### Task: INSTALLATION, ALTERATION, MAINTENANCE, OR REPAIR OF ELECTRICAL BREAKERS AND PANELS

#### Required PPE:
1. FR Clothing and tools that meet the provisions of NFPA 70E specifications: (Reference Table 1.30.7(C)(10)
2. Gloves (as appropriate for voltage)
3. Eye Protection or Face Shield (as appropriate for voltage)
4. Insulated Mats (as needed)
5. Insulated Tools

#### Required Training:
- NFPA 70E – Arc Flash Training
- Lockout/Tagout Training (LOTO)

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| Preparing to Access Electrical Panel | Injuries from the Impact of Doors Adjacent to the Panel or from Foot/Cart Traffic | - Post warning signs  
- Set-up barriers  
- Use an assistant |
|                             | Slips, Trips and Falls                       | - Clear the area surrounding access to the panel  
- Clean-up any hazards in the area of the panel |
|                             | Shock or Electrocution                       | - Wear all required FR rated clothing, eye/face protection, gloves, eye/face protection, etc  
- Lay down a non-conductive mat to avoid slippage |
| Remove the Outer Cover and Opening Dead Front | Foot or Hand Injury from Handling the Cover | - Obtain assistance with removing panel cover  
- Plan for the handling of the panel cover |
|                             | Muscle Strain                                | - Lift using the legs – use safe lifting techniques |
|                             | Shock or Electrocution                       | - Use all required PPE appropriate for voltage load  
- Watch the edges of the panel and be sure they do not touch the wires in the panel box  
- Use insulated mats (as needed) |
| Accessing and Working on Breaker(s) or Panel | Shock or Electrocution | - Ensure LOTO is completed – pre-test to ensure power has been disconnected |
|                             | Arc Flash Injuries including Burns           | - Use voltage appropriate PPE: FR clothing, eye/face protection, gloves, and insulated tools |
|                             | Injuries to Others                           | - Use signs, barricades, or cones to mark hazardous area  
- Ensure LOTO procedures are followed and tags are visible from 5-feet away |
| Reassembling Panel          | All Hazards previously listed, considering tasks are in reverse order | - Use care with panel locks to make sure they do not catch on any wires or other components while being replaced  
- Use all precautions and all PPE as required for voltage load |

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