POLE TOP/BUCKET RESCUE

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Pole Top and Bucket Rescue Manual

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SECTION 1.
INTRODUCTION

Scope

This document provides information that can be used in practicing a safe, simple, always-available method for rescuing a person from a pole, tree or other elevated structure.

General

Rescue of a conscious or unconscious person from a pole or other elevated structure may be required due to illness, severe injury or electric shock.
In any of these situations, the victim may require help to reach the ground safely. Sometimes this may consist of minimal assistance while the individual comes down under his/her own power. Other times it may require lowering an unconscious or severely injured person.

It is important that all personnel practicing these types of rescues realize that only **journeymen linemen and hot step apprentices** are trained to do these rescues. Local authorities are not trained in these types of procedures. They should stand back and wait for the victim to be cleared of electrical contact and lowered to the ground by qualified personal.

In order to have the best chance of resuscitating an accident victim, it is essential that the rescue be effected in as short a time as possible. With this important fact in mind, it is imperative that crew personnel practice the procedures outlined in this document on a regularly scheduled basis (should be done annually). Success depends upon the people performing the rescue knowing exactly what to do and being prepared for an emergency.

The rescuer can be prepared by having all rescue equipment available as close to the work location as possible. This may include:

1) Pole climbing equipment,

2) Rubber gloves and sleeves,

3) Bolt cutters,

4) Knowing your exact work location,

5) Having portable radio or cellular communication if your work location is not in close proximity to your radio communication base. It is also advisable to have all personnel become familiar with aerial lifting devices, bucket dumping systems and the location of the bucket rescue equipment.

SECTION 2.
EMERGENCY COMMUNICATION

It's important that all employees understand their employer's emergency communication procedures. When medical attention may be required, getting the local Emergency Medical Services (EMS) en-route as quickly as possible is a key factor to successfully rescue the victim. Rescue personnel must either contact the local 911 dispatch center directly or contact the emergency response center set up by the employer.

If the employer or the utility where the work is being performed has an established emergency response system, it is advisable to take advantage of this system. In the event of an emergency, the rescuer contacts the emergency response center by telephone or radio. The center's personnel will then contact the local 911 dispatch center and direct other crews in the area to help while the rescue personnel tend to the victim.

When there is no emergency response center established, a member of the rescue crew must contact the local 911 dispatch center directly. It is imperative that the caller remain calm and have the appropriate information ready for the 911 operator.

Frequently asked questions by the 911 operator:

What is your emergency?

How many people are involved?

What time did the accident happen?

What is the address of the accident location?

What is your name?

What is your call back number?

What is being done for the victim now?

Will there be someone there to meet the ambulance?

Will the scene be safe for EMS to enter?

Are you able to stay on the line for further instructions?

NOTE: Only after the rescue and the necessary first aid has been given to the victim, and professional rescue personnel have taken over the treatment of the victim, may you begin dealing with the managing and coordinating of the accident scene.

SECTION 3.
EMERGENCY PROCEDURES

1.) Size up the situation/ Call to the victim
2.) Call for assistance (911 or response center)
3.) Provide for your own protection
4.) Climb to the victim and free him/her from any electrical contact
5.) Quickly evaluate condition of victim
6.) Lower victim to ground
7.) Administer CPR or First Aid

1. SIZE UP THE SITUATION

Call to the victim. Is the person conscious or unconscious? Is time a critical factor? Identify hazards. Establish a course of action. Move quickly, but not to the extent that the rescuer could sustain an injury and be of little or no assistance to the victim.

2. CALL FOR ASSISTANCE

Make use of available communications equipment (company radio or cell phone) or obtain assistance from a bystander.

3. PROVIDE FOR YOU OWN PROTECTION

Have rubber gloves, sleeves, rescue, and safety equipment readily available.

4. CLIMB TO THE VICTIM AND FREE HIM/HER FROM ANY ELECTRICAL CONTACT

Before climbing to a victim, make sure you are protected! Take the tools and equipment necessary to perform the rescue.

If necessary, cut or clear obstructions on way up the pole to provide a clear path for the victim's descent.

Always belt in before your head reaches the victim's feet. Both hands are then free to move the victim or to prevent the chance of being gaffed or accidentally knocked from the pole by the victim.

To free the victim from electrical contact use approved rubber protective equipment and take all precautions necessary to accomplish the rescue in a safe manner.

CAUTION: Do not attempt any first aid until victim is clear of all electrical contacts.

5. QUICKLY EVALUATE CONDITION OF VICTIM

1) *Victim is conscious*: If this is the case, time may not be a critical factor. Getting the victim to the ground immediately may not be necessary. Reassure the victim and administer the necessary first aid.

2) *Victim is unconscious*: Experts recommend to lower the victim quickly to the ground where effective CPR/First-Aid can take place.

NOTE: In a situation that a considerable amount of time has passed and the victim is not breathing, provide an open airway for victim by tilting head back and giving two slow full breaths.
Do not attempt prolonged first aid, other than two slow full breaths, but lower victim quickly to the ground

6. LOWER VICTIM TO GROUND

The procedure for rigging a victim to be lowered to the ground does not require a special harness. The line used for rescue is a synthetic ½" handline for line personnel. The approved synthetic handline shall in all cases have a loop at one end of the line and a safety snap at the other. Because the handline is also the person's lifeline, it shall always be carried aloft each time a pole or other elevated structure is climbed, or aerial basket device is used.

7. ADMINISTER CPR OR FIRST-AID

Determine the medical needs of the victim. Give appropriate care until EMS arrives.

NOTE: Aerial basket equipment should not be used to rescue a person from a pole.
Some of the reasons for this recommendation are:

1. Basket could be overloaded with two persons.

2. Baskets move too slowly; it is faster to climb to a victim.

3. Depending on configuration of the structure, the basket may not be able to reach the victim.

4. If an error is made in placing (locating) equipment, too much time is required to reposition equipment and not all baskets can be lowered to the ground.

REVIEW QUESTION:

Number the following steps in the order for an emergency procedure.

a. _____Call for assistance
b. _____Lower victim to the ground
c. _____Size up the situation
d. _____Administer CPR or First Aid
e. _____Provide for your own protection
f. _____Quickly evaluate condition of victim
g. _____Climb to victim and free from any electrical contact

SECTION 4.
RESCUE RIGGING - POLE TOP

In each of the following rigging options shown and discussed, the person on the pole performing the rescue can control lowering the victim to the ground. The position of the victim on the pole and the position of the hand-line and hardware on the pole, will dictate which type of rigging you will use. .

Remember, speed is essential if the rescue is to be successful.

Option Number 1

In armless or cross-arm construction, option number 1 requires the end of the hand-line to be placed over the selected piece of hardware or cross-arm as shown in Figure 4-1 and Figure 4-2. Enough friction or drag for control is provided by looping the free end (snap end) of the line twice around the fall line.

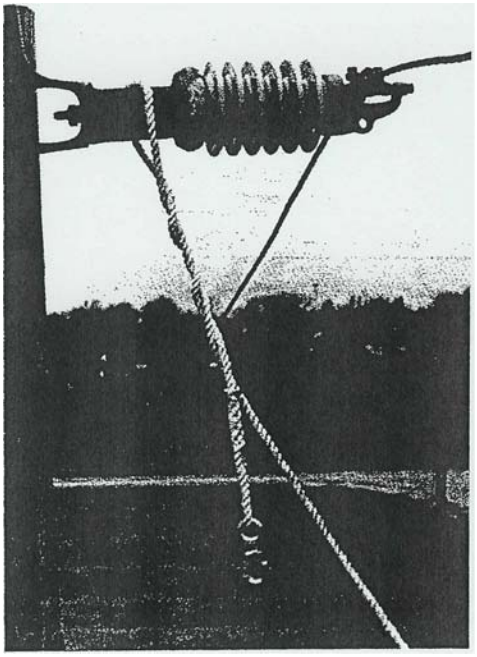

Figure 4-1

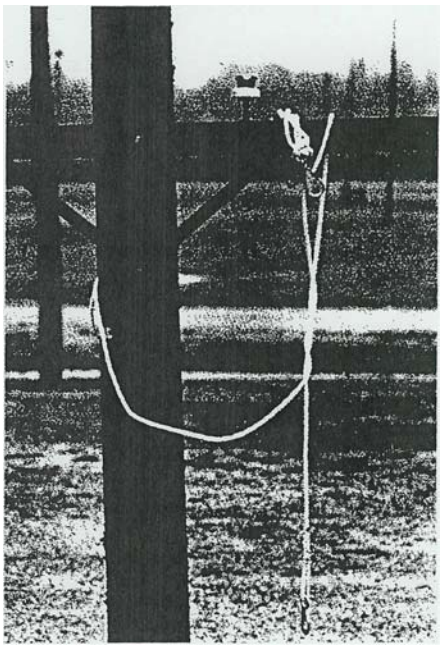

Figure 4-2

Loop the snap end of the line around the victim's back just under the armpits. Bring the snap end of the line around to the victim's chest and tie three half-hitches.* Tie the three half-hitches as close to the victims chest as possible. Care must be taken that the line, when passed around the victims back does not catch on tools from the victim's body belt, resulting in the line being too far below the armpits. Remove slack from the hand-line. Keeping a firm grip on the fall line cut the victim's safety strap and lower victim to the ground. Once the victim reaches the ground, they should be placed flat on their back and given the necessary First Aid/CPR.

Option Number 2

When the snap end of the hand-line is snapped into the loop end of the line, pull the line through the hand-line pulley until you have the snap end. Separate the line and drop the loop end to the ground. Double loop the snap end around the closest cross-arm, insulator bracket, etc., as shown in Figure 4-3. When possible, rig the line at a location that will help keep the victim clear of obstructions during the lowering of the victim.

Loop the snap end of the line around the victim's back, just under the armpits. Bring the snap around to the front of the victim's chest and tie three half-hitches.* Tie the three half-hitches as close to the victims chest as possible. Care must be taken that the line, when passed around the victim's back, does not catch on tools from the victim's body belt, resulting in the line being too far below the armpits. Remove slack from the hand-line. Keeping a firm grip on the fall line cut the victim's safety strap and lower victim to the ground. Once the victim reaches the ground, they should be placed flat on their back and given the necessary First Aid/CPR.

If there is any possibility that the double loop of the line over the cross-arm can become wedged, single loop the snap end of the line over the cross-arm and attach to the victim. Place your second loop around the cross-arm by coming under and over the arm in the opposite direction. This will place a piece of hardware between your loops in order to prevent the loops from becoming wedged, as shown in Figure 4-4. Remove slack from the hand-line. Keep a firm grip on the fall line, cut the victim's safety strap and lower victim to ground.

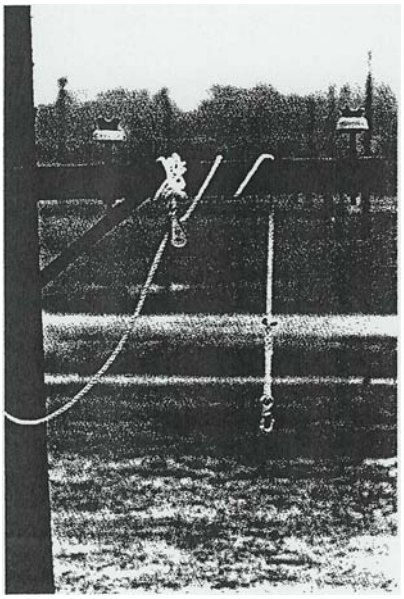

Figure 4-3

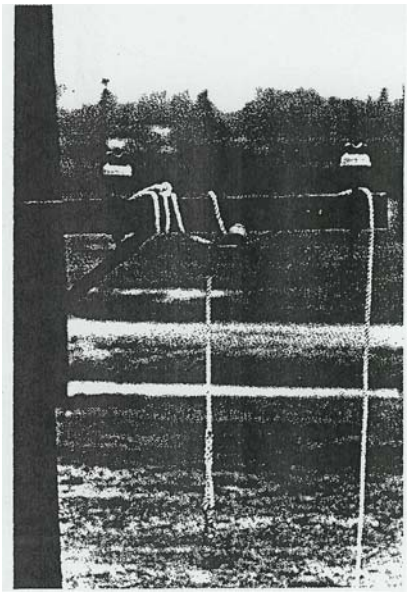

Figure 4-4

***NOTE: Using the snap to secure the rope around the victim's chest may cinch excessively and constrict breathing and is not recommended. Generally, snaps used on hand-lines are <u>not rated for human support</u>.**

Option Number 3

In any of the options there is the possibility that the two ends of the hand-line are separated and one end is at the top of the pole. If it is too time consuming to retrieve that end, the rescuer can always take the free end of the line up the pole for the rescue. Using the screwdriver method, rig the hand-line as shown in Figure 4-5 and 4-6.

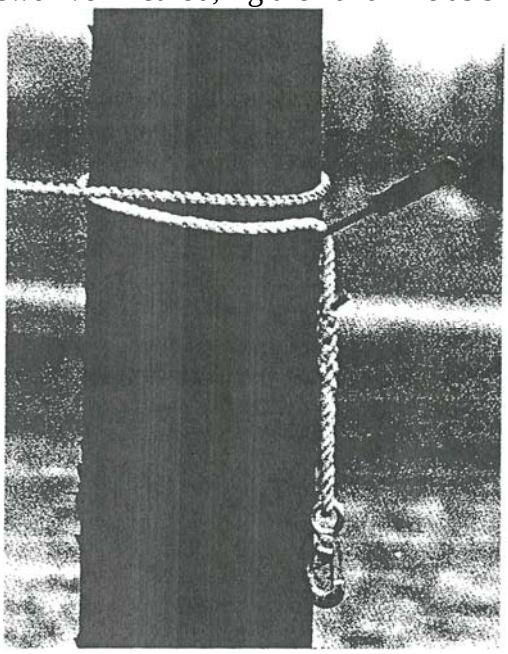

Fig 4-5

Fig 4-6

The screwdriver method is recommended for rescue on clear poles or on poles where the hardware does not lend itself to easy rigging of the hand-line.

On all poles, drive the screwdriver into the pole approximately two feet above the victim's head to a depth of approximately two inches. The handle of the screwdriver should have an upward tilt of approximately two inches from a level plane.

One advantage to using the screwdriver method is that the rigging can take place at the same elevation as the victim.

Pass the snap end of the line once around the pole and over the top of the screwdriver blade. The fall line must be on top of the running end of the line so as not to hamper the descent of the victim. Loop the line around the victim's back just under the armpits and secure by tying three half-hitches into the line in front of the victim's chest. Remove slack from the hand-line. Keeping a firm grip on the fall line cut the victim's safety strap and lower victim to ground.

NOTE: In each of the rescue options discussed, rigging of the hand-line provides enough friction or drag on the line that the person on the pole affecting the rescue can control the victim's descent to the ground.

REVIEW QUESTIONS:

A. When securing the line around the victim’s chest, how many half-hitches should be tied?

a. _____ 1 half-hitch
b. _____ 3 half-hitches
c. _____ 6 half-hitches

B. When using the screw driver option for pole top rescue, approximately how high above the victim's head should the screwdriver be driven into the pole?

a. _____ 2 feet
b. _____ at head level
c. _____ 5 feet

C. The screw driver is to be driven into the pole to a depth of approximately __?___ inches, with the handle having an upward tilt of approximately two inches from a level plane.

a. _____ 10 inches
b. _____ 2 inches
c. _____ 8 inches

SECTION 5
BUCKET RESCUE

General

In cases where the victim of an accident involving and aerial basket device is rendered unconscious due to electric shock, physical blow or heart attack, first aid or CPR will be required. The awkward and cramped position in an aerial basket make it impossible to effectively aid the victim without placing the person on a flat, firm surface, such as the ground. With this fact in mind, it is of primary importance to get the victim to the ground as quickly and safely as possible.

In the event a person operating an aerial basket becomes incapacitated, there are four methods of rescue that should be considered. Familiarize yourself with the procedures for each of the following rescue options so you instantly know which course of action you will pursue.

Many aerial devices are equipped with a "dump" feature. This feather is a mechanical device that enables a bucket to be disengaged, at one point from the boom. The bucket can then be turned to the side or front to aid in easier extraction of the victim. Every manufacturer has a different type of dump feature. It is essential that you familiarize yourself with the type of dump feature that your truck is equipped with. The device should be operated at least once a month to make sure that it is in good operating order. Not every truck that has a "dump" feature is able to have the bucket brought to the ground. Care must be taken to maneuver the bucket as close as possible to the ground. Also, some trucks that have the ability to bring the bucket to the ground are not equipped a dump feature. For this reason **DUMP BUCKET** decals should be provided and placed on the front and back of all buckets with a dump feature and **NON DUMP BUCKET** decals should be placed on all non-dumping buckets.

Option # 1 should be considered when it is specifically known the basket will come to the ground and there are at least two crewmembers available to remove the victim from the basket

Option # 2 should be considered when the victim must be removed from a single, two-person basket

Option # 3 should be considered when the victim must be removed from a single one-person basket or from either basket involving a two, one-person basket vehicles

Option# 4 should be used when the accident happens while working mid-span and there isn't a pole or tree available

NOTE: One person can affect all rescue options, except # 1

Option # 1- Basket will come to the Ground

1. **Size up the situation** – call to victim. Is victim conscious or unconscious? Is time a critical factor? Identify hazards. Establish a course of action. Move quickly, but not to the extent that the rescuer could sustain an injury and be of little or no help to the victim.

2. **Call for assistance** – make use of available communications equipment (company radio or cell phone) or obtain assistance from a bystander.

3. **Wearing rubber gloves, operate the override control if necessary to transfer basket operation to ground control.** Maneuver basket to ground making sure lower boom and upper boom is clear of overhead contacts.

4. When moving a dump bucket to the ground care must be taken to avoid pinning the bucket to the ground. This may cause the mechanical features of the dump system to become wedged. Using the dumping feature of the bucket (Figure 5-1) remove the victim and begin CPR/First Aid.

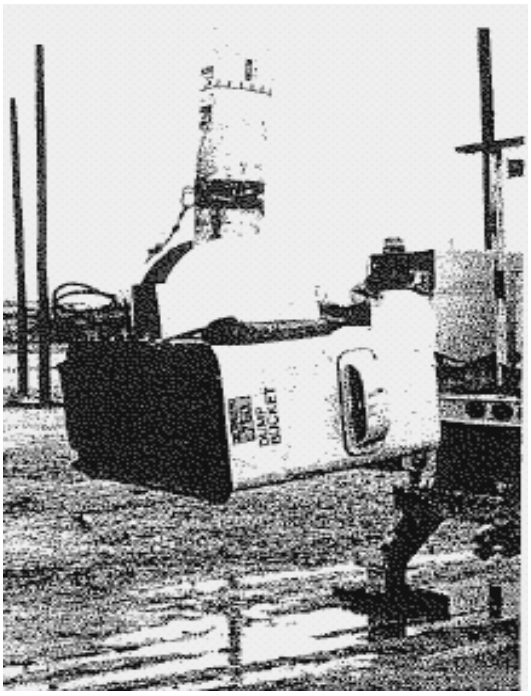

Figure 5-1

NOTE: If this would be a non-dumping bucket, remove the victim from the bucket with the help of another crewmember and proceed with CPR/First Aid.

Option # 2- Single Two-Person Basket in Proximity to Pole

1. **Size up the situation** – call to the victim. Is the person conscious or unconscious? Is time a critical factor? Identify hazards. Establish a course of action. Move quickly, but not to the extent that the rescuer could sustain an injury and be of little or no assistance to the victim.

2. **Call for assistance** – make use of available communications equipment (company radio or cell phone) or obtain assistance from a bystander.

3. **Wearing rubber gloves, operate override control if necessary to transfer basket operation to ground control**. Maneuver basket to ground, making sure lower and upper boom are clear of overhead contacts.

   CAUTION: Override control must be transferred back to basket before operator enters basket.

4. Quickly evaluate condition of victim.

5. **Render first aid by providing two slow full breaths if the victim is not breathing**.

6. Maneuver basket to a position on the body of the pole approximately 15 feet above ground

   CAUTION: Maintain enough height above ground so bucket can be lowered from under the victim.

7. Rig handline for lowering victim to ground by using screwdriver method as described in option # 3, (Rescue Rigging). If no handline is present on the pole, take one along to affect the rescue.

If you are unable to fasten the handline under the victim's armpits due to the position of the victim in the basket, snap the line into the D-ring of the aerial basket body harness.

8. Unsnap or cut the victim's safety lanyard.

9. Keeping a firm grip on the fall end of the handline, operate the basket controls to lower basket from under the victim. Lower victim to ground.

10. Rotate basket back to vehicle where operator can exit basket and render first aid or assist another crewmember, if present.

Option # 3 – Single One-Person Basket and Two One-Person Basket Vehicle in Proximity to Pole

1. **Size up the situation** – call to victim. Is victim conscious or unconscious? Is time a critical factor? Identify hazards. Establish a course of action. Move quickly, but not to the extent that the rescuer could sustain an injury and be of little or no help to the victim.

2. **Call for assistance** - make use of available communications equipment (company radio or cell phone) or obtain assistance from a bystander.

3. **Wearing rubber gloves**, **operate override control to transfer basket operation to ground control.** Maneuver basket against body of pole or trunk of tree. Pick an area on pole that is free from obstructions if practical.

   CAUTION: Override control must be transferred back to basket before rescuer climbs pole.

4. Put on climbers, body belt, rubber gloves and sleeves, if required. Take along tools to affect the rescue. When climbing the pole, provide a clear path for the victim's descent.

5. Quickly evaluate condition victim.

6. **Render first aid by providing two slow full breaths if the victim is not breathing**.

7. Rig handline for lowering victim to ground by using screwdriver method as described in Option # 3(Rescue Rigging). In no handline is present on the pole, take one along to affect the rescue.

   If you are unable to fasten handline under the victim's armpits due to the position of the victim in the basket, snap the line into the D-ring of the aerial basket body harness.

8. Unsnap or cut victim's safety lanyard.

9. Keeping a firm grip on the fall end of the handline, operate the basket controls to lower basket from under victim. It will probably be necessary for the rescuer to descend a short distance down the pole or tree as he/she is lowering the basket.

10. Lower victim to ground with handline and proceed with CPR/First Aid.

Option # 4- Mid-span Rescue (Non-dump buckets)

1. **Size up the situation**- call to victim. Is victim conscious or unconscious? Is time a critical factor? Identify hazards. Establish a course of action. Move quickly, but not to the extent that the rescuer could sustain an injury and be of little or no help to the victim.

2. **Call for assistance** – make use of available communications equipment (company radio or cell phone) or obtain assistance from a bystander.

3. **Wearing rubber gloves, operate override control if necessary to transfer basket to ground control.** Maneuver basket as close as possible to the rear or side of the vehicle.

   NOTE: The lower and upper boom must be as vertical as possible to facilitate easy removal of the victim from the basket.

4. A ratcheting strap with a "D" ring should be attached on the upper boom of the aerial basket. This strap and "D" ring combination should be installed 6 ½' above the lip of the bucket. A non-slip surface on one side of the strap should be in contact with the boom to prevent slippage. Install the strap so D-ring is on the same side of boom as the pedestal controls.

5. Install the blocks to the "D" ring on the tipper boom. The sheave hook may be color coded to ensure proper installation (yellow sheave hook to yellow "D" ring strap). .

   NOTE: It is recommended that the waterproof storage container containing the aerial basket rescue kit be installed in an unobstructed and visible location at or near the lower boom controls.

6. Snap the other end of the blocks into the victim's "D" ring of the bucket belt harness.

   NOTE: Make sure the fall line is not trapped between the block line and boom. Remove any tools or equipment that may restrict the removal of the victim from the bucket.

7. By using the lower controls, position the bucket out away from the truck approximately six feet so the victim can be removed from the bucket and lowered to the ground with hitting the vehicle.

8. After checking that the boom is not in any electrical contact, exit the bucket truck and pull the fall line to raise the victim out of the basket.

9. Lower victim to the ground by slacking off the fall line and assisting the victim to the ground. Then proceed with First Aid or CPR.

SECTION 6.
1910.269 REQUIREMENTS

1910.269 (a) (2) Training.

1910.269 (a) (2) (i)

Employees shall be trained in and familiar with the safety-related work practices, safety procedures, and other safety requirements in this section that pertain to their respective job assignments. Employees shall also be trained in and familiar with any other safety practices, including applicable emergency procedures (such as pole top and manhole rescue), that are not specifically addressed by this section but that are related to their work and are necessary for their safety.

1910.269 (a) (2) (ii)

Qualified employees shall also be trained and competent in:

1910.269(a) (2) (ii) (A)

The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment,

1910.269(a)(2)(ii)(B)

The skills and techniques necessary to determine the nominal voltage of exposed live parts.

1910.269(a)(2)(ii)(C)

The minimum approach distances specified in this section corresponding to the voltages to which the qualified employee will be exposed, and **1910.269(a)(2)(ii)(D**)

1910.269(a)(2)(ii)(D)

The proper use of the special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools for working on or near exposed energized parts of electric equipment.

Note: For the purposes of this section, a person must have this training in order to be considered a qualified person. The employer shall determine, through regular supervision and through inspections conducted on at least an annual basis that each employee is complying with the safety-related work practices required by this section.

1910.269(a)(2)(iv)

An employee shall receive additional training (or retraining) under any of the following conditions:

1910.269(a)(2)(iv)(A)

If the supervision and annual inspections required by paragraph (a)(2)(iii) of this section indicate that the employee is not complying with the safety-related work practices required by this section, or

1910.269(a)(2)(iv)(B)

If new technology, new types of equipment, or changes in procedures necessitate the use of safety-related work practices that are different from those which the employee would normally use, or

1910.269(a)(2)(iv)C

If he or she must employ safety-related work practices that are not normally used during his or her regular job duties.

Note: OSHA would consider tasks that are performed less often than once per year to necessitate retraining before the performance of the work practices involved.

1910.269(a)(2)(v)

The training required by paragraph (a)(2) of this section shall be of the classroom or on the-job type.

1910.269(a)(2)(vi)

The training shall establish employee proficiency in the work practices required by this section and shall introduce the procedures necessary for compliance with this section.

1910.269(a)(2)(vii)

The employer shall certify that each employee has received the training required by paragraph (a)(2) of this section. This certification shall be made when the employee demonstrates proficiency in the work practices involved and shall be maintained for the duration of the employee's employment.

Note: Employment records that indicate that an employee has received the required training are an acceptable means of meeting this requirement.