shall be considered and appropriate steps taken to secure them from collapse.

10

In planning excavation operations, additional factors such as vibration from nearby traffic or heavy machinery, water seepage, and other such factors shall be considered, and necessary precautions taken. Water shall not be allowed to accumulate in trenches or excavations.

11

Open trenches or excavations in which employees are working for a period of time shall be inspected daily to determine if weather conditions or other factors have increased the hazards.

12

Excavated materials shall be stored at least two feet from the edge of all trenches and excavations in which employees are working. When conditions make this impractical, earth shall be removed or otherwise retained.

13

Tools and materials shall not be left near the edge of excavations or trenches. Tools and materials shall not be thrown into or out of trenches and excavations.

14

Ramps or ladders shall be provided in trenches or excavations over four feet in depth. Ladders shall be located not more than 25 feet apart. Ladder side rails shall extend at least three feet above any horizontal landing in the trench or excavation and shall be secured top and bottom when practical.

15

A qualified observer shall assist equipment operators in excavation or trenching if needed. Extreme caution shall be taken to prevent cave-ins due to the superimposed weight of heavy equipment near the edge of trenches or excavations.

16

Employees shall not jump over trenches or excavations. Where needed, crossover walkways or bridges of approved design shall be provided.

17

In the event a gas line is cut, employees shall: (1) Shut down equipment and clear the area; (2) Report the incident; (3) Resume work only when assured by an authorized representative of the gas company that the hazardous condition has been corrected.

18

Employees exposed to vehicular traffic shall wear high-visibility warning vests.

APPENDIX A (Definitions)

A	Aerial Lift Device	Any piece of equipment utilizing a bucket, basket, or platform to place the worker(s) at an elevated worksite.
	Affected Worker	A worker whose job requires him/her to operate or use a machine or equipment on which servicing, or maintenance is being performed under lockout or tagout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed. Authorized worker.
	Alive, Live	Electrically connected to a source of potential difference or electrically charged so as to have a potential significantly different form that of earth or ground potential. The term also means "current carrying."
	ANSI	American National Standards Institute.
	Anchorage	A secure means of attachment for lifelines, lanyards, and deceleration devices.
	Approved	When used in connection with methods, tools, or equipment, refers to the methods, tools, or equipment approved by the Company through committee, departmental action, or safety rule.
	Assured Grounding System	An equipment grounding covering all cord sets, any equipment connected by cord sets and receptacles which are not a part of a building or structure. This includes regular inspections and continuity tests to ensure that there is no damage, defects, deformed or missing parts that would render the device or equipment unsafe.
	Attendant	A worker assigned to remain immediately outside the entrance to an enclosed or permit-required confined space to render assistance as needed to entrants inside the space
	Authorized Person	One who has the authority to perform specific duties under certain conditions or who is carrying out orders from responsible authority and who is knowledgeable in the construction and operation of the equipment and the hazards involved.
	Automatic Circuit Recloser	A self-controlled device for interrupting and reclosing an alternating current circuit with a predetermined sequence of opening and reclosing.

B

Backfeed	To energize a section of a circuit, or a section of a power network that is supplied from a source other than its normal source. As an intended or planned work procedure, this can be done in a safe manner. When this occurs (where a circuit or section of power network is supplied from a source other than its normal source) and it is unexpected or unintended, an extremely hazardous condition can occur, for example, when a customer's portable generator is connected to circuits that have not been isolated from the Company's service and distribution lines. Note: A hazardous backfeed condition can occur on lines and equipment through interconnections on transformer banks.
Barricade	Materials such as tapes, cones, or A-frame type wood or metal structures intended to provide a warning about a hazardous area and to limit access to it.
Barrier	A physical obstruction which is intended to prevent contact with energized lines or equipment or to prevent unauthorized access to a work area or restricted area.
Basket (Aerial Device)	One component of the bucket truck and is the enclosure in which the worker stands and works aloft. An aerial lift and includes the entire piece of equipment: the truck, auxiliary power supply, upper boom, lower boom, controls, etc.
Benching, Benching System	A method of protecting workers from cave-ins by excavating the sides of an excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.
Body Belt, Safety Belt	A strap that both secures around the waist and attaches to a lanyard, lifeline, or strap.
Body Harness	A device that secures the worker in a manner which distributes the arresting forces over at least the thighs, shoulders, and pelvis with provisions for attaching a lanyard, lifeline, or deceleration device.
Bond	The electrical interconnection of conductive parts designed to maintain a common electrical potential.
Bus	A conductor or a group of conductors that service as a common connection for two or more circuits.

Bushing	An insulating structure, including a through- conductor or providing a passageway for such a conductor, with provision for mounting on a barrier, conducting or otherwise, for the purpose of insulating the conductor from the barrier and conducting current from one side of the barrier to the other.
C Cable	A conductor with insulation, or a stranded conductor with or without insulation and other coverings (single–conductor cable), or a combination of conductors insulated from one another (multiple-conductor cable).
Cable Sheath	A conductive protective covering applied to cables. A cable sheath may consist of multiple layers of which one or more is conductive.
Carboy Tilter	A large plastic or glass bottle or container in a supporting frame used to safely control and pour liquids.
Catastrophic Release	A major uncontrolled emission, fire, or explosion involving one or more highly hazardous chemicals that presents serious danger.
Chemical	Acids, caustics, solvents and other materials and substances used in the plants and within the Company.
Circuit	A conductor or system of conductors through which an electric current is intended to flow.
Clearance (Between Objects)	The clear distance between two objects measured surface to surface.
Combustible Liquids	Any liquid having a flash point at or higher than 140ºF and less than 200ºF.
Communication Lines	The conductors and their supporting or containing structures that are used for public or private signal or communication service. Telephone, telegraph, railroad signal, data clock, fire, police-alarm, community television antenna, and other similar systems are included.
Competent Person	One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to workers, and who has authorization to take prompt corrective measures to eliminate them.
Conductor	A material, usually in the form of a wire, cable, or bus bar, used for carrying an electric current.

	Confined Space	A working space such as a transformer, tank, vessel, boiler, hopper or pit etc., that is large enough and so confined that an employee can bodily enter and perform assigned work; has limited or restricted means for entry or exit and is not designed for continuous human occupancy under normal operating conditions, meet the definition of a confined space. Spaces that meet this definition and contain a hazardous atmosphere or other recognized serious safety hazards (i.e. engulfment, entrapment, etc.) and may only be entered in accordance with the Permit-Required Confined Spaces Program. Similarly, enclosed spaces that cannot be safely entered must be entered under the more comprehensive Permit-Required Confined Spaces Program.
	Covered Cable	A conductor covered with a dielectric having no rated insulating strength or having a rated insulating strength less than the voltage of the circuit in which the conductor is used.
D	De-Energized	Free from any electrical connection to a source of potential difference and from electric charge; not having a potential different from that of the earth. The term is used only with reference to current-carrying parts, which are sometimes energized (alive). Note: a circuit or device must be isolated and grounded to be considered de-energized.
	Designated Person	A worker (or person) who is designated to perform specific duties and who is knowledgeable in the construction and operation of the equipment and the hazards involved. See Authorized Person.
	Disconnected	Disconnected from any electrical source of supply.
E	Effectively Grounded	Intentionally connected to earth through a ground connection or connections of sufficiently low impedance and having sufficient current-carrying capacity to prevent the buildup of voltages that may result in undue hazard to connected equipment or to persons.
	Emergency	An emergency occurs when an unusual condition exists that endangers life and / or property.
	Enclosed	Surrounded by a case, cage, or fence, which will protect the contained equipment and prevent accidental contact of a person with live parts.

Enclosed Space	A working space, such as manhole, vault, tunnel, or shaft, that has a limited means of egress or entry, that is designed for periodic entry under operating conditions, and that under normal conditions does not contain a hazardous atmosphere, but that may contain a hazardous atmosphere under abnormal conditions.
Energized (Alive, Live)	Electrically connected to a source of potential difference, or electrically charged so as to have a potential significantly different from that of earth in the vicinity.
Energy Isolating Device	A physical device that prevents the transmission or release of energy, including, but not limited to, the following: a manually operated electric circuit breaker, a disconnect switch, a manually operated switch, a slide gate, a slip blind, a line valve, blocks, and other control-circuit-type devices are not energy isolating devices.
Energy Source	Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
Equipotential Zone	Temporary protective grounds shall be placed at such locations and arranged in such a manner as to prevent each worker from being exposed to hazardous differences in electrical potential.
Ergonomics	Founded in applied science, this is a process that focuses on human capabilities and limitations in the design of workstations, jobs, tools, and equipment. The goal of ergonomics is to reduce or eliminate stressful body movements.
Excavations	Any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.
Exposed	Not isolated or guarded. A bare condition applied to objects not guarded or insulated.

F

Fall-Arrest System	Arrests fall from one level to another. The assemblage of equipment such as line-worker's body belt or full body harness in conjunction with a deceleration device and an anchorage to limit the forces a worker experiences during a fall from one elevation to another.
Flammable Liquid	Any liquid having a flash point less than 140ºF and having a vapor pressure not exceeding 40 pounds per square inch (absolute) at 100ºF.
FR	Fire retardant.

G	Ground (Noun)	A tool or electrical system means intentionally creating a low-resistance path to the earth. When properly done, current from a short or from lightning follows this path, thus preventing the buildup of voltages that would otherwise result in electrical shock, injury and even death.
	Grounding (Verb)	A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.
	Ground Cluster, Set	A one-piece apparatus designed to ground two and three phase lines. This device must be installed with a hot stick.
	Grounded	Connected to earth or to some conducting body that serves in place of the earth.
	Guarded	Protected by personnel, or covered, fenced, or enclosed by means of suitable casings, barrier rails, screens, mats, platforms, or other suitable devices in accordance with standard barricading techniques designed to prevent dangerous approach or contact by persons or objects. Wires that are insulated but not otherwise protected are not considered guarded.
H	Hazard Communication Program	Company program to ensure that information concerning hazardous chemicals (material) is transmitted to workers through the use of warnings, procedures, Safety Data sheets, and worker training.
	Hazardous Atmosphere	Means an atmosphere that may expose workers to the risk of death, incapacitation, impairment, or ability to self-rescue (that is, escape unaided from a confined or enclosed space), injury, or acute illness from one or more of the following causes: Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL). Airborne combustible dust at a concentration that meets or exceeds its LFL. Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet or less. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in Subpart G, Occupational

	Health and Environmental Control, or in Subpart Z of 29 CFR 1910, Toxic and Hazardous substances, which could result in worker exposure in excess of its dose or permissible exposure limit. Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision. Any other atmospheric condition that is immediately dangerous to life or health. Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Safety Data Sheets that comply with the Hazard Communication Standard, 29 CFR 1910.1200, published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions.
Hazardous Material (Substances)	Any substance that is a physical hazard or a health hazard. A substance is a physical hazard when there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or water reactive. The substance is a health hazard when it is determined to be a carcinogen, a toxic or highly toxic agent, a reproductive toxin, irritant, corrosive, sensitizer, hepatotoxin, nephrotoxic, neurotoxin, an agent that acts on the hematopoietic system, or an agent that damages the lungs, skin, eyes, or mucous membranes.
High Wind	A wind of such velocity that a worker would be exposed to being blown from elevated locations, a worker or material handling equipment could lose control of material being handled, or a worker could be exposed to other hazards. Winds exceeding 40 miles per hour or winds exceeding 30 MPH, if material handling is involved are considered to be high winds unless precautions are taken to protect workers from the hazardous effects of the wind.
Hot Work Permit	An authorization to perform work involving electric or gas welding, cutting, brazing or similar flame or spark producing operations. The permit form is a written authorization certifying that certain safety precautions have been implemented prior to, during and after completion of work operations.

I	Induced Voltage	The basic process of generating voltages and / or current requiring an electromagnetic field, a conductor and relative motion. This process occurs, in a practical manner, where an ungrounded conductor is in proximity to another energized (AC) conductor. The strength of the induced voltage varies directly with the distance (length) of the conductors, closeness to one another and amount of loading (current) on the energized (AC) conductor. Also, can occur with electrical equipment situations and in conductive objects. Note: Grounding to earth potential removes this potentially hazardous condition from occurring.
	Insulated	Separated from other conducting surfaces by a dielectric (including air space) offering a high resistance to the passage of current. Note: When any object is said to be insulated, it is understood to be insulated for the conditions to which it is normally subjected. Otherwise, it is un-insulated.
	Insulated Cable	That which is relied upon to insulate the conductor from other conductors or conducting parts or from ground.
	Isolation	A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches and other control circuit type devices are not energy isolating devices.
J	Job Risk Briefing	A job briefing is an assessment of safety and health conditions related to a specific job or task. OSHA requires that the following topics be covered during a briefing: hazards associated with the job, work procedures involved, special precautions, energy source controls and personal protective equipment requirements. Additional job briefings shall be held if significant changes, which might affect the safety of the workers, occur during the course of the work. Refer to OSHA for more information: 1910.269 - Electric power generation, transmission, and distribution. | Occupational Safety and Health Administration (osha.gov)
K		(Purposely left blank – no definitions for "K")

L	Lanyard	A flexible line used to secure a body belt or body harness to a lifeline or directly to a point of anchorage.
	Lifeline	A line provided for direct or indirect attachment to a worker's body belt, body harness, lanyard, or deceleration device. Such lifelines may be horizontal or vertical in application.
	Live-Line Tools	Those tools and ropes that are especially designed for work on energized high voltage lines and equipment. Insulated aerial equipment especially designed for work on energized high voltage lines and equipment shall be considered live line.
M	Maintenance Of Traffic (MOT)	A system of directing and controlling traffic so as to: (1) prevent injury to our workers whose work area is adjacent to or encroaches upon one or more lanes of traffic; and (2) to prevent injury to the motorist who is sometimes forced to make rapid adjustments to unexpected road conditions.
	Manhole	A subsurface enclosure, which personnel may enter, that is used for installing, operating, and maintaining equipment and / or cable.
	Manhole Opening	An opening through which persons may enter into a confined or enclosed space.
	Minimum Approach Distance	The minimum distance in air to be maintained between any part of the body of a worker, including any object (except tools appropriate for live working) being handled directly, and any part(s) at different potential(s).
N	Near Miss	An unintended, unplanned, and unexpected event that could have, but did not result in personal injury or property damage.
O	Overhead Structures	An Overhead Structure- any improvement extending over a public place, right of way or street.
P	Padmount	Transformer or equipment in a surface-mounted enclosure normally worked from ground level.
	PCBs (Polychlorinated Biphenyls)	A nonconductive and noncombustible liquid used in some transformers and capacitors. It has several trade names – Pyranol, Askeral, Inerteen, etc.

	Personal Hygiene	Habitual patterns and behaviors for any individual involving sanitary practices and cleanliness which are the principles for the preservation of health and the prevention of disease.
	Personal Protective Equipment	Any safety material or safety device worn to protect a worker from exposure to or contact with any harmful material or force and meets applicable ANSI standards.
	Person In Charge	In a general sense, any person, regardless of classification, who is directly in charge of a specific job or jobs.
	Positioning Device	A body belt or body harness system rigged to allow a worker to be supported on an elevated vertical surface such as a wall or pole and to work with both hands free.
	Primary Voltage	Any electrical circuit that normally operates at more than 600 volts.
	PSIG	Pounds per square inch gauge. The gauge pressure, measured by the number of pounds-force exerted on an area of 1 square inch.
	Public	Any individual who is not a worker or representative of the Company.
Q	Qualified	One who has extensive knowledge, training and experience who has successfully demonstrated the ability to do a particular job.
R	Rope Grab	A device that attaches to a lifeline as an anchoring point to provide a means for arresting a fall.
S	Safety Data Sheets (SDS)	A document provided by manufacturers and importers of chemicals to convey information to the users of their products. The information includes data on physical characteristics, fire and explosion hazards, reactivity, and health hazards, special precautions, and fire and spill procedures.
	Safe Lifting Zone	A safe lifting zone is a predetermined radius clear of the load being lifted. It is an area where the worker will remain safe in the unforeseen situation a malfunction or drop of the load may occur.
	Secondary Voltage	Any electrical circuit that normally operates at less than 600 volts.
	Shall	The rule is to be obeyed as written. A mandatory requirement.
	Should	Should means recommended.

	Sign	An openly displayed board, placard, etc. bearing information, warning or instructions. Accident prevention signs have standard signal words or symbols, legends and colors to convey a danger, warning, caution or notice. Warning signs Any sign or similar means of worker or public notification alerting them to an actual or possible hazard. Included are Danger signs, Caution signs, traffic protection signs, instructional signs, and informational signs.
	Snap Hook	A self-closing device with a keeper, latch, or other similar arrangement that will remain closed until manually opened. Such devices include self-closing, double-action, or double-locking snap-locks.
	Switch	A device for opening and closing or for changing the connection of a circuit. In this section, a switch is understood to be manually operable, unless otherwise stated.
	Switching Operator	A qualified person designated to operate the system or its parts. The person actually doing the switching as ordered by the switching supervisor.
	Switching Supervisor, System Operator	Person designated as having authority over switching and clearances of electrical lines and station equipment. The person under whose orders the switching is done.
T	Tag	An openly displayed card, ticket, plastic marker, etc. tied or securely attached to something as a label to give information, warning or instruction. Accident prevention tags have standard signal words, symbols, and colors to convey a danger, warning, caution, or information.
U	Underground Residential Distribution (URD)	A general term that covers the necessary facilities to furnish underground service, generally to residential and commercial customers through buried cable.
	Unsafe Conditions	Used to indicate dangerous conditions, hazardous conditions, defective conditions, or unusual conditions that could be conducive to accidents.

V	Vault	An enclosure, above or below ground, which personnel may enter and which is used for the purpose of installing, operating, or maintaining equipment or cable.
	Vented Vault	A vault that has provision for air changes using exhaust flue stacks and low-level air intakes operating on differentials of pressure and temperature providing for airflow which prevents a hazardous atmosphere from developing.
	Voltage	The effective potential difference between any two conductors or between a conductor and ground. The voltage specified in this manual shall mean the maximum effective voltage to which the personnel or protective equipment may be subjected. Low voltage includes voltages up to 600 volts. High voltage shall mean voltages in excess of 600 volts.
W	Work Area	That area in which all work activities and equipment are confined.
	Worker	A general reference to those personnel performing work or a task that are employed by the Company. Depending upon circumstances, this can also include temporary workers, contractors, or others.
XYZ		(Purposely left blank – no definitions for "X, Y or Z")

Return to Top

APPENDIX B (Programs Library)

Follow Link: Safe Work Practices - Energy Delivery Brochures & Documents - All Documents (sharepoint.com)