



## **Transformer Banking**

### **Chief Judge: Mike Harper**

(Journeyman Event)

**Mean Time:** 12 minutes

**Drop Dead Time:** 18 minutes

#### **Event Summary:**

The team will be required to hook-up a 5 wire bank that can supply single-phase 120/240 and three-phase 120/208 secondary voltages with a 0-degree angular displacement. The pole will be three-phase straight line (C1) 12kV construction on an 8 ft. wooden cross-arm. However, this will be new construction with no possibility of becoming energized; leather gloves are acceptable.

#### **Event Specifications:**

1. #6 copper will be installed in the bottom of cut-outs and must be connected to H1 bushing; top of cut-outs will not be connected.
2. High-side neutral and case ground connections will be made from pre-installed #6 copper stapled to the pole.
3. Single phase service will be #2 bare aluminum under build.
4. Three phase service will be #1/0 quadraplex.
  - The hot-legs and neutral will already be cut to length
  - Pigtail compression sleeves (Blackburn PKL36-1) will be installed on the ends of the conductors. Total length of the connector will be 8 inches.
5. Three phase service will be #1/0 quadraplex with leads long enough to go to the transformer lugs.
6. For safety reasons, the leads will be tied back with a short piece of rope and a square knot. Before the team descends the pole, the wire must be tied back and secured with a square knot. The rope CANNOT fall to the ground or it will be a 2-point deduction.
7. All transformers will be additive polarity and must be wired according to manufacture recommendations.
8. The single-phase service will be connected to the center transformer and (3) multi-tap setscrew connectors (Blackburn - ABP440) will already be installed.
9. The windings of the appropriate transformers have already been stacked/paralleled according to manufacture recommendations.
10. The wire used for the single phase secondary connections and bank neutral will be #2 insulated aluminum and teams will use the Blackburn-#PAA6 connectors.
11. The phases will be marked on the crossarm.
  - A phase – Red
  - B phase – White
  - C phase – Blue
12. The three phase service will also be marked with phasing tape (ABC = Red, White, Blue). The teams must match the 3 phase service to the transformer connected to the appropriate primary phase.
13. Time will start at the judge's signal.
14. Time will stop when the team is satisfied the bank is wired correctly, all materials have been cleared from the handline, and a designated team member calls "TIME".
15. After time has stopped and the judge has looked at the wiring of the bank; teams will be required to return event to original condition.



16. Judging will continue until the team has returned the event to its original condition and exited the event area.

**Material provided:**

#2 insulated aluminum (30 ft.),

(5) Single bolt parallel connectors (Blackburn-#PAA6)