APPROACH DISTANCES TO EXPOSED ENERGIZED PARTS

NFPA 70E defines three (3) boundaries for electrical work. Two (2) boundaries are approach distances related to shock hazards and the third boundary is related to arc flash protection.

SHOCK PROTECTION BOUNDARIES

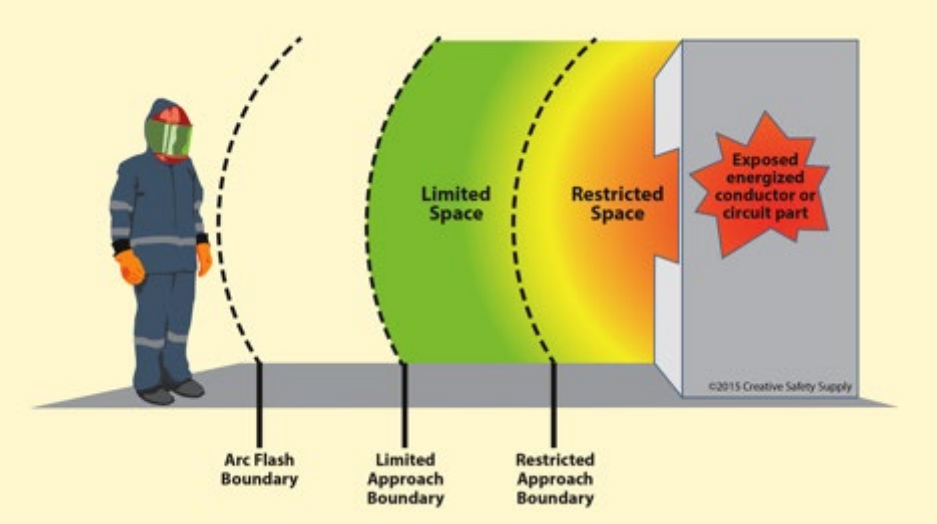
The distance for the limited and restricted approach boundaries are found in NFPA 70E tables 130.4(D)(a) and (b).

Within the **limited approach boundary**, unqualified persons must *not* be inside the boundary unless escorted by a Qualified Person and informed of potential safety hazards.

Within the **restricted approach boundary**, only a Qualified Person with proper PPE and tools may enter. Inside this boundary, accidental movement can put a part of the body or conductive tools in contact with live parts or inside the prohibited approach boundary.

To cross the restricted approach boundary, the Qualified Person must:

- Perform hazard identification and risk assessment.
- Complete an energized work plan and permit that is approved by the supervisor when performing work beyond testing and trouble shooting.
- Use PPE rated for working near exposed energized parts and rated for the voltage and energy level involved.
- Ensure that no part of the body enters the prohibited space.
- Minimize risks from unintended movement by keeping as much of the body as possible out of the restricted space (body parts in the restricted space should be protected).



ARC FLASH PROTECTION BOUNDARY

When interacting with electrical equipment within the Arc Flash Protection Boundary, protective equipment and measures are required.

The Qualified Person must:

- Determine if interaction meets the criteria for normal operation of electric equipment. A hazard identification assessment must be done with the arc flash hazard label and NFPA 70E Table 130.5(C) to provide guidance on assessing the likelihood of an arc flash occurrence. Arc-rated PPE may not be required for normal operation of electric equipment.
- If criteria for normal operation is not met, arc flash PPE is necessary to conduct work activities.
- Use PPE appropriate for working near exposed energized parts and rated for the voltage and energy level involved.

If an arc flash analysis has been performed, a Qualified Person can use the incident energy value on the arc flash analysis label and the arc flash hazard Table 130.5(G) to specify arc-rated clothing and other PPE.

When a system of 600 volts and less does not have an arc flash analysis performed and no incident energy levels listed, do the following:

- Use NFPA 70E Table 130.7(C)(15)(a) and/or Table 130.7(C)(15)(b) to determine the arc-flash PPE category.
- Use NFPA 70E Table 130.7(C)(15)(c) to choose the appropriate clothing and PPE.
- NFPA 70E Table 130.4(D)(a) and/or Table 130.5(D)(b) will provide the limited and restricted approach boundaries.

NFPA Table 130.7(C)(15)(a) and/or Table 130.7(C)(15)(b) will provide arc flash boundary distance, provided the equipment meets the maximum short circuit current and fault clearing time criteria in the tables.

Refer to the UW Electrical Safety Manual for more information.