UNIVERSITY OF WASHINGTON

# ENERGIZED ELECTRICAL WORK PERMIT AND WORK PLAN

FACILITIES SERVICES

## Section 1 - PROJECT INFORMATION

☐ CPO Project No._____ ☐ FS Work Request No._____ Phase_____

| Building | Room/Location |
|---|---|
| FME Serial No._____ | Name of Equipment |
| Fed from | Drawing No._____ |

## Section 2 - HAZARD ANALYSIS

Safety Hazard Review Checklist:

**SAFE ACCESS TO WORKSITE**

☐ Ladder ☐ Scaffolding ☐ Roof ☐ Sewer ☐ Catwalk/Landing ☐ Suspended Ceiling ☐ Pit or Tunnel

**POTENTIAL HAZARDS AND SAFEGUARDS**

☐ Asbestos ☐ Biological Hazards ☐ Chemicals ☐ Compressed Gas ☐ Confined space or Permit required Confined Spaces

☐ Electrical Powerline Overhead ☐ Electrical: damp/wet environment ☐ Heat/cold stress

☐ Energized Equipment ☐ Mechanical ☐ Hydraulic ☐ Pneumatic ☐ Steam

☐ Excavation, Trenching, Shoring ☐ Fall Hazards (workplan may be required) ☐ Fire Hazard ☐ Lead ☐ Noise

☐ Materials handling (forklift, lift, hoist, etc.) ☐ Overhead Hazard (hard hat)

☐ PPE

☐ Ears ☐ Eyes ☐ Feet ☐ Hands ☐ Head ☐ Respiratory

☐ Radiation ☐ Scaffolding ☐ Welding/Cutting

Electrical Energy Source Hazards for This Permit

Check all that apply

☐ 120 volts ☐ 277 volts ☐ Emergency Power

☐ 208 volts ☐ 480 volts ☐ Less than 50 volts (permit may not be required)

☐ 240 volts ☐ DC ☐ Other (describe)_____

Work To Be Performed (and work practices to be used):

Justification for Energized work per WAC 296-24-975

☐ **EXEMPTION 1**

De-energizing introduces additional or increased hazards. Examples include interruption of life support equipment, deactivation of emergency alarm systems, shutdown of hazardous location ventilation equipment, or removal of illumination for an area.

☐ **EXEMPTION 2**

De-energizing is infeasible due to equipment design or operational limitations. Examples include testing of electrical circuits that can only be performed with the circuit energized, and work on circuits that form an integral part of a continuous industrial process in a chemical plant that would otherwise need to be completely shutdown in order to permit work on one circuit or piece of equipment.

☐ **EXEMPTION 3**

Live parts that operate at less than 50V to ground need not be de-energized if there will be no increased exposure to electrical burns or to explosion due to electric arcs.

Explain specifics for this work:

Special Instructions:

Approach Boundaries to Live Parts for Shock Protections (NFPA 70E, Table 130.2 (C)

| System Voltage | Limited Approach (fixed circuit parts) Boundary | Restricted Approach Boundary | Prohibited Approach Boundary |
|---|---|---|---|
| ☐ Less than 50V | not specified | not specified | not specified |
| ☐ 50V to 300V | 3' 6" * | avoid contact | avoid contact |
| ☐ 301V to 750V | 3' 6" * | 1' 0" | 0' 1" |
| ☐ 751V to 15 kV | 5' 0" * | 2' 2" | 0' 7" |
| ☐ 5.1kV to 35kV | 6' 0" * | 2' 7" | 0' 10" |
| ☐ 36.1kV to 46kV | 8' 0" * | 2' 9" | 1' 5" |
| ☐ 46.1kV to 72.5kV | 8' 0" * | 3' 2" | 2" 1" |
| ☐ 72.6kV to 121kV | 8' 0" ** | 3' 3" | 2' 8" |
| ☐ 138kV to 145kV | 10' 0" *** | 3' 7" | 3' 1" |

* If any conductors are moveable, the limited approach distance is 10'.

** If any conductors are moveable, the limited approach distance is 10' 8".

*** If any conductors are moveable, the limited approach distance is 11' 0".

***Multiply single phase voltages by 1.73 to obtain correct voltage level to be used (NFPA 70E C.2.11)***

**Limited Approach Boundary**

Approach limit at a distance from a live part within which a shock hazard exists.

**Restricted Approach Boundary**

Approach limit at a distance from an exposed live part within which there is an increased risk of shock, due to eletrical arc-over, combined with inadvertent movement, for personnel working close to the live part.

**Prohibited Approach Boundary**

The approach limit at a distance from a live part within which work is considered the same as making contact with the live part.

Flash Hazard Analysis (NFPA 70E.130.3 [A])

***Contact Facilities Services Engineering Services to fill out this section if work does not meet the less than 600V or .1 sec. clearing time.***

Flash Protection Boundary ***(check method used to determine boundary)***

☐ 4' 0" (systems less than 600 volts, with 0.1 second clearing time; Ibf<50kA, or 5000 A-sec)

☐ Other (please state the source or attach the work performed to derive the boundary).

Fault Clearing Device (name) _____ Description _____

Manufacturer/Model/Type _____

Clearing time, seconds _____

***The person completing this section must complete the Authorization (Section 6)***

Hazard/Risk Level Determination

Method Used:

☐ Available short circuit fault current is less than 10,000 amps. ***(Identify source of calculated value)*** _____

☐ From NFPA 70E Table 130.7(C) (9) (A)

☐ Other (describe) _____

Hazard/Risk Level: ☐ -1 ☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4

At distance of: _____

## Section 3 - PERSONAL AND OTHER PROTECTIVE EQUIPMENT

Personal Protective Equipment

***Use NFPA 70E Table 130.7(C) (10) and check all that apply:***

| | | CAL RATING | | CAL RATING |
|---|---|---|---|---|
| ☐ Pants | ☐ FR Long Sleeve Shirt | | ☐ FR Flash Suit Pants | |
| ☐ Natural Fiber Clothing | ☐ FR Pants | | ☐ FR Hard Hat | |
| ☐ Eye Protection | ☐ FR Coverall | | ☐ FR Safety Goggles | |
| ☐ T-shirt (short) | ☐ FR Jacket | | ☐ Arc-rated Face Shield | |
| ☐ Long Sleeve Shirt | ☐ FR Flash Suit Jacket | | ☐ Flash Suit Hood | |
| ☐ Hearing Protection | ☐ Leather Gloves | | ☐ Protective Footwear | |

***No jewelry or metal objects can be worn or carried in pockets while completing work requiring an energized work permit. This includes wedding rings, necklaces, watches, earrings, keys, coins, pocket knives, etc.***

Other Protective Equipment

Insulated tools and equipment required per NFPA 70E Table 130.7(C) (9) (A)

☐ Insulated Tools ☐ Fiberglass-Reinforced Plastic Rods ☐ Rubber Insulating Equipment
☐ Fuse or Fuse Holding Equipment ☐ Portable Ladders ☐ Voltage Rated Plastic Guard Equipment
☐ Ropes and Hand Lines ☐ Protective Shields ☐ Physical or Mechanical Barriers

## Section 4 - SITE CONTROL AND SUPPORT

Worksite Control

☐ Locked Access ☐ Barrier Tapes, Stanchions ☐ Other _____
☐ Electrical Hazard Signs ☐ Attendant

Worker Support Required

☐ Safety Watch Required

Means of emergency communication (check all that apply).

☐ Radio ☐ Cell Phone ☐ Phone

## Section 5 - WORK SCHEDULE AND PERSONNEL

Schedule

Date(s) mo. ____ day ____ year ____ to mo. ____ day ____ year ____ Hours _____

Permit Expiration Date mo. ____ day ____ year ____ (not to exceed one year from start date).

Personnel

***Signatures are not required until the work briefing is complete.***

**QUALIFIED PERSON**

☐ Performing Work ☐ Safety Watch

Reviewed Hazard Analysis ☐ Yes ☐ No

Completed Job Briefing ☐ Yes ☐ No

Agrees to Requirements ☐ Yes ☐ No

Name (PRINT LEGIBLY) _____

Signature _____ Date _____

**QUALIFIED PERSON**

☐ Performing Work ☐ Safety Watch

Reviewed Hazard Analysis ☐ Yes ☐ No

Completed Job Briefing ☐ Yes ☐ No

Agrees to Requirements ☐ Yes ☐ No

Name (PRINT LEGIBLY) _____

Signature _____ Date _____

**SUPERVISOR**

Prepared Hazard Analysis ☐ Yes ☐ No

Completed Job Briefing ☐ Yes ☐ No

Verified Employees are qualified to do this work ☐ Yes ☐ No

Name (PRINT LEGIBLY) _____

Signature _____ Date _____

**NOTE:**

**If any unexpected energy is found, or equipment has been modified since the permit was issued, the permit is VOID.**

## Section 6 - AUTHORIZATION OF ENERGIZED ELECTRICAL WORK PERMIT

Supervisor, Lead or Electrical Engineer (FS Engineering Services)

Completed and/or reviewed Flash Hazard Analysis ☐ Yes ☐ No

Comments:

Name (PRINT LEGIBLY) _____

Signature _____ Date _____

Responsible Supervisor Authorizing Work

Reviewed Flash Hazard Analysis ☐ Yes ☐ No

Agreed to Justification ☐ Yes ☐ No

Comments

Name (PRINT LEGIBLY) _____

Signature _____ Date _____

Manager Authorizing Work

Reviewed Flash Hazard Analysis ☐ Yes ☐ No

Agreed to Justification ☐ Yes ☐ No

Comments

Name (PRINT LEGIBLY) _____

Signature _____ Date _____