Part I: To be completed by the Supervisor	
Description of Circuit & Equipment:	Job Location:
Description of Work to Be Done:	
Justification of why the circuit cannot be de-energized or the work delayed until the next scheduled outage:	

Name	***Title***	***Signature***	***Date***

Part II: To be completed by the qualified person(s) completing the work	**Check when Complete**
(1) Detailed description of procedure to be used in performing the above work:	
(2) Description of safe work practices to be employed:	
(3) Voltage exposure (shock hazard analysis):	
(4) Determination of shock protection boundaries:	
(5) Results of flash hazard analysis:	
(6) Determination of flash protection boundaries:	
(7) PPE required to safely perform the task:	
(8) Method used to restrict access to the work area:	

(9) Do you agree the above work can be done safely? YES (proceed to Part III) NO (return to requestor)
Qualified Person(s): _____ Date: _____

Qualified Person(s): _____ Date: _____

Qualified Person(s): _____ Date: _____

Part III: To be completed by members of Electrical Safety Committee

Approvals To Perform The Work While Electrically Energized:

Name	**Job Title**	**Date**
_____	_____	_____
_____	_____	_____
_____	_____	_____

Appendix B: Approach Boundaries for Live Parts Shock Protection

Nominal System Voltage (Phase to Phase)	**Limited Approach Boundary** *Exposed Movable Conductor*	**Limited Approach Boundary** *Exposed Fixed Circuit Part*	**Restricted Approach**	**Prohibited Approach Boundary**
Less than 50 Volts	Not Specified	Not Specified	Not Specified	Not Specified
50 Volts to 300 Volts	10 feet	3 feet 6 inches	Avoid Contact	Avoid Contact
301 Volts to 750 Volts	10 feet	3 feet 6 inches	1 foot	1 inch
751 Volts to 15 kilovolts	10 feet	5 feet	2 feet 2 inches	7 inches

- **Limited Approach Boundary:** Distance from an exposed live part within which a shock hazard exists. An unqualified employee may not cross this boundary unless they are continuously escorted by a qualified employee.
- **Restricted Approach Boundary:** Distance from an exposed live part within which there is an increased risk of shock (due to electrical arc-over combined with inadvertent movement) for personnel working in close proximity to the live part. This boundary may only be crossed by a qualified person who is safely insulated or guarded from the live parts.
- **Prohibited Approach Boundary:** Distance from an exposed live part within which work is considered the same as making contact with the live part. This boundary may only be crossed by a qualified person who has specific training to work on energized parts; has obtained an approved Energized Electrical Work Permit; and uses PPE appropriate for working on energized parts which are rated for the voltage and energy level involved. (Note: A permit is not required for work related to testing, troubleshooting, and voltage measuring).
- **Flash Protection Boundary (not listed in table):** Distance from exposed live parts within which a person could receive a second degree burn if an electrical arc flash were to occur. This boundary may only be crossed by a qualified person wearing the appropriate PPE. For systems that are 600 volts are less, the Flash Protection Boundary shall be a minimum of four feet. An engineering analysis must be performed to determine the Flash Protection Boundary for systems that are above 600 volts.

Appendix C
Hazard/Risk Category Classifications
taken from NFPA Table 130.7(C)(9)(a)

Task (Assumes equipment is energized, and work is done within the Flash Protection Boundary)	Hazard/Risk Category	V-rated Gloves	V-rated Tools
Panelboards Rated 240 V and Below – Notes 1 and 3			
Circuit breaker (CB) or fused switch operation with covers on	0	N	N
CB or fused switch operation with covers off	0	N	N
Work on energized parts, including voltage testing	1	Y	Y
Remove/install CBs or fused switches	1	Y	Y
Removal of bolted covers (to expose bare, energized parts)	1	N	N
Opening hinged covers (to expose bare, energized parts)	0	N	N
Panelboards or Switchboards Rated > 240 V and up to 600 V (with molded case or insulated case circuit breakers) – Notes 1 and 3			
CB or fused switch operation with covers on	0	N	N
CB or fused switch operation with covers off	1	N	N
Work on energized parts, including voltage testing	2 (*)	Y	Y
600 V Class Motor Control Centers (MCCs) – Notes 2 (except as indicated) and 3			
CB or fused switch or starter operation with enclosure doors closed	0	N	N
Reading a panel meter while operating a meter switch	0	N	N
CB or fused switch or starter operation with enclosure doors open	1	N	N
Work on energized, including voltage testing	2*	Y	Y
Work on control circuits with energized parts 120 V or below, exposed	0	Y	Y
Work on control circuits with energized parts >120 V, exposed	2*	Y	Y

Appendix C
Hazard/Risk Category Classifications
taken from NFPA Table 130.7(C)(9)(a)

600 V Class Motor Control Centers (MCCs) (continued)			
Insertion or removal of individual starter “buckets” from MCC	3	Y	N
Application of safety grounds, after voltage test	2*	Y	N
Removal of bolted covers (to expose bare, energized parts)	2*	N	N
Opening hinged covers (to expose bare, energized parts)	1	N	N
600 V Class Switchgear (with power circuit breakers or fused switches) – Notes 5 and 6			
CB or fused switch operation with enclosure door closed	0	N	N
Reading a panel meter while operating a meter switch	0	N	N
CB or fused switch operation with enclosure doors open	1	N	N
Work on energized parts, including voltage testing	2*	Y	Y
Work on control circuits with energized parts 120 V or below, exposed	0	Y	Y
Work on control circuits with energized parts >120 V, exposed	2*	Y	Y
Insertion or removal (racking) of CBs from cubicles, doors open	3	N	N
Insertion or removal (racking) of CBs from cubicles, doors closed	2	N	N
Application of safety grounds, after voltage test	2*	Y	N
Removal of bolted covers (to exposed bare, energized parts)	3	N	N
Opening hinged covers (to expose bare, energized parts)	2	N	N
Other 600 V Class (277 V through 600 V, nominal) Equipment – Note 3			
Lighting or small power transformers (600 V, maximum)	–	–	–
Removal of bolted covers (to expose bare, energized parts)	2*	N	N

Appendix C
Hazard/Risk Category Classifications
taken from NFPA Table 130.7(C)(9)(a)

Opening hinged covers (to expose bare, energized parts)	1	N	N
Other 600 V Class (277 V through 600 V, nominal) Equipment (continued)			
Work on energized parts, including voltage testing	2*	Y	Y
Application of safety grounds, after voltage testing	2*	Y	N
Revenue meters (kW-hour, at primary voltage and current)	–	–	–
Insertion or removal	2*	Y	N
Cable trough or tray cover removal or installation	1	N	N
Miscellaneous equipment cover removal or installation	1	N	N
Work on energized parts, including voltage testing	2*	Y	Y
Application of safety grounds, after voltage test	2*	Y	N

PPE Requirements can be found in Appendix E
Additional Information:

- V-rated Gloves are gloves rated and tested for the maximum line-to-line voltage upon which work will be done.
- V-rated Tools are tools that are rated and tested for the maximum line-to-line voltage upon which work will be done.
- 2(*) means that a double-layer switching hood and hearing protection are required for this task in addition to the other Hazard/Risk Category requirements of ***Appendix E.***
- Y = Yes (required)
- N = No (not required)

Notes:

(1) 25kA short circuit current available, 0.03 second (2 cycle) fault clearing time.
(2) For < 10kA short circuit current available, the hazard/risk category required may be reduced by one number.
(3) For <10 kA short circuit current available, the hazard/risk category required may be reduced by one number.
(5) 65 kA short circuit current available, up to 1.0 second (60 cycle) fault clearing time.
(6) For <25 kA short circuit current available, the hazard/risk category required may be reduced by one number.

Appendix D

Personal Protective Equipment Matrix

Protective Clothing and Equipment			Protective Systems for Hazard/Risk Category			
Hazard/Risk Category Number	**- 1**[3] (Note 3)	**0**	**1**	**2**	**3**	**4**
Non-melting (according to ASTM F 1506-00) or Untreated Natural Fiber						
a. T-shirt (short-sleeve)	X			X	X	X
b. Shirt (long-sleeve)		X				
c. Pants (long)	X	X	X (Note 4)	X (Note 6)	X	X
FR Clothing (Note 1)						
a. Long-sleeve shirt			X	X	X (Note 9)	X
b. Pants			X (Note 4)	X (Note 6)	X (Note 9)	X
c. Coverall			(Note 5)	(Note 7)	X (Note 9)	(Note 5)
d. Jacket, parka, or rainwear			AN	AN	AN	AN
FR Protective Equipment						
a. Flash suit jacket (multilayer)						X
b. Flash suit pants (multilayer)						X
c. Head protection						
1. Hard hat			X	X	X	X
2. FR hard hat liner					AR	AR
d. Eye protection						
1. Safety glasses	X	X	X	AL	AL	AL
2. Safety goggles						
e. Face and head area protection						
1. Arc-rated face shield, or flash suit hood				X (Note 8)		
2. Flash suit hood					X	X
3. Hearing protection (ear canal inserts)				X (Note 8)	X	X
f. Hand protection						
Leather gloves (Note 2)			AN	X	X	X
g. Foot protection						
Leather work shoes			AN	X	X	X
PPE Arc Flash Gear Required	**N/R**	**N/R**	**4cal**	**8cal**	**25cal**	**40cal**

AN = As needed AR = As required AL = Select one in group X = Minimum required

Notes:

(1) See Table 130.7 (C) (11). Arc rating for a garment is expressed in cal/cm^2.

(2) If voltage-rated gloves are required, the leather protectors worn external to the rubber gloves satisfy this requirement.

(3) Hazard/Risk Category Number "-1" is only defined if determined by Notes 3 or 6 of Table 130.7 (C) (9) (a).

(4) Regular weight (minimum 12 oz/yd^2 fabric weight), untreated, denim cotton blue jeans are acceptable in lieu of FR pants. The FR pants used for Hazard/Risk Category 1 shall have a minimum arc rating of 11 cal.

(5) Alternate is to use FR coveralls (minimum arc rating of 11 cal) instead of FR shirt and FR pants.

(6) If the FR pants have a minimum arc rating of 11 cal, long pants of non-melting or untreated fiber are not required beneath the FR pants.

(7) Alternate is to use FR coveralls (minimum arc rating of 11 cal) over non-melting or untreated natural fiber pants and T-shirt.
(8) A face shield with a minimum arc rating of 11cal, with wrap-around guarding to protect not only the face, but also the forehead, ears, and neck (or alternatively, a flash suit hood), is required.
(9) Alternate is to use two sets of FR coveralls (the inner with a minimum arc rating of 4cal and outer coverall with a minimum arc rating of 5 over non-melting or untreated natural fiber clothing, instead of FR coveralls over FR shirt and FR pants over non-melting or untreated natural fiber clothing