

JOURNEYMAN EVENTS

Journeyman Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



CROSS ARM CHANGE OUT

Mean Time: 8 minutes

Drop Dead Time: 15 minutes

Event Summary

The three phase conductors (#2 AAAC) are considered dead and grounded. The existing 8 ft. light cross arm, pierce pins and insulators must be replaced. A complete set of all necessary hardware will be available on the ground at each event pole. New cross arm, pins and insulators will be assembled after time starts. Lineman will replace existing cross arm with new equipment and send old cross arm down to the ground, re-secure conductors with new wrap-lock ties. All insulators must be removed from arm with nut/square washer back on pierce pins and separated from insulators before event is considered complete.

Event Specifics

1. See General Rules and additional General Rules
2. Teams will be allowed a 5-minute setup time before starting the event. All tools must be laid out on a competitor-supplied tarp in the designated work area.
3. Time starts at the judge's signal.
4. The new cross arm will be made up after the event starts.
5. Linemen may assist the ground man with rigging the new cross arm but will not be allowed to wear climbing tools while assisting.
6. Conductors can be floated.
7. Conductors are secured on a pierce pin and porcelain insulator with 1/0 AAAC wrap lock ties. (Screwdriver may be used to remove wrap lock ties, no knives or pliers)
8. After new cross arm is installed, conductors must be re-secured with wrap-lock ties. (Screwdriver may be used to install wrap lock ties, no knives or pliers)
9. The old rubber grommet may fall to the ground; the new one must be installed.
10. Time stops when both Linemen are back on the ground.

Teams will provide their own:

12 X 12 tarp max.	Climbing tools
Handline	Hand tools

CUTOUT AND ARRESTER CHANGE ON DISTRIBUTION RISER POLE

Mean Time: 8 minutes

Drop Dead Time: 15 minutes

Event Summary

The journeyman teams will replace a cutout and lightning arrester on a distribution riser pole that will be simulated to be energized at 15kV. Teams will isolate and ground the URD primary cable feeding a Padmount transformer.

Event Specifics

1. Cutout will be open with the top side jumper made up to a simulated hot 15kV -#2 str. Aluminum single phase distribution line.
2. The jumper will be attached to the 15 kV #2 Aluminum primary with a stirrup and hot line clamp.
3. The bottom of the cutout feeds a 15kV dip that is a #2 Al. quick termination on #2 Al. URD jacketed primary feeding into a 2" PVC pipe that is banded to the pole. The 2" pipe is 6" above the system neutral to below ground level. The concentric neutral of the URD jacketed cable will be terminated to the neutral conductor.
4. The dip will feed to a URD single phase transformer the distance to the transformer will be unknown and considered to be out of view of the dip pole. The transformer will remain closed and locked when not attended. A 10 foot circle will be around the transformer that the attendant must stay in.
5. The Phase feeding to the pole will be parked on a feed thru parking stand and considered to have been tested to be de-energized.
6. The cable must be grounded and tagged as grounded dead out of service before the climber can rubber glove the terminator or ground the terminator to work with leather gloves.
7. Both the arrester and cutout must be replaced.
8. New cutout arrester, Tee bracket and #4 solid cu jumpers with hot line clamp will be supplied.
9. Time will stop when cutout and arrester have been replaced, jumpers reconnected, grounds removed, men are on the ground and transformer is closed and locked.
10. There will be a 5-minute set-up time.

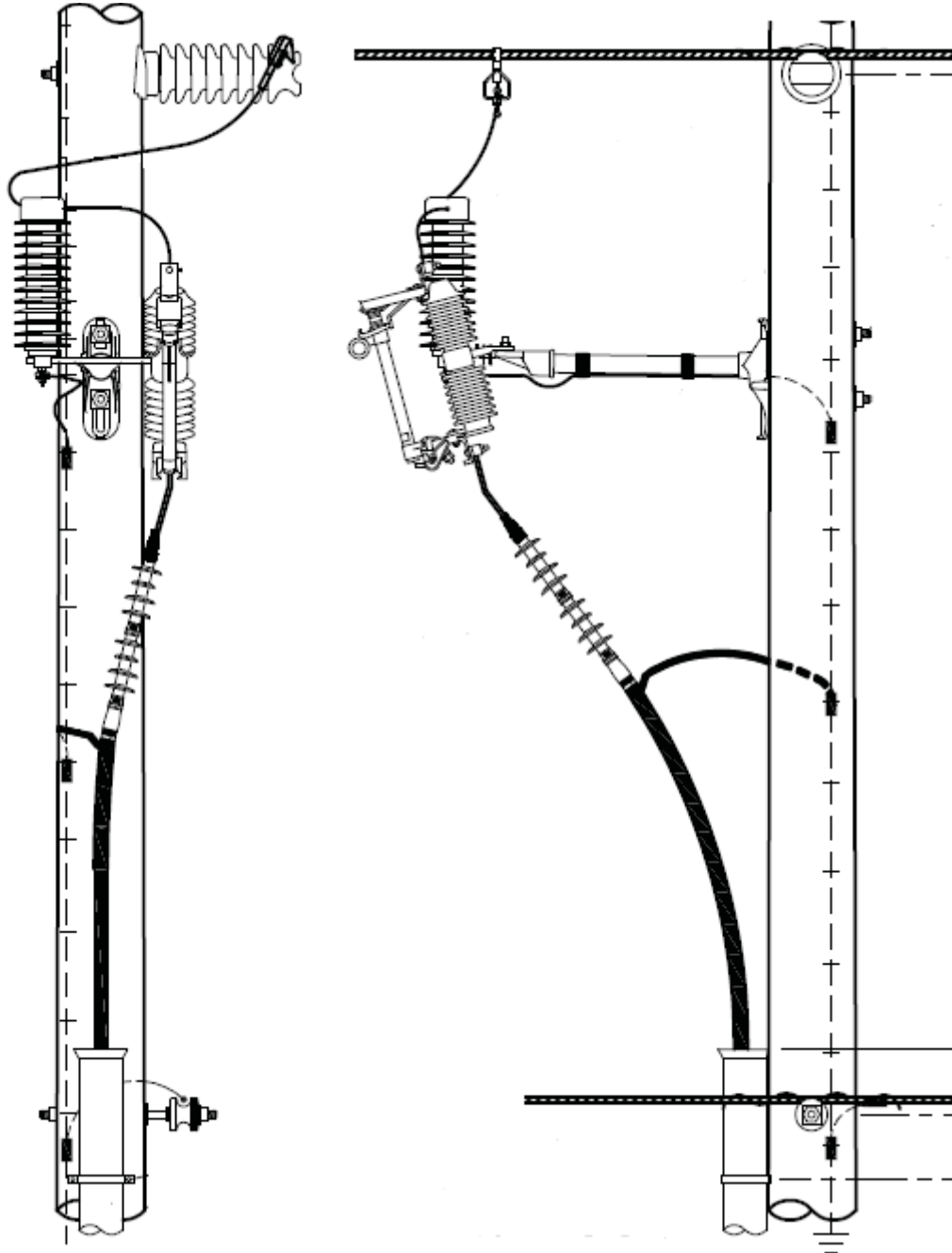
See Profile drawing for all measurements.

Teams will provide their own:

Hand-line	Hard Cover or Rubber Cover
Tarps 12' x 12' max	Shotgun Stick
Wire brush	Switch Stick

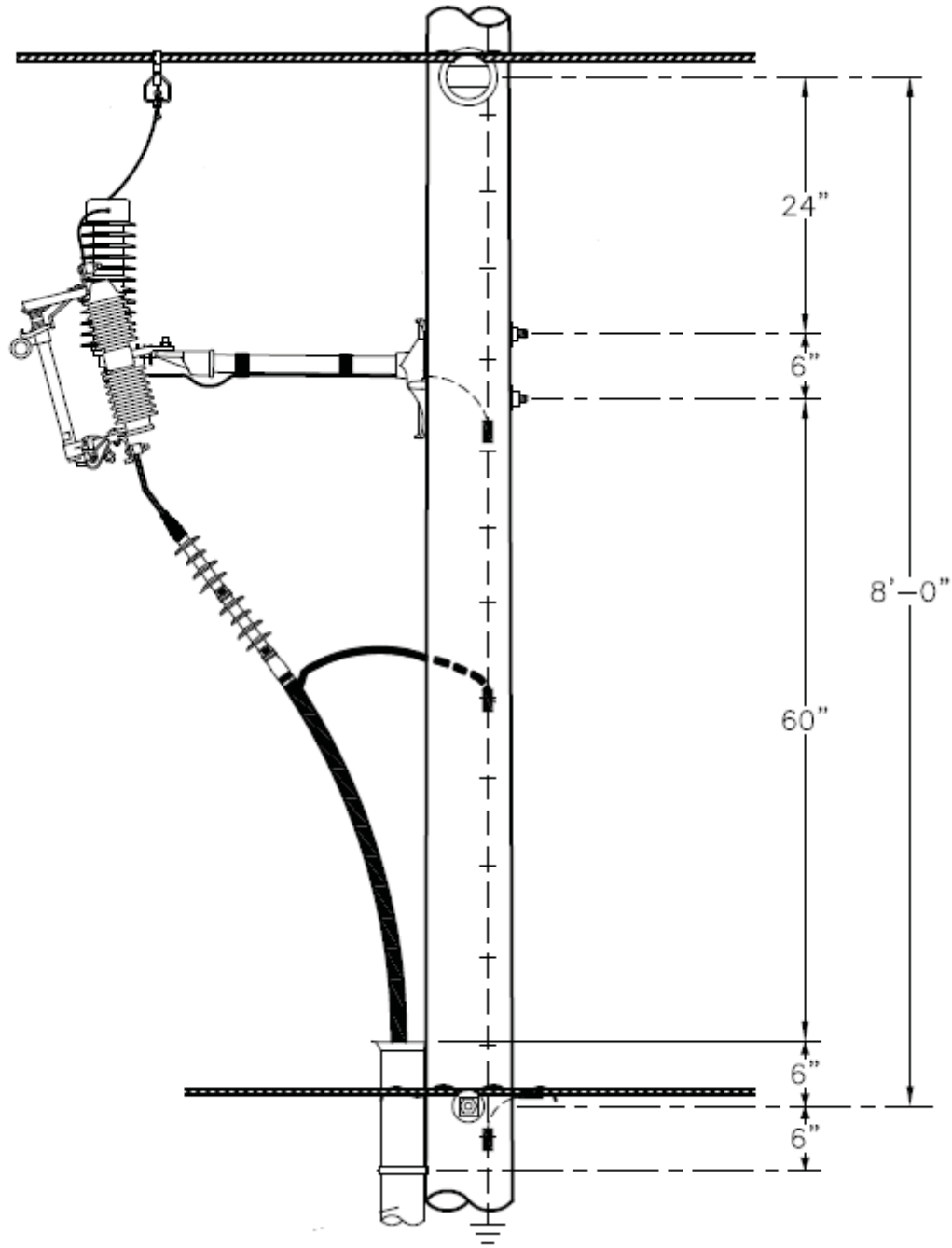
Journeyman Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



Journeyman Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



PROFILE VIEW

Journeyman Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



88 KV INSULATOR REPLACEMENT

Mean Time: 10 minutes

Drop Dead Time: 15 minutes

Event Summary

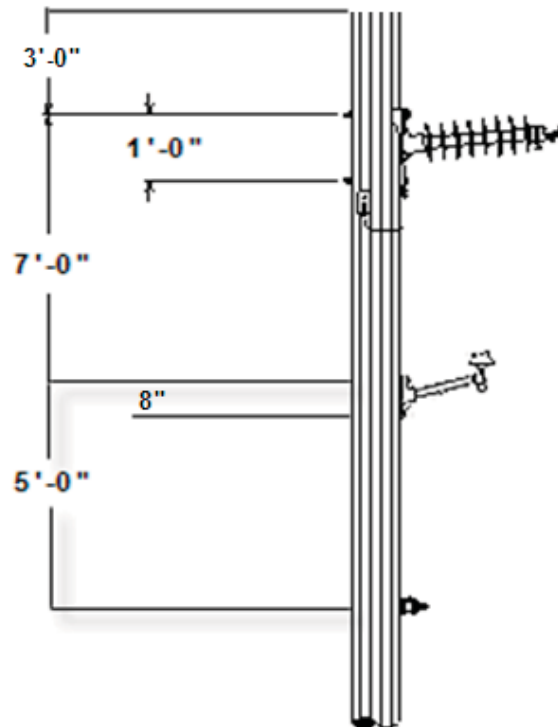
This event will consist of replacing an 88 kV porcelain insulator on a grounded 69kV line above an energized 12kV single phase conductor mounted on a 15" fiberglass stand-off bracket. The neutral, primary and insulators must be covered on both sides of the pole. The phase of transmission must be lifted off the insulator and supported with a mechanical rigging device (blocks, hoist etc.) of your choice. A sling, rope or choker must be used on the conductor. A hoist or block hook may not be placed on the conductor. The insulator must be lowered to the ground and placed in a designated spot. A new one will be sent up from another designated spot. The insulator must not touch the primary or neutral on the way up or down.

Event Specifics

1. Tools and equipment may be laid out during the 5 minute set up time.
2. Time starts at judge's signal.
3. Time stops when last lineman has both feet on the ground.
4. Judging will continue until area is returned to original condition.

Teams will provide their own:

12' X 12' tarp
Handline
Climbing tools
Rigging



88kv insulator change on bottom(C) phase of 69 Kv line with a single phase 7200 Kv underbuild line

Journeyman Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



VERTICAL HURTMAN RESCUE

Mean Time: 4 minutes

Drop Dead Time: 8 minutes

Event Summary

This team event will be run one time with all three team members participating to rescue the hurtman. Teams have 5 minutes to set up and ask questions. The switch (cutout) feeding the transformer must be opened before the climber can step onto the pole. It will be opened from the ground using an extendo stick and rubber gloves. The stick must be off the ground and the body anytime it is touching anything energized. The climber must wear rubber gloves ground to ground. Lineman will split handline and loop bottom part of handline around mannequin's legs. Then take the top part and wrap around the pole a minimum of one and a half wraps, take the rope under mannequin's arms and tie three half hitches (the splice cannot be part of the knot). The mannequin can then be lowered to the ground while the third member of the team uses the bottom part of handline tied to the mannequin's legs to pull mannequin on to the tarp. You must attempt to keep the mannequin off of the pole and hardware. There will be NO gigs for incidental contact of the mannequin on the pole, neutral or service provided the tagman is making an honest attempt. The mannequin must land with all of the body on the tarp provided, and must hit the ground gently as if it were a real person. A 10x10 tarp will be provided and placed 5' from pole centered under switch.

* Video will be posted on www.publicpower.com under the Competition section on how to do this event.

Event Specifics

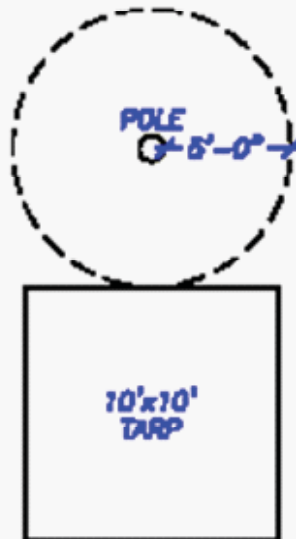
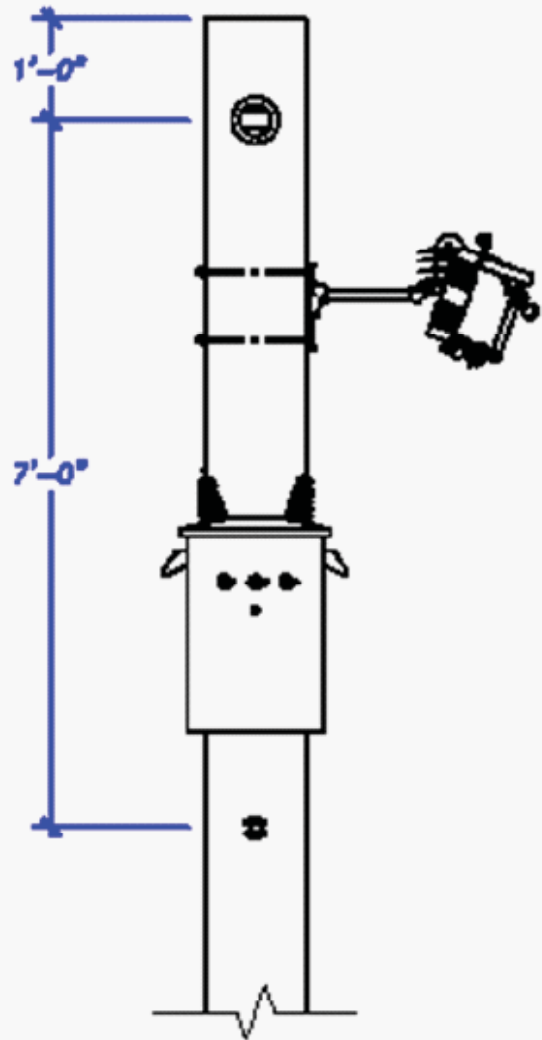
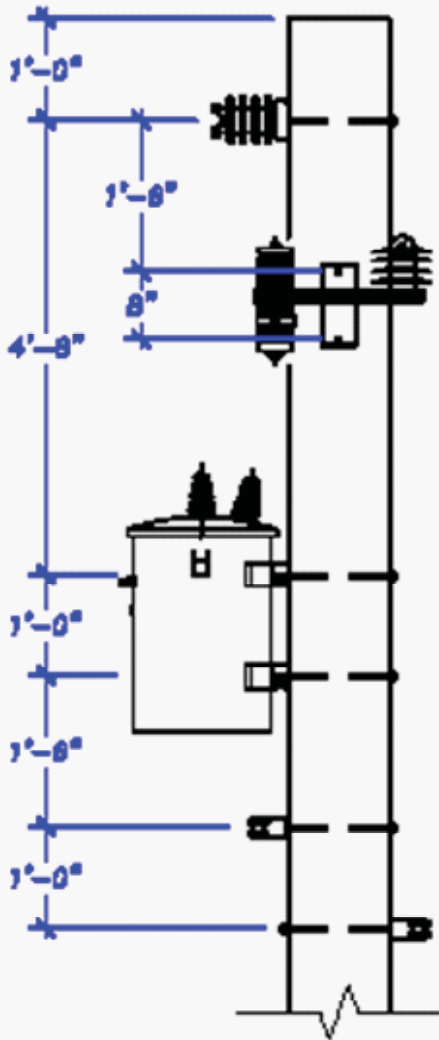
1. Time starts at judges signal with all team members at least an arm's length from pole and extendo stick.
2. All rubber gloves will be in glove bag cuffs down with no fingers protruding.
3. Lineman's belt and hooks will be on the ground opposite the switch side of the pole.
4. Extendo stick will be lying flat on tarp fully retracted.
5. All three team members must be used. One must climb, one must open switch, and one must tag the mannequin.
6. Time will stop when mannequin is on the tarp with slack on the handline, and extendo stick is fully retracted and back on tarp.
7. Climber will stay on pole and help hang mannequin.
8. Team will close switch back after time stops. Any team member can close it back and work gloves can be used.
9. You must use the eye to open and close switch.
10. When time starts extendo stick will be lying flat on tarp and must be back on tarp fully retracted before time will stop.
11. Climber must stay in 5 foot circle while he has his gaffs on.
12. Rubber gloves or work gloves must be worn anytime you are working or handling tools and equipment.
13. You must cut the Bashlin 57-A insert. There will be a 10 point deduction for cutting the belt in the wrong place
14. The blade of the climber's knife must not be exposed while climbing.
15. Judges will use a 4" PVC conduit between the rope and the mannequin to evaluate the rope knot, the eye splice cannot be in any part of the knot.
16. You may use any standard knot or hitch on the mannequin's legs that can be easily removed, including placing the rope through the hook, but it must not come off.

Teams will provide their own:

Extendo stick

Journeyman Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



APPRENTICE EVENTS

Apprentice Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



OPEN / CLOSE (NO LOAD) DISCONNECT

Mean Time: 5 minutes

Drop Dead Time: 9 minutes

Event Summary

Apprentice will be opening one cut-out and closing another. Jumpers will be either removed or installed.

Event Specifics

1. See General Rules
2. Apprentice will be allowed a 5-minute setup time before starting the event
3. Hardhat, safety glasses and leather gauntlet gloves are required (this is a non-rubber glove event).
4. Time starts when first hook strikes the pole.
5. Apprentice will provide their own hand-line.
6. Apprentice will execute event as describe in the even information on page #3).
7. Time stops when last piece of cover in placed in the long bag.
 - a. Apprentice will reassemble any portion of the event that is not correct so the event will be ready for the next contestant.
8. Judging will continue until the apprentice reaches the ground.

JUDGES WILL LOOK FOR THE OPENING TO DROP LOAD AND CLOSING TO PICK UP LOAD VIA DISCONNECTS

Apprentices will provide their own:

Hand-line or working line

1- Long bag

2 -Line hose soft or rigid (5' minimum length)

1-8' shotgun stick

Hand tools (tools need to refuse the fuse barrel should the barrel be dropped and the fuse broken)

Event Layout

- 8' wood arm
- 2 phase construction (phases will be on each end of arm on arm pin assembly as determined by GRU standards)
- 6' neutral on a clevis
- 2-200 amp cut-outs w/arrestors on arm
- 1-100 amp barrel fused w/3T fuse
- 4-stirrups (bell size TBD by GRU)
- 4- #8-4/0 hot line clamps
- #4 solid covered copper will be used, insulation will be removed as needed to facilitate grounding of jumpers

Apprentice Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



Contestant will carry a hand-line, hand-line must be carried on a break-away (hand-line: *a working line or a running hand-line in a hand-line block*)

Incidental contact with the neutral is anticipated during the hoisting and catching off of the long bag. Long bag must be caught off above the neutral. Line hoses and shotgun stick are to be in the long bag

Contestant must cover the neutral on both sides of the pole

Contestant will open and close the disconnects using an 8' shotgun stick

Event

Apprentice will be opening one cut-out and closing another. The closed cut-out will be opened and both jumpers will be lifted from the stirrups and grounded down to the ground wire attached to the bottom of the arrestor (AVOID CONTACT WITH GROUNDED JUMPER AND PHASE). The jumpers on the open cut-out will be lifted from the ground on the bottom of the arrestor and made up on the stirrups. Only one fuse barrel will be used in this event, it must be transferred from one cut-out to the other.

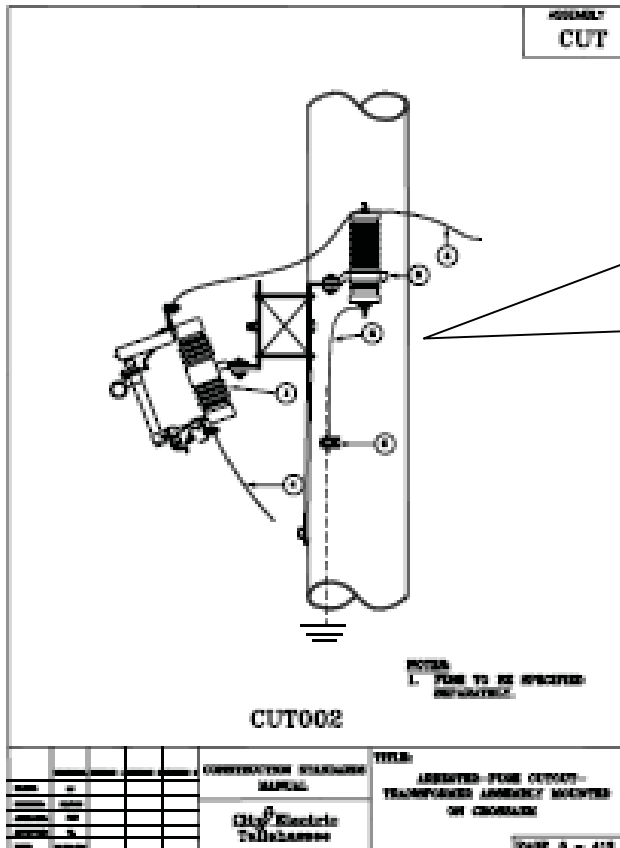
1. Contestant will climb to working position and tie off hand-line above the neutral
2. Hoist bag in to position and catch at or above the neutral
3. Cover neutral
4. Open the closed disconnect with shotgun stick, remove jumpers from the top and bottom of the cut-out from stirrups and ground each down to ground wire on the bottom of the arrestor
5. Remove jumpers from bottom of the arrestor and make up on the stirrups, close disconnect with shotgun stick
6. Place shotgun stick and line hoses in long bag
 - a. Time stops when the last piece of cover is placed in the long bag Apprentice will make right any portion of the event that is not correct so the event will be ready for the next contestant
7. Judging will continue until the apprentice reaches the ground
 - a. Apprentice will send the bag to the ground, railroad hand-line block. Holler headache, drop out line and climb to the ground after the hand-line block reaches the ground.

Note

- Judge will hook bag to hand-line if it comes unhooked w/no penalty (2-point deduct if bag comes unhooked and falls or if it is dropped)
- Judge will put fuse barrel on hand-line if needed w/penalty (2-point deduct, a 3T fuse, in package, will be sent with the fuse barrel if needed)
- Grounded jumpers must be shaped and formed so they are not in the area between the cutout & arrestor assembly and the arm pin assembly

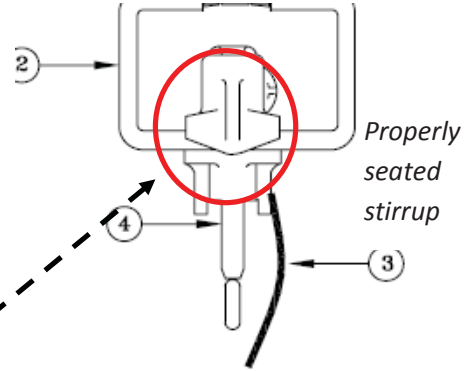
Apprentice Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



SIDE VIEW:
Ground wire will be attached to the bottom of the cross arm using staples. A loop will be left so the jumpers can be attached to the ground wire

NOTE:
Jumper coming from the bottom of the cut-out will come in front of the cut-out and attached to the phase on a stirrup



Two Point Deductions:

- Not covering neutral
 - Hot line clamps not properly seated to stirrup (2-points each)
 - Dropping of any materials
 - Dropping or picking up load by means other than barrel i.e., lifting or placing of jumper with fuse barrel closed

10 Point Deduction:

- Contact with grounded jumper and phase

Arguing with judge:

- DQ (discussion ok)



BELT HOOK/BREAK-AWAY is nonconductive yellow nylon hand-line belt hook that will bend or break if suddenly pulled.

<http://www.westernsafety.com/salisburyelectrical/salisburyelectricpg12.html>

*other brands may be used, no home made products allowed!

Apprentice Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



FUSE CHANGE OUT

Mean Time: 10 minutes

Drop Dead Time: 12 minutes

Event Summary

This event will be simulated energized at 12kV. The apprentice will be required to climb a 35ft pole. The apprentice must open and remove all three fuse barrels from the arm mounted cut-outs and replace the fuses. The fuse barrels will be returned back to the cut-outs and closed. A switch stick will be hanging on a D. A. bolt at left end of the arm, outside of the single cut-out. This is the only place the switch stick may be hung during, and/or after the event. There will be two cut-outs mounted on the right side of the cross-arm.

Event Specifics

1. Apprentice will have 5 minutes to set-up.
2. Time starts at the judge's signal.
3. Apprentice will ascend pole with the new fuse in your nut bag.
4. Class II or higher rubber gloves must be worn ground to ground
5. The NESC minimum approach distance of 2'1" must be maintained from any energized part.
6. When new fuses are installed, the extra fuse wire must be trimmed.
7. Time stops when both feet are on the ground.

Apprentice Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



VERTICAL HURTMAN RESCUE

Mean Time: 5 minutes

Drop Dead Time: 9 minutes

Event Summary

The apprentice will be given 5 minutes to set up and ask questions. The apprentice must open the switch (cutout) before he can step onto the pole. The switch will be opened from the ground using an extendo stick and rubber gloves. The stick must be off the ground and body anytime the stick is touching anything energized. The apprentice must wear rubber gloves ground to ground. Apprentice will split handline and loop bottom part of handline around mannequin's legs. Then take the top part and wrap around the pole a minimum of one and a half wraps, take rope under mannequin's arms and tie three half hitches (the splice cannot be in the knot). The mannequin can then be lowered to the ground while the groundman (provided) uses the bottom part of rope tied to the mannequin's legs to pull the mannequin out away from the pole and hardware. An attempt must be made to keep the mannequin off of the pole and other hardware. However, the mannequin can touch the pole, service, or the neutral on the way down with no deductions. The groundman is not judged in this event. The mannequin must hit the ground gently as if it were a real person.

* Video will be posted on www.publicpower.com under the Competition section on how to do this event.

Event Specifics

Apprentice Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



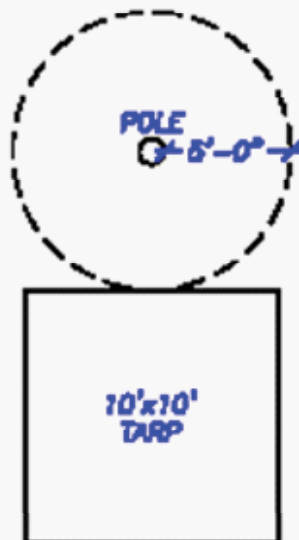
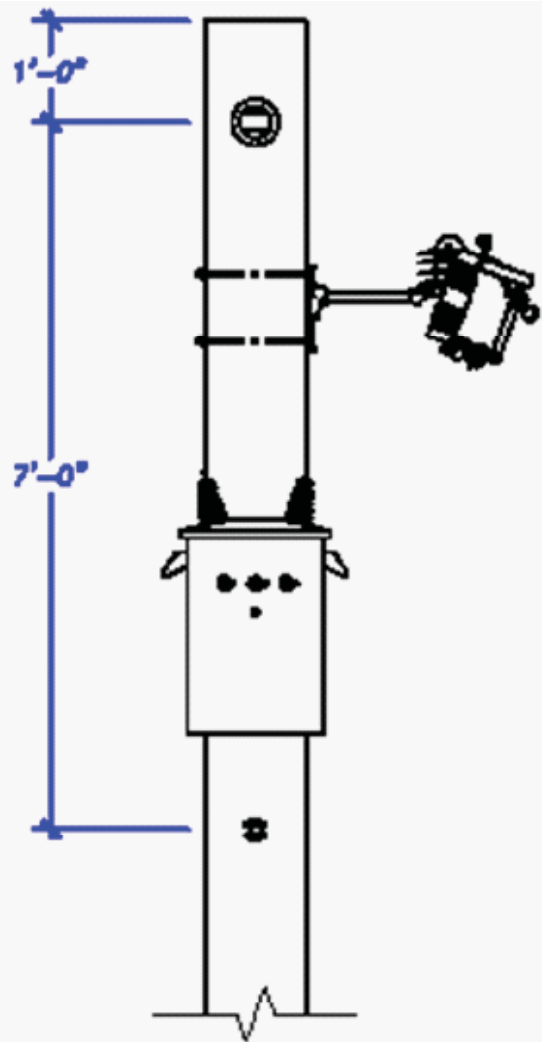
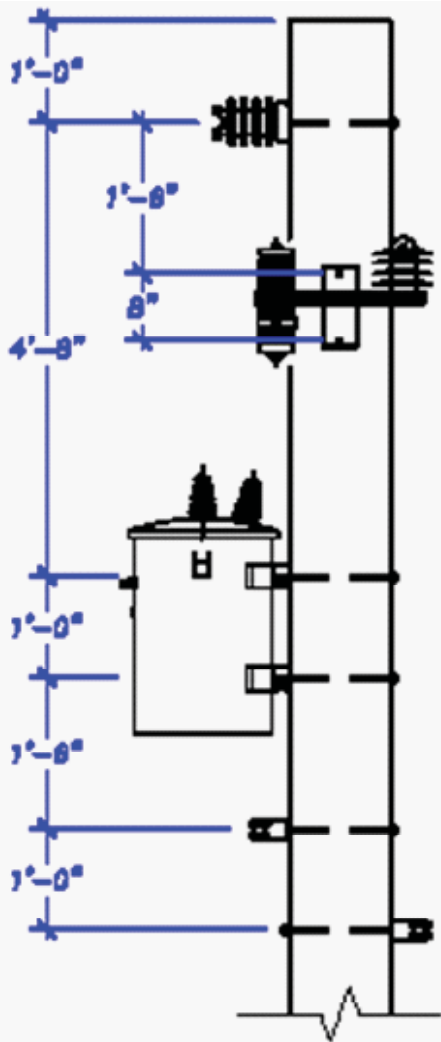
1. Time starts at judge's signal with Apprentice at least an arm's length from extendo stick.
2. Rubber gloves will be in glove bag cuffs down with no fingers protruding.
3. Lineman's belt and hooks will be on the ground opposite the switch side of the pole.
4. Extendo stick will be lying flat on tarp and fully retracted.
5. Time will stop when mannequin is on the ground with slack on the handline.
6. Apprentice will stay on pole and help hang mannequin.
7. Apprentice will close switch back after time stops. Work gloves can be used.
8. You must use the eye to open and close switch.
9. When time starts extendo stick will be lying flat on tarp and must be back on tarp fully retracted before time will stop.
10. Apprentice must stay in 5 foot circle while he has his gaffs on.
11. Rubber gloves or work gloves must be worn anytime you are working or handling tools and equipment.
12. You must cut the Bashlin 57-A insert. There will be a 10 point deduction for cutting the belt in the wrong place
13. The blade of the Apprentice knife must not be exposed while climbing.
14. Judges will use a 4" PVC conduit between the rope and the mannequin to evaluate the rope knot, the eye splice cannot be in any part of the knot.
15. You may use any standard knot or hitch around the mannequin's legs that can be easily removed. (including placing the rope through the hook, but it must not come off)
16. The Apprentice must open switch before putting gaffs on.

Apprentices will provide their own:

Extendo Stick

Journeyman Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



Apprentice Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



SECONDARY WEATHER HEAD AND MAKE CONNECTIONS

Mean Time: 5 minutes

Drop Dead Time: 8 minutes

Event Summary

The Apprentice will climb up and install a weather head on a conductor and secured it on the pipe.

Event Specifics

1. There will be a 5-minute set-up time.
2. Make a rain loop in conductor before connections are made to over head secondary cable.
3. The neutral will be made up first and then the hot legs will be made up in any order.
4. The time will stop when the last hot leg connection is completed.
5. Judging will continue until all connections are disassembled, the stripped ends of the dip cable cut off, extra cable pulled to mark on pole and the apprentice climbs safely to ground.
6. The dip wire size is 1/0 hot legs and # 2 neutral and 1/0 over head service cable.

Apprentices will provide their own:

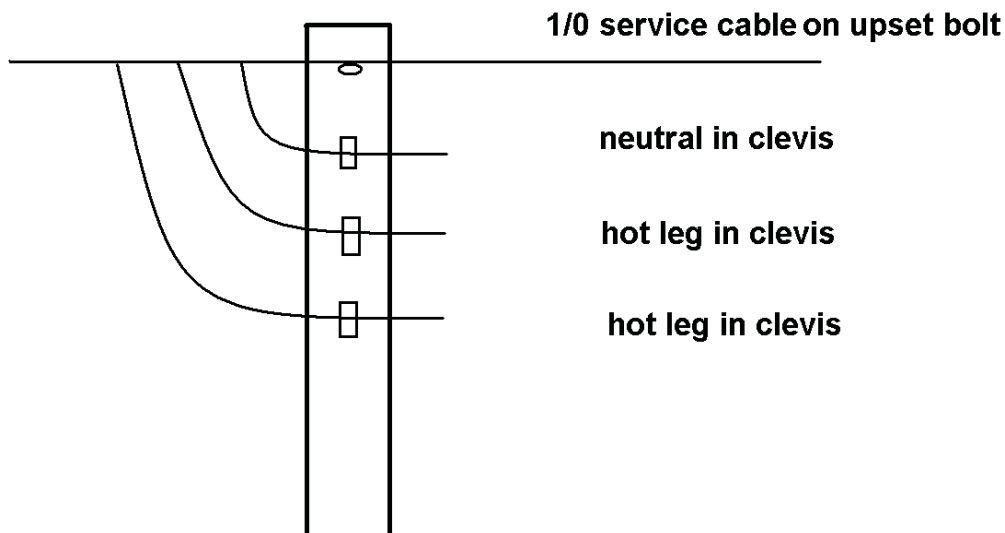
Hand-line

9/16 wrench

Flat headed screw driver

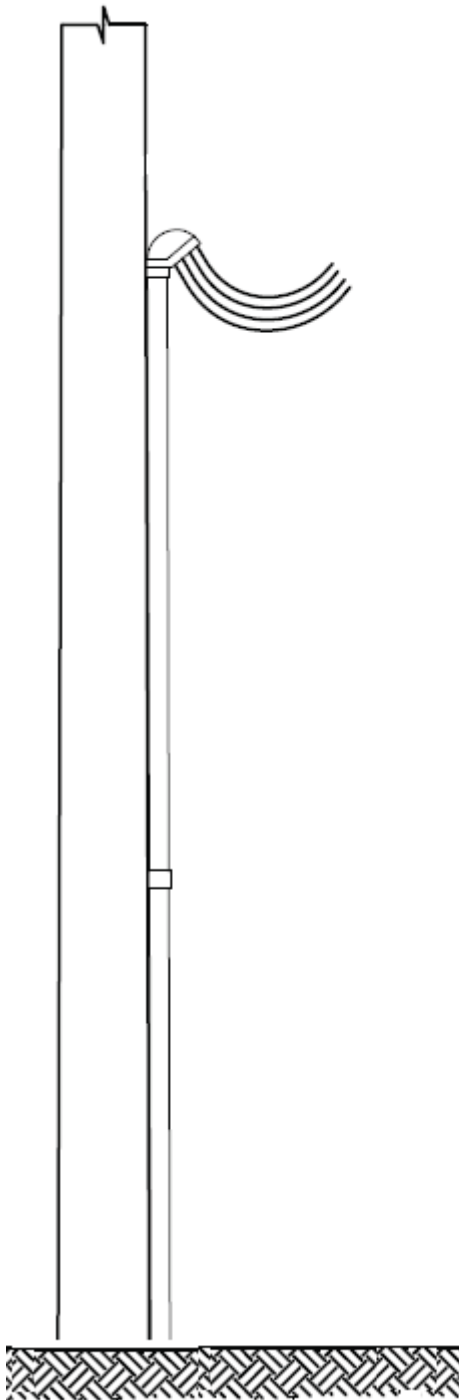
Grunt bag

Cable cutters



Apprentice Events

FMEA 12th Annual Florida Lineman Competition • March 30-31 • Gainesville, FL



**weather head is 18" below
bottom clevis**