

# ARGONNE NATIONAL LABORATORY

## HIGH ENERGY PHYSICS DIVISION

# AWA

## ARGONNE WAKEFIELD ACCELERATOR

### ELECTRICAL SAFETY PROCEDURES

**Approved:**

HEP-AWA Group Rep: Wei Gai (signed copy in the manual) Date: 3/19/09

HEP-ESH Administrator: Leon T. Reed (signed copy in the manual) Date: 3/19/09

**ELECTRICAL SAFETY PROCEDURES**

The following basic procedures, which are a reiteration of previously stated procedures, shall be followed to insure maximum safety to personnel while installing and troubleshooting electrical equipment at the Wakefield Accelerator. Remember that thinking is the best safety procedure.

I. **WARNING SIGNS**

Signs shall be posted stating the voltage and/or current hazard present in the enclosure or area.

II. **DRAWINGS**

All circuit drawings shall be up-to-date, and this is the responsibility of the following persons:

M. Conde  
P. Schoessow

III. **ENTRY INTO ELECTRICAL ENCLOSURES - GENERAL**

A. **Power Turn-off**

Turn off power to equipment and lock out and tag switch or breaker.

B. **Grounding of Components**

In those cases where reactive components such as capacitors, etc., are present, proper grounding of these components must be accomplished, using an insulated handle grounding hook. Do not depend upon automatic grounding equipment. Leave the grounding hook on the "power" side of the components to insure your safety.

Care must be taken in discharging systems with large stored energy as the resulting arc, during grounding, may cause eye damage or injury due to spattered hot metal. Safety glasses shall be worn.

C. **Control circuitry**

In many high voltage enclosures that have been "secured," there may also be present either a nominal 120V or 230V control circuitry that is energized from another source. This hazard must not be overlooked.

### IV. TROUBLESHOOTING "HOT" EQUIPMENT

A. Troubleshooting equipment "HOT" shall only be performed when absolutely necessary and by work permit only.

B. Before work is to begin, procedures shall be reviewed and approval obtained from one of the following persons: Manoel Conde or Paul Schoessow. **No person may authorize himself or herself.**

#### C. Procedural information

1. Two persons shall always be present, one being entirely clear of the energized equipment.
2. Both persons must be knowledgeable with the equipment under test, including when and how to rapidly de-energize the equipment in case of an emergency.
3. Both persons shall be knowledgeable of good safety practices and emergency life-saving procedures.  
**NOTE: An experimental user of the accelerator is not necessarily qualified to act as one of the persons for the above roles.**
4. At no time shall the body or any of its appendages be extended into any area which has hazardous electrical conditions.
5. All jewelry shall be removed to minimize the possibility of inadvertent contact with "hot" components.
6. Upon completion of the work, the individual responsible for the work authorization shall be notified.