

2024 - Transformer Changeout

Event: Simulated 4kV energized, rubber gloves required

Drop Dead Time: 30 Minutes

Event Summary:

Replace a bad transformer. This will be done on a 4kV structure. The linemen will climb the pole, disconnect the already determined bad transformer, lower it to the ground, reinstall the new transformer, reconnect all connections, reenergize the transformer and check the secondary voltage. The pole gin will already be installed. This is a team event requiring 2 climbers to perform the work on the pole.

General Information:

- The space between the pole gin lifting eye and the transformer lifting ears will be 48"
- Weight of transformer is 100 lbs

Event Description:

1. Teams will be given 5 minutes set up time for questions. Fall arrest must be properly adjusted and rubber gloves checked during this time.
2. Time starts on the judge's signal with fall arrest system attached to the pole.
3. The transformer has already been determined to be bad and the cut-out will be open with the barrel hanging in the down position.
4. Neutral and neutral hardware must be covered before ascending above.
5. The first climber must carry the hand line up the pole and secure it to the pole with a choker.
6. All material will go up and down via a hand line either properly secured to hand line or in a material bag.
7. The top cut out tap must be removed from the primary and secured.
8. The cut-out barrel (door) must be sent to the ground before work begins to change out the transformer and the fuse replaced in the barrel before sending it back up the pole.
9. Proper care must be taken to insulate from the potential of a secondary back-feed through the service.
10. The linemen need to avoid laying on, supporting themselves on, or allowing the lift line supporting the transformer to rub on the neutral. Incidental contact will not be a deduction.
11. A ~~rated manufacturer 2 to 3~~ *manufacturer rated* block & tackle must be used to lower and raise the transformer. The block & tackle can be of any brand or style the team chooses as long as it meets the guidelines and is not altered in any way.

12. The same transformer that is lowered to the ground will be used as the new transformer. The transformer will be lowered to ground and the sling used to support it removed from the hangers then the sling can be put back on the transformer and raised back up the pole for re-installation.
13. A 6' circle will be painted on the ground around the pole. No ground personnel shall be allowed in the circle for the lowering of the transformer from the time the block and tackle are connected to the transformer until the transformer touches the ground and for the raising of the transformer from the time the transformer leaves the ground until the block and tackle is disconnected from the transformer. Failure to adhere to this rule will result in a 10 point deduction.
14. The new transformer connections must be made up exactly as the old transformer was wired (the case ground lug, the 3 secondary connections to the transformer, the bottom cut out tap to transformer, the top cutout tap to primary)
15. Once all connections are made the barrel can be re-installed in the cut-out. The barrel can be closed by either lineman with a hotstick as long as both are saftied off below the transformer brackets.
16. Voltage must be checked at the transformer fronts, and time will stop when the proper voltage is called out.
17. After time stops the barrel must be opened and left hanging in the cutout. The team must return the event to how it was when they arrived.
18. Judging will start when participants enter the event and continue until they exit the event. You are required and responsible to sign your score sheet. Once the score sheet has been signed and the team leaves the event the score is final and ineligible for appeal.
19. All general rules apply.