

Journeyman Team Events

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FMEA • 14th Annual Florida Lineman Competition • March 28-29, 2014 • Ocala, FL



4kV CROSS ARM CHANGE-OUT

Mean Time: 8 minutes

Drop Dead: 10 minutes

Event Summary

The two phase conductors (#2 AAAC) are considered energized at 4kV. The existing fiberglass crossarm and insulators must be replaced. A complete set of all necessary hardware will be available on the ground at each event pole. The new crossarm and insulators will be assembled after time starts. Lineman will replace existing crossarm with new equipment and re-secure conductors with new wrap-lock ties. All insulators must be removed from arm with the nut/square washers back on the stud bolts before the 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.
3. Time starts at the judge's signal.
4. The new crossarm will be made up after the event starts.
5. Linemen may assist the groundman with rigging the new cross arm but will not be allowed to wear climbing tools while assisting without gaff guards on.
6. Climbers must wear class II or higher rated rubber gloves ground to ground.
7. Neutral and clevis must be covered with rated cover before ascending above.
8. Crossarm must be covered while the ties are being removed and installed. One lineman must control the conductor while the other ties and unties.
9. Conductors can be floated as long as they are covered properly to protect from incidental contact.
10. Conductors are secured on a porcelain insulator with #2 AAAC wrap lock ties. (Screwdriver may be used to remove wrap lock ties, no knives or pliers)
11. 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)
12. The old rubber grommet may fall to the ground; the new one must be installed.
13. Time stops when both Linemen are back on the ground.
14. The crossarm and insulators must be broken down before leaving the event area and will not have to be done during the event time.

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12kV SINGLE PHASE POLE

TRANSFER

Mean time: 12 minutes

Drop Dead: 15 minutes

Event Summary

The Team will frame a new pole and transfer primary and neutral. Hot sticks must be used to perform this 12kV event. Teams will supply their own hot stick tools to perform this event. The primary conductor is tied in with a “Hot” tie and when complete (6 wraps minimum) the loops will be on top. Neutral will be hand tied on a spool bolt.

Event Specifics

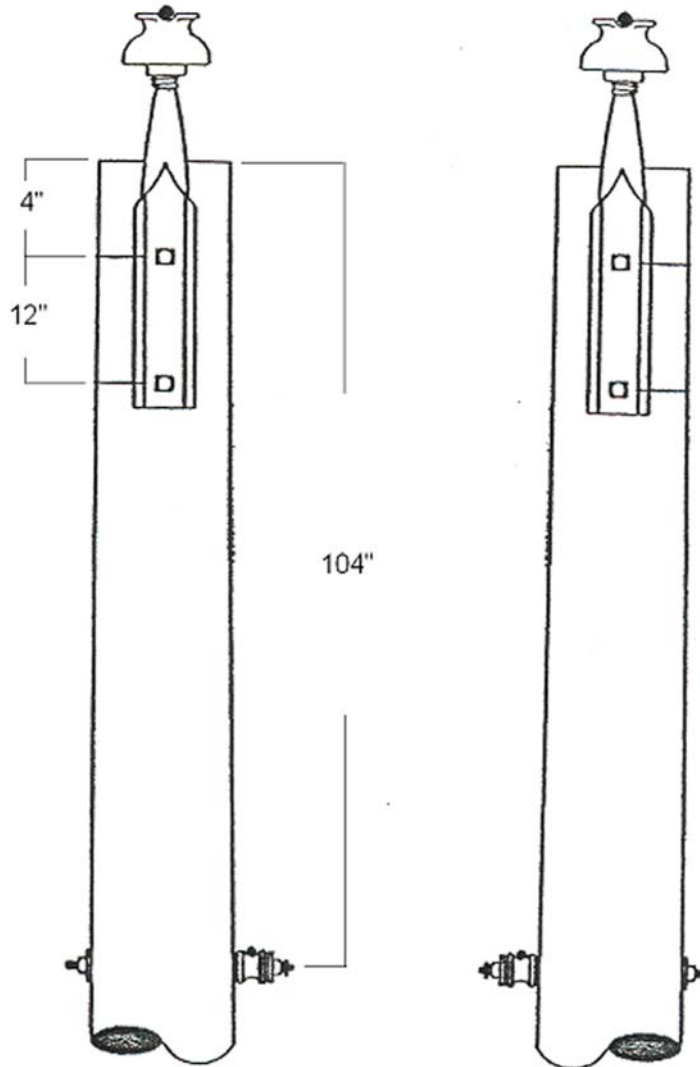
1. The Team is allowed a 5-minute setup time before starting the event.
2. Hot- tie may be made up during 5 minute set-up time.
3. Climbers must wear class II or higher rated rubber gloves ground to ground.
4. Time starts at the judge’s signal.
5. Neutral and spool must be covered with rated cover before ascending above it.
6. The Team will use at least 1 set of blocks or the hand line (controlled by ground-man) to move the conductor once it is secured in the hot sticks.
7. Two positive points of control, other than a lineman’s strength must be used to control the phase during this event.
8. Minimum approach distance must be maintained, primary must be covered with rated cover during framing new pole and stripping out old pole.
9. Time stops after both linemen are on the ground.

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12kV SINGLE PHASE POLE TRANSFER



Above is a view of how one of the stations will look before the start of the event. If the station is built as the left drawing or the right drawing, the other pole must be framed as shown. Once primary and neutral have been transferred to the new pole, the old pole must be stripped out. Poles will be set approximately 4 feet apart.

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35kV BELL REPLACEMENT

Mean time: 15 minutes

Drop Dead: 20 minutes

Event Summary:

The Team will replace a set of 35kV suspension bells on the bottom crossarm of a transmission structure. Hot sticks must be used to perform this event.

*****NOTE*** The top cross arm and conductor will not be present.**

Event Specifics:

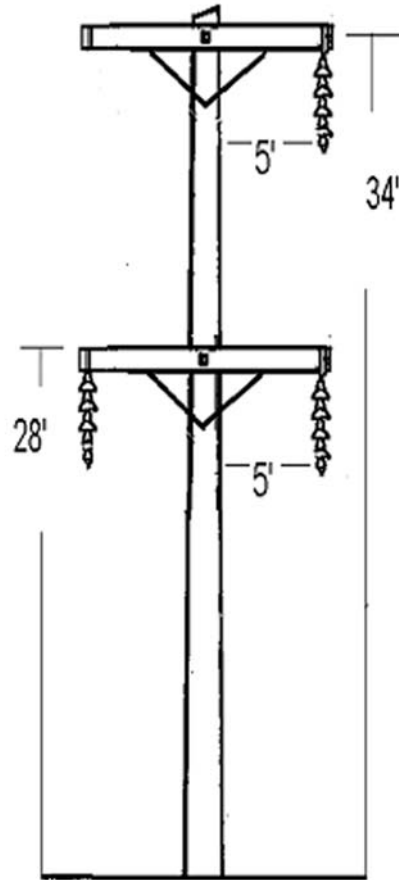
1. The Team is allowed a 5-minute setup time before starting the event.
2. Time starts at the Judge's signal.
3. Both sides of both phases must be covered before working on.
4. Hard cover must at least be slid up to the suspension shoe.
5. Minimum approach distance must be maintained on 35 kV (2'-7").
6. Two positive points of control, other than a lineman's strength must be used to control the phase during this event.
7. The Team may use blocks, hand lines and 2 wire tongs to move the conductor out of minimum approach distance before replacing bells.
8. Bells must be sent to the ground and replaced with new set.
9. Time stops when both Linemen are back on the ground.

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35kV BELL REPLACEMENT



A shotgun stick should be all that is required to unhook the bells from the shoe. However, you may use the hotstick attachment of your choice. The hook has a Hotstick ring welded on it. You can get a slip hook from the hardware store and weld a $\frac{3}{4}$ lock washer on it to practice with. This will eliminate the need to purchase any special Hotstick attachments.

List of Materials

- | | |
|----------------------------|-----------------------------------|
| 2 – 10' Heavy Arms | 4 – $\frac{1}{2}$ " Machine Bolts |
| 2 – 60" Steel Bow Braces | 3 – $\frac{5}{8}$ " Eye Bolts |
| 12 – 10" Bells | 4 – $\frac{5}{8}$ " Machine Bolts |
| 1 Slip Hook w/ Welded Ring | 3 – Suspension Shoes |

General Information

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CLIP-IN RUNNING ANGLE

Mean time: 10 minutes

Drop Dead: 12 minutes

Event Summary

The Team will install a line guard on a 1/O aluminum primary conductor and clip into an angle shoe on a suspension bell. The conductor will be in a roller below the suspension bell and will be secured to the pole by a collar rope. The line will be considered de-energized and must be grounded prior to ascending above the neutral.

Event Specifics

1. The Team is allowed a 5-minute setup time before starting the event.
2. Time starts at the Judge's signal.
3. Primary must be grounded on both sides of the work zone.
4. Line guards must be installed while the conductor is in the roller.
5. Time stops when both Linemen are below the neutral, grounds removed and sent to the ground.
6. The team will remove the line guard and lay the conductor back in the roller. Judging will continue until the event is put back to original setup.
7. Class II Rubber gloves will be worn on the pole at all times.
8. All tools and equipment when not in use must remain on the tarp during the event.

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VERTICAL HURTMAN RESCUE

Mean time: 4 minutes/Drop Dead: 8 minutes

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 onto 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 entire body on the tarp provided, and must hit the ground gently as if it were a real person. A 10-foot by 10-foot tarp will be provided and placed five feet from pole, centered under switch.

* An instructional video for this event will be posted on www.publicpower.com under the Competition section.

Event Specifications

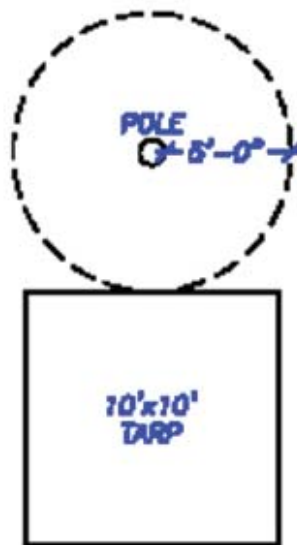
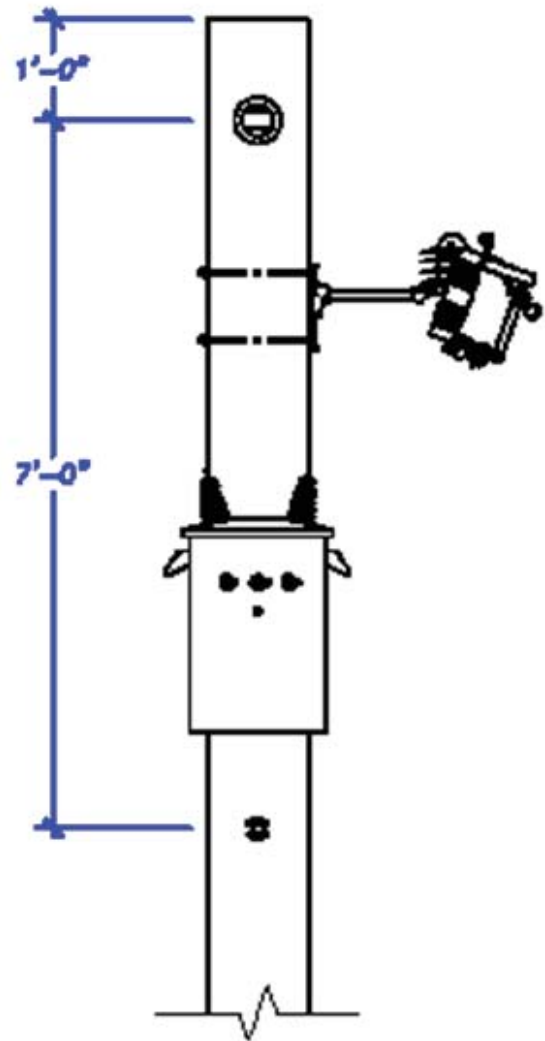
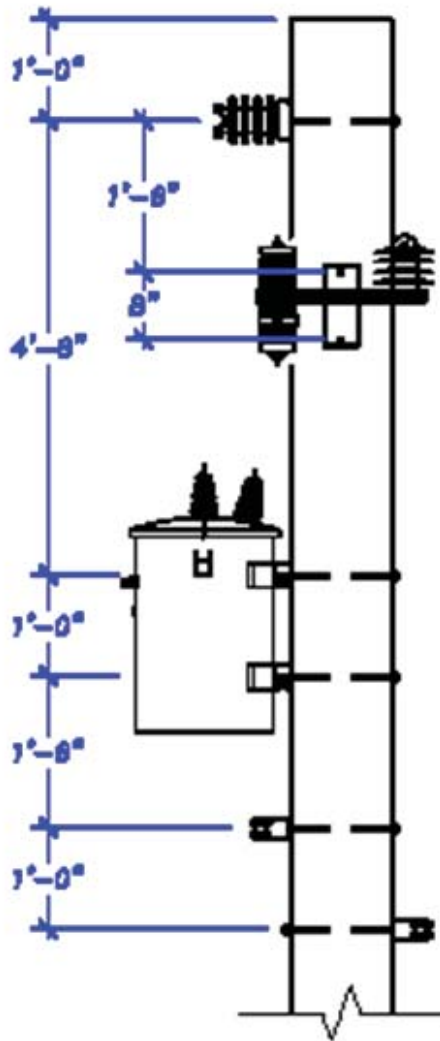
1. Time starts at judge's signal with all team members at least an arm's length from pole and extendo stick.
2. All rubber gloves will be in glove bag, cuffs down, with no fingers protruding.
3. Lineman's belt and hooks will be on the ground opposite the switch side of the pole.
4. Extendo stick will be lying flat on tarp fully retracted.
5. All three team members must participate. 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 the tarp.
7. Climber will stay on the pole to help hang the mannequin.
8. Team will close switch back after time stops. Any team member can close it back and work gloves can be used.
9. The eye must be used 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 five-foot circle while gaffs are on.
12. Rubber gloves or work gloves must be worn at all time while working or handling tools and equipment.
13. A team member 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 four-inch 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. Any easily removable standard knot or hitch may be used on the mannequin's legs (including placing the rope through the hook, but it must not come off).

Teams will provide their own:

Extendo Stick

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Apprentice Events

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A.G.S. INSTALLATION

Mean Time: 12 minutes

Drop Dead: 15 minutes

Event Summary:

The Apprentice will remove 336 AAC conductor from traveler and properly install “Armor Grip Support” and secure to an insulator at the top of a 40’ wood pole.

Event Specifics:

1. The Apprentice is permitted to ask any questions and put on his/her tools during the 5 minute set up time.
2. The Apprentice will adhere to the General Rules as outlined in the packet.
3. A new AGS unit and rod will be located at each station; A new rod will be used for each competitor
4. The time will start when the Apprentice first ascends the pole.
5. The Apprentice must carry a hand line with them in order to pull up the materials needed to secure the wire.
6. The materials must come up and down in a bag.
7. The Apprentice will remove the conductor, install the AGS and secure the assembly in the insulator.
8. If a rod is bent during application so that it can not be properly installed, the rod shall be left out and 2 points will be deducted. Rods must be centered with less than ¼” deviation of any strand toward the end out on the line.
9. Time will stop when the Apprentice is satisfied that the conductor has been properly installed and informs the judge he/she is finished.
10. The Apprentice will disassemble the parts and place them back in the bag and lower it to the ground. The Apprentice must railroad the hand line and make it up once he/she has reached the ground.
11. The old armor rods must be discarded and replaced with new ones before leaving the event area. The Judge will have new rods to give to the Apprentice.
12. Though the time has stopped the Apprentice will still be judged during the time of putting the event back in order for the next competitor.

A.G.S. INSTALLATION

APPLICATION PROCEDURE & SAFETY CONSIDERATIONS

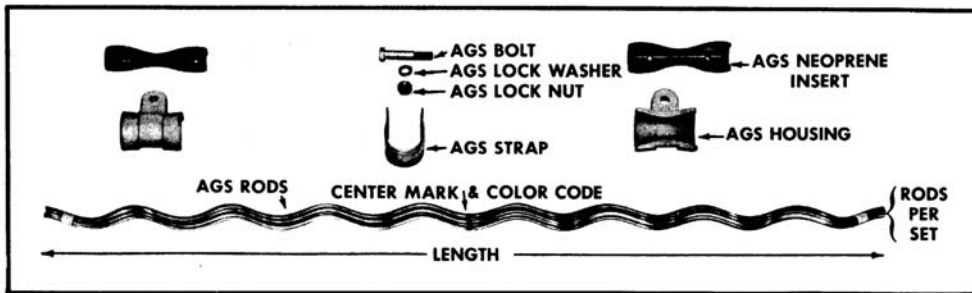


PREFORMED LINE PRODUCTS

ARMOR-GRIP. Suspension

NOVEMBER 1996

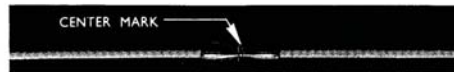
Completely read and understand this procedure before applying product. Special attention should be given to the Safety Considerations located on the last page. We advise the reader to review those considerations now, and then again during the general review of this procedure.



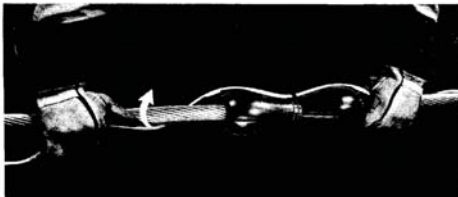
1. ARMOR-GRIP Suspension nomenclature.



2. Plumb insulator string and mark conductor at center of sheave. Use felt marking pen or lumber crayon; do not scratch conductor. Lift the conductor beyond the ends of the rods to allow enough clearance for the application.

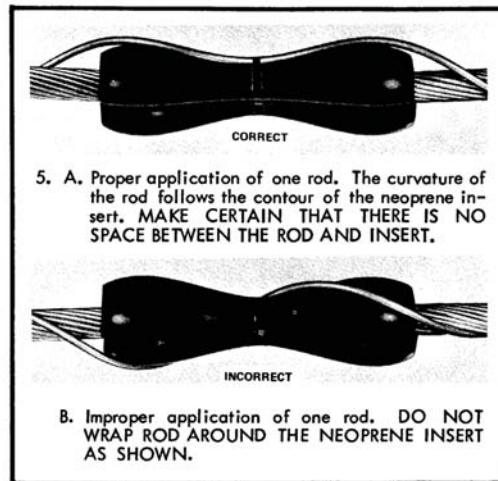


3. Align center marks of AGS Neoprene Inserts with center mark on conductor and tape in place with a thin layer of tape.



4. Center the AGS Rod on the insert. Apply sufficient length of rod (approximately two wraps) so that it will stay on the conductor.

DO NOT DISTORT RODS.



6. Apply all remaining rods evenly around neoprene insert. **MAKE SURE THAT NO RODS ARE CROSSED.** Each AGS Rod can be applied completely, or all rods can be applied partially as shown above. Make sure that all rod ends are snapped into place.

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(see other side)

Apprentice Events

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BRACE AND BIT

Mean time: 12 minutes

Drop Dead: 15 minutes

Event Summary:

Apprentice will drill two holes with a brace and bit using a standard 13/16 bit on a wooden pole for installation of hardware provided. Holes will be drilled from front side and bracket shall be mounted on opposite side using (2) 5/8 machine bolts and washers. Assorted material must be made up on the provided bracket.

*****Note***Material to be rigged will not be revealed until the day of registration.**

Event Specifics:

1. Apprentice will be allowed a 5 minute setup time before starting the event. During this time the apprentice may ask the event judge questions.
2. Apprentice shall bring their own Brace & Bit.
3. Work gloves (Leather style with gauntlets) shall be worn at all times.
4. Time will begin at the Judges signal and no material will be made up prior to the start time.
5. Apprentice will begin the event by first rigging material on the bracket then step onto the pole above a mark at 36" to drill and mount hardware. You will be drilling on one side and mounting on the opposite side of the pole. Rigging may be done with climbing tools on as long as gaff guards are in place.
6. Apprentice will step down to drop off the Brace & Bit and pick up the bracket to mount on the pole. Bolts may be put into their diddy bag.
7. Time will end when the Apprentice mounts the hardware and has both feet on the ground.
8. Upon completion the Apprentice shall break down the event completely and return the material to where it was prior to the start of the event.
9. Judging will continue until the event is fully broken down.

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H-FRAME CROSSOVER

Mean time: 3 minutes

Drop Dead: 5 minutes

Event Summary:

Apprentice will ascend an H-frame structure constructed with (2) 40' wood poles set 10' apart and a 6"x6"x16' wood beam between them. There will be a guy wire 6" from the top of the pole and secured between the two poles. The cross arm will be 72" below the guy wire. The Apprentice must ascend either pole of their choice, crossover and descend the opposite pole.

Event Specifics:

1. Apprentices are allowed a 5 minute setup time before starting the event. During this time the apprentice may ask the event judge questions.
2. Leather gloves shall be used for this entire event.
3. Time will begin at the Judges signal.
4. Apprentices must be safetied at all times. The use of a double safety or a fall arrest system shall be used to transition above and below the cross arm.
5. When the Apprentice is over the cross arm they must slide their safety over the pole and onto the guy wire to crossover to the opposite pole.
6. Time stops when the apprentice has both feet on the ground.

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LOADBUST TOOL OPERATION

Mean time: 5 minutes

Drop Dead: 8 minutes

Event Summary:

Apprentices will ascend a 40' wood pole and open a single cutout with a loadbust tool. Once opened the Apprentice will remove the fuse tube with a switch stick, replace the fuse, and close the cutout.

*****Note***** Apprentices are required to climb with a fall arrest system. There will be a system provided for each station. You are permitted to bring your own.

Event Specifics:

1. Apprentice will be allowed a 5 minute setup time before starting the event. During this time the apprentice may ask the event judge questions.
2. Class 2 rated rubber gloves or higher shall be worn from ground to ground. Leather gloves are permitted during setup.
3. Time will begin at the Judges signal.
4. Fall arrest will be allowed to be hooked to the pole prior to start and must be used properly.
5. Apprentice must carry their handline and secure to the pole at their work zone prior to opening the cutout.
6. A bag will be hanging on the pole at the neutral conductor 72" below the bottom bolt of the cutout bracket. It will be on the opposite side of the pole from the cutout. The loadbust tool mounted to a hotstick and a switchstick will stay in the bag on the pole.
7. Apprentice must test that the loadbust tool is properly set before attempting to open the cutout.
8. Apprentice will be permitted to carry the new fuse up in their diddy bag.
9. Time stops when the apprentice has both feet on the ground.

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VERTICAL HURTMAN RESCUE

Mean time: 5 minutes

Drop Dead: 9 minutes

Event Summary:

This is an individual Apprentice event where the assistance will be needed by a Groundman. The Apprentice may bring someone to be a Groundman for them or one will be provided by the event staff. The Groundman must use the proper PPE while assisting (i.e. Leather work gloves, hard hat, and eye protection). The Apprentice WILL NOT be judged on anything that is the result of the Groundman's actions. The Apprentice will have 5 minutes to set up and ask questions. The switch (cutout) feeding the transformer will be opened prior to the start of the event and be simulated that the transformer is de-energized. The Apprentice must wear rubber gloves ground to ground to protect from possible backfeed. The Apprentice will split the handline and loop the bottom part of handline around mannequin's legs. Then they must take the top part and wrap around the pole a minimum of one and a half wraps, run the rope under mannequin's arms, and tie three half hitches (the splice cannot be part of the knot). The mannequin will then be lowered to the ground while the Groundman uses the bottom part of handline tied to the mannequin's legs to pull mannequin on to the tarp. The Apprentice 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 or neutral conductor. The mannequin must hit the ground gently as if it were a real person. A 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 judge's signal with the Apprentice at least an arm's length from the pole.
2. All rubber gloves will be in glove bag cuffs down with no fingers protruding.
3. Apprentice's belt and hooks will be on the ground opposite the switch side of the pole.
4. When time starts the Apprentice will tool up and ascend the pole.
5. Climber must stay in 5 foot circle while he has his gaffs on.
6. You must cut the Bashlin 57-A insert. There will be a 10 point deduction for cutting the belt in the wrong place
7. The blade of the climber's knife must not be exposed while climbing.
8. Time will stop when mannequin is on the tarp with slack in the handline.
9. 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.
10. Apprentice 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)

NOTEThe actual field will be built to the specs on the drawing on the next page. There will not be any secondary conductors below the neutral.

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