

# ESWPM Addendum 5 Rev. 000

## Callaway Energy Center Clarification for Establishing a De-Energized Electrically Safe Work Condition

### (Enhancement to Step 4.2.22 of the ESWPM Rev. 4)

- 1.0 A de-energized electrical safe work condition can be achieved when a circuit is verified de-energized using all of the following, as applicable:
  - 1.1 When possible, visually verify that all blades of the disconnecting device are fully open or withdrawn.
  - 1.2 Performing a Live Dead Live voltage test on circuit parts being worked on.
    - 1.2.1 The desire is to perform the Live-Dead-Live as close to the component to be worked on; however, if it is not feasible or performing a Live-Dead-Live presents additional safety hazards due to be in the arc flash gear that supports the voltage of the work then the circuit should be verified dead using a Live-Dead-Live check at the remote circuit location and a 'Test before Touch' as described in 2.0 below should be used at the electrical component.
    - 1.2.2 Explanation of how to perform a Live-Dead-Live Test:
      - 1.2.2.1 Don the appropriate PPE for the arc flash concern for which the Live-Dead-Live is being performed as required from Addendum 1
      - 1.2.2.2 Verify that the meter is on the appropriate scale and not on auto range or hold.
      - 1.2.2.3 Test the meter against a known voltage source to verify proper operation
      - 1.2.2.4 Test each phase of the circuit A phase to ground / B phase to ground / C phase to ground, and then test each phase to phase of the circuit A to B phase / B to C phase / C to A phase.
      - 1.2.2.5 Test the meter against a known voltage to re-verify that the meter is working properly.
      - 1.2.2.6 If there is a concern that DC voltage could be present then the meter should be placed in a mode to check DC voltage and steps 1.2.2.2 through 1.2.2.5 repeated.
  - 1.3 Where it could be reasonably anticipated that the conductors or circuit parts being de-energized could contact other exposed energized conductors, apply ground connecting devices rated for the available fault current.
  - 1.4 Follow the Callaway Energy Center WPA requirements of APA-ZZ-00310.
- 2.0 Explanation of how to perform a 'Test before Touch':
  - 2.1.1 After a Live-Dead-Live has been performed at a remote location (breaker cubicle, junction box, etc.) and due to a safety hazard at the component or circuit, a 'Test before Touch' should be performed at the component to ensure that the component or circuit is truly de-energized. No additional PPE except for normal PPE is required for performing a 'Test before Touch'.
  - 2.1.2 Technician who will be performing the work, using a proximity detector that has been properly verified to be functioning, check each phase of the wires coming to the circuit or component.
    - 2.1.2.1 Limitations of Proximity Detectors:
      - 2.1.2.1.1 Does not work with shielded cables
      - 2.1.2.1.2 Does not detect DC voltage.

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2.1.2.2 If any voltage is detected during the 'Test before Touch' then a Live-Dead-Live test will be required in proper PPE prior to continuance of work.