

# Fermilab

## ELECTRICAL HAZARD ANALYSIS / WORK PERMIT

For Selected Work Activities on the AC Power Distribution System or Electrical Utilization Equipment

JOB NAME & LOCATION: \_\_\_\_\_

EFFECTIVE DATES OF PERMIT:                      Start: \_\_\_\_\_                      End: \_\_\_\_\_

WORK TO BE PERFORMED BY: \_\_\_\_\_

QUALIFIED PERSON IN CHARGE: \_\_\_\_\_                      PHONE: \_\_\_\_\_

If not the same as or under the direct supervision of the Qualified Person in Charge,  
PERSON PERFORMING SWITCHING: \_\_\_\_\_                      PHONE: \_\_\_\_\_

Does the Work Involve Diagnostic Energized Work?    Yes \_\_\_\_\_ No \_\_\_\_\_    (Includes LOTO Verification)

Does the Work Involve Manipulative Energized Work?    Yes \_\_\_\_\_ No \_\_\_\_\_    (Justification Required)

Is an Inspection Required After Work is Completed?    Yes \_\_\_\_\_ No \_\_\_\_\_    (Reqd. for New AC Pwr. Installs)

If the Work Activity Involves Manipulative Energized Work, State the Justification Here and attach risk assessment following risk assignment guidelines in QAM 12030.

\_\_\_\_\_  
DESCRIPTION OF WORK:

ASSOCIATED HAZARDS:

HAZARD MITIGATION: (Indicate electrical shock and arc flash PPE on next page)

**SHOCK PROTECTION BOUNDARIES for ENERGIZED WORK**

from NFPA 70E Table 130.4(D)(a) for Fixed Circuit Parts and Article 130.4(D). Refer to NFPA 70E Table 130.4(D)(b) for DC system voltages. Indicate if Otherwise.

For 50 to 150 VAC: **Shock Protection: Limited Approach: 3' 6". Restricted Approach: Avoid Contact**

For 151 to 750 VAC: **Shock Protection: Limited Approach: 3' 6". Restricted Approach: 1 Ft.**

Class \_\_\_\_\_ **Voltage-Rated Gloves and Leather Protectors** Required for Subject Work Activity

**ARC-FLASH PROTECTION BOUNDARY and REQUIRED PPE for ENERGIZED WORK**

The Fermilab Default Arc Flash Boundary is 4 feet (1.2 m) (see ESS Determination 2019-02)

If obtained from tables, enter PPE Category: \_\_\_\_\_ and Arc Flash Boundary \_\_\_\_\_ feet and/or inches

If Calculated, Indicate Arc Flash Boundary: \_\_\_\_\_ feet and/or inches

If Calculated, Indicate Incident Energy Level for Arc Flash Protection: \_\_\_\_\_ cal/cm<sup>2</sup>

PPE Requirements for Shock & Arc Flash Protection are Fully Described in NFPA 70E, Article 130.7. Indicate if Otherwise. Clothing Must be Non-Melting, may be Untreated Natural Fiber, Unless Specified as Arc Rated (AR).

**PPE Category**

**PPE and Clothing Requirements**

- 0 Long-Sleeve Cotton Shirt, Long Cotton Pants, Safety Glasses, Hearing Protection, Leather Gloves (0 to 1.2 cal/cm<sup>2</sup>)
- 1 Cotton Clothing under AR Coverall, Safety Glasses, Hard Hat, Arc-rated Face Shield, Hearing Protection, Leather Protectors or Gloves, Leather Work Shoes (>1.2 to 4 cal/cm<sup>2</sup>)
- 2 Cotton Clothing under AR Coverall, Safety Glasses, Hard Hat, Double-Layer Switching Hood, Hearing Protection, Leather Protectors or Gloves, Leather Work Shoes (>4 to 8 cal/cm<sup>2</sup>)
- 3 Cotton Clothing under AR Flash Suit Jacket and Pants (25 cal/cm<sup>2</sup>), Safety Glasses, Hard Hat, Hard Hat Liner, Flash Suit Hood, Hearing Protection, Leather Protectors or Gloves, Leather Work Shoes (>8 to 25 cal/cm<sup>2</sup>)
- 4 Cotton Clothing under Multilayer AR Flash Suit Jacket and Pants (40 cal/cm<sup>2</sup>), Safety Glasses, Hard Hat, Hard Hat Liner, Flash Suit Hood, Hearing Protection, Leather Protectors or Gloves, Leather Work Shoes (>25 to 40 cal/cm<sup>2</sup>)

PREPARED BY: \_\_\_\_\_

Date: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_

Date: \_\_\_\_\_

**ADDITIONAL APPROVALS FOR MANIPULATIVE ENERGIZED WORK**

Approval of D/S Electrical Coordinator \_\_\_\_\_

Approval of Area Division/Section Head \_\_\_\_\_

Approval of Fermilab Directorate \_\_\_\_\_

# Job Briefing Signature Sheet

**Person(s) Conducting Briefing:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Personnel Present at the Job Briefing will Sign Below, thereby Indicating their Understanding of the Scope of Work and Associated Hazard Mitigation Requirements.

Print Name                      Fermi ID #              Div/Sec or Company              Signature