

## Energized Electrical Work Permit

(For work under 750 volts)

<b>To be completed by the electrically qualified persons doing the work</b>		
Building:	Room/Area:	Work Order # <i>(if applicable)</i>
Description of work to be done:		
Description of Circuit/Equipment:		
<b>Justification for why equipment cannot be de-energized:</b>		
<b>Results of Shock Hazard Analysis Category</b> (NFPA 70E-2015 Table 130.7(C)(15)(A)(a) & 130.7(c)(15)(A)(b))		<b>Results of Arc Flash Hazard Analysis (From Label on electrical panel)</b>
Maximum Voltage: _____ Arc Flash Boundary _____ (ft.) Limited Approach Boundary: _____(ft.) Restricted Approach Boundary: _____(ft.)		Flash Hazard at 18 inches (cal/cm <sup>2</sup> ) _____ Flash Protection Boundary: _____(ft.) Limited Approach Boundary: _____(ft.) Restricted Approach Boundary: _____(ft.)
<b>PPE:</b> Rated Gloves: ____ Safety Glasses: ____ Rated Face Shield: ____ Hard Hat: ____ Hearing Prot: ____ Footwear: Leather: ____ EH Rated: ____ Dielectric (wet environment): ____ Non Conductive Mat: ____		
<b>Safety Checklist &amp; Job Briefing (Verify that proper controls are in place):</b>		
<input type="checkbox"/> Workers must be trained, qualified, and have full knowledge of equipment. <input type="checkbox"/> Insulated tools and equipment required. <input type="checkbox"/> Remove all jewelry and metal apparel <input type="checkbox"/> Accessed restricted to unqualified persons from the work area. (Highest Approach Boundary + 3 feet) <input type="checkbox"/> Documented job briefing including discussion of job-specific hazards with electrically qualified person <input type="checkbox"/> Additional information, special requirements, procedures, or written work plans reviewed		
<b>Electrically Qualified Persons performing the work understand and agree to the above:</b>		
<b>Printed or typed name(s):</b>	<b>Signature(s)</b>	<b>Date(s)</b>
<b>APPROVALS TO PERFORM THE WORK WHILE ELECTRICALLY ENERGIZED (2 signatures required)</b>		
<b>Printed or typed name(s):</b>	<b>Signature(s)</b>	<b>Date(s)</b>
FO&M Supervisor:		
FO&M Electrical Shop Supervisor:		
FO&M Shop Service Manager		
FO&M Science Facility Manager		
FO&M Associate Vice President		

### SHOCK HAZARD

(Limit Approach & Restricted Approach Boundaries)

Voltage Range	Limited Approach		Restricted Approach
	Movable	Fixed	
< 50 Volts	NS	NS	NS
50 V – 150 V	10 feet	3 ft 6 in	Avoid Contact
151 V – 750 V	10 Feet	3 ft 6 in	1 foot
Over 750 V	Consult NFPA 70E-2015 Table 130.4(D)(a)		

### PPE Category & Arc Flash Boundary

Equipment	PPE Cat.	Arc Flash Bound.
Panel boards or other equipment rated 240 V or less	1	19 in
Panel boards or other equipment between 240 V and 600 V	2	3 feet
600 V Class (277 V – 600 V Nominal)	2	5 feet
600 V class motor control centers	2	5 feet

### PPE Requirements

CATEGORY 1	CATEGORY 2
Arc Rated Clothing 4 cal/cm <sup>2</sup> Arc rated face shield or arc flash hood Non conductive safety glasses Hearing protections inserts Rubber insulating gloved w/leather Leather, non conductive (EH) rated footwear	Arc Rated Clothing 8 cal/cm <sup>2</sup> Arc rated face shield or arc flash hood and arc rated balaclava Non conductive safety glasses Hearing protections inserts Rubber insulating gloved w/leather Leather, non conductive (EH) rated footwear
Type II Class E hard Hat w/face shield, Arc Rated outer wear to be used as needed	

### Definitions

Arc Flash Boundary:	When an arc flash hazard exists, the arc flash boundary is the approach distance that a person could reason a second-degree burn to unprotected skin. (1.2 cal/cm <sup>2</sup> )
Limited Approach Boundary	An approach distance from an exposed energized electrical conductor or circuit where a shock hazard exists.
Restricted Approach Boundary	An approach distance from an exposed energized electrical conductor or circuit where there is an increased likelihood of electric shock due to electrical arc over combined with inadvertent movement.

### Sample Arc Flash Analysis Label

WARNING

Arc Flash and Shock Hazard  
Appropriate PPE Required

<b>186 inch</b> <b>37.4</b> <b>Class 4</b>	<b>Flash Hazard Boundary</b> cal/cm <sup>2</sup> Flash Hazard at 18 inches FR Shirt & Pant + Multi Layer Flash Suit + Cotton Underwear
<b>208 VAC</b> <b>00 Rated</b> <b>42 inch</b> <b>0 inch</b> <b>0 inch</b>	<b>Shock Hazard When Covers are Removed</b> Glove Class Limited Approach Restricted Approach Prohibited Approach
<b>Equipment Name: BUS-XFMR208V</b>	