### ELECTRICAL RISK ASSESSMENT FORM

#### 1. GENERAL
- **Date:**
- **Subcontractor:**
- **Qualified Personnel:**
- **Equipment:**
- **Location:**
- **Nominal System Voltage Range, Phase to Phase:**
- **Exposed Movable Conductor:**
- **Exposed Fixed Circuit Part:**

#### 2. TASK
- Reading a panel meter while operating a meter switch
- Normal operation of a circuit breaker (CB), switch, contactor, or starter
- Work on energized electrical conductors and circuit parts, including voltage testing
- Voltage testing on individual battery cells or individual multi-cell units
- Removal or installation of CBs or switches
- Removal or installation of covers for equipment such as wireways, junction boxes, and cable trays that does not expose bare energized electrical conductors and circuit parts
- Removal of bolted covers (to expose bare energized electrical conductors and circuit parts).
- Removal of battery intercell connector covers
- Opening hinged door(s) or cover(s) (to expose bare energized electrical conductors and circuit parts)
- Opening infrared thermography and other noncontact inspections outside the restricted approach boundary. This activity does not include opening of doors or covers.
- Application of temporary protective grounding equipment after voltage test
- Work on control circuits with exposed energized electrical conductors and circuit parts, 120 volts or below without any other exposed energized equipment over 120 V including opening of hinged covers to gain access
- Work on control circuits with exposed energized electrical conductors and circuit parts, greater than 120 V
- Insertion or removal of individual starter buckets from motor control center
- Insertion or removal (racking) of CBs or starters from cubicles, doors open or closed
- Insertion or removal of plug-in devices into or from busways
- Insulated cable examination with no manipulation of cable
- Insulated cable examination with manipulation of cable
- Work on exposed energized electrical conductors and circuit parts of equipment directly supplied by a panelboard or motor control center
- Insertion and removal of revenue meters
- For dc systems, insertion or removal of individual cells or multi-cell units of a battery system in an enclosure or open rack.
- For dc systems, maintenance on a single cell of a battery system or multi-cell units in an open rack
- For dc systems, work on exposed energized electrical conductors and circuit parts of utilization equipment directly supplied by a dc source
- Insertion or removal (racking) of CBs from cubicles
- Insertion or removal (racking) of ground and test device
- Insertion or removal (racking) of voltage transformers on or off the bus
- Opening voltage transformer or control power transformer compartments
- Outdoor disconnect switch operation (hookstick operated) at 1 kV through 15 kV
- Outdoor disconnect switch operation (gang-operated, from grade) at 1 kV through 15 kV
- Other Tasks, EXPLAIN:

#### 3. POTENTIAL ELECTRICAL HAZARDS
- Arc flash potential determined from NFPA 70E Table (C)(15)(A)(a)
- **Electrical shock**
- **Arc flash**

#### 4. POTENTIAL RISKS
- **Potential Severity of Injury or Damage to Health**
  - Irreversible — trauma, death
  - Permanent — skeletal damage, blindness, hearing loss, third degree burns
  - Reversible — minor impact, hearing damage, second degree burns
  - Reversible — minor laceration, bruises, first degree burns

- **Frequency of 10 Minute Exposures**
  - ≤ 1 per hour
  - > 1 per hour – 1 per day
  - 1 per day – 1 per week
  - 1 per 2 weeks – 1 per year
  - > 1 per year

- **Likelihood of Hazardous Event**
  - Very high
  - Likely
  - Possible
  - Rare
  - Negligible

- **Likelihood of Avoiding Injury**
  - Impossible
  - Rare
  - Probable

- **Protective Measures Already Established**
  - **Barriers**
  - **Signage**
  - **SOPs**
  - **Training**
  - **PPE**
  - **Other Controls, Explain**

#### 5. SHOCK APPROACH BOUNDARIES
  From NFPA 70E Table 130.4(D)(a) or (b)
- Restricted Approach Boundary (feet) =
- Limited Approach Boundary (feet) =

#### 6. ARC FLASH BOUNDARY
- From NFPA 70E Table 130.7(C)(15)(A)(b) or (B)
- Method for determining Arc Flash Boundary:
  - Arc Flash PPE Categories Method (from NFPA 70E Table 130.7(C)(15)(A)(b) or (B))
  - Incident Energy Analysis Method (select method and attach calculations)
    - Ralph Lee Calculation Method
    - Doughty Neal Calculation Method
    - Institute of Electrical and Electronics Engineers 1584 Calculation Method
    - Detailed Arcing Current and Energy Calculations Method
- Arc Flash Boundary (feet) =
- **PPE Category** =

#### 7. ARC FLASH PPE REQUIREMENTS
  From NFPA 70E Table 130.7(C)(16) or H.3(b)
- Protective Clothing and PPE:
- Protective Equipment: