

**STANDARD OPERATING PROCEDURE # FAC 5.022****Subject: Electrical Hazard Prevention**

**Purpose and Scope:** To avoid electrical shock and injury while working with or around electrical equipment.

**Policy:** When working with or around electrical equipment, employees should assume responsibility for their own safety and that of co-workers and adhere to the procedures outlined below.

**Procedures:****Proper Wiring**

All new, permanent or temporary electrical installations, or the replacement, modification, repair or rehabilitation of any electrical installation must be made in compliance with their requirements of the National Electrical Code (NEC) of the National Fire Protection Association (NFPA).

Every effort must be made to eliminate potential hazards in research or development work that involves the design and construction of new systems so that equipment or apparatus will function safely in normal operations.

Electrical power distribution systems must be equipped with over current protection such as fuses or circuit breakers, which must never exceed the rated capacity of the circuit.

All other sources of electrical potential for either service or experimental work must also be adequately fused and grounded.

All newly installed receptacles must be of the grounding type.

Multi-outlet bench strips must be grounded and should be equipped with fuses and pilot lights. They must be properly affixed to a bench, or chassis frame.

A switch must be provided in a readily accessible and convenient location for disconnecting the main power to apparatus in the event of an emergency. This switch must be legibly marked to indicate voltage, current, wattage, and the equipment it controls, unless it is located and arranged

so that its purpose is evident. Everyone working in the area or on the particular project should know where the switch is located.

### Electrical Permits

Modification or changes in the circuits or equipment of a building must not be permitted unless authorized by an "Electrical Permit" obtained from Facilities Maintenance (Attachment 1).

No. \_\_\_\_\_  
Firm \_\_\_\_\_ Date \_\_\_\_\_  
By \_\_\_\_\_ Room \_\_\_\_\_  
Bldg \_\_\_\_\_  
Work to be done \_\_\_\_\_  
Person responsible for work \_\_\_\_\_  
Tel.# \_\_\_\_\_  
\*Date started \_\_\_\_\_ Completed \_\_\_\_\_  
Estimated cost \_\_\_\_\_

To be turned in before the job starts and after the job is completed.

This form can be found at <https://uwf.edu/finance-and-administration/departments/facilities-management/facilities-quick-links/helpful-links-and-forms/>

### Grounding and Bonding

Grounding eliminates a difference in electrical potential between a conductive object and the ground by connecting them. Grounding will protect you from electrical shock by providing a path, which offers less resistance to the current than you do. Bonding eliminates a difference of potential between conductive objects.

All exposed, non-current-carrying metal parts of fixed and portable equipment which are liable to become energized must be grounded.

Ground paths from circuits, equipment, and conductor enclosures must be permanent and continuous, having ample current-carrying capacity, and their impedance be low enough to facilitate the operation of over current devices in the circuit (Article 250-51, NEC).

Bonding keeps separate pieces of conducting material at the same grounded electrical potential. All conducting material, such as metal floor plates, equipment chassis, bench tops, tables, piping, and conduits, should be bonded to each other.

Use suitable lugs, pressure connectors, clamps, or other approved connecting means. Connections that depend upon solder must not be used in grounding or bonding.

Where an adapter must be used to fit an old, ungrounded outlet, attach the pigtail on the adapter to the faceplate screw before plugging in the adapter. Contact the Safety Office when this condition is discovered. Then the department should make arrangements with the Electric Shop to have the

receptacle replaced with a grounded type. Ungrounded electrical fixtures or equipment should be located so that a person cannot touch them and a water pipe or other grounded object at the same time.

### **Insulation**

If you work continually with or around electricity, you should wear rubber-soled footwear to guard against slipping and to provide insulation.

Use rubber floor mats and adequately insulated tools when working with “hot” lines or equipment.

When working on high-voltage equipment, have properly rated gloves and matting available for protection.

Check the voltage stamped on the gloves and never use them for higher voltages. Also make sure that gloves are in good condition. They can be checked by holding the end closed and forcing air into the fingers; this enables you to see the cracks or spots that are worn thin. Discard the gloves if these are visible. Never use unstamped gloves.

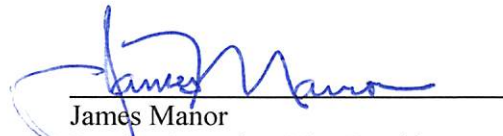
Portable tools or appliances protected by an approved (Underwriters’ Laboratories, Factory Mutual) system of double insulation or its equivalent need not be grounded. Where such a system is employed, the equipment must be distinctly marked.

**Developed by: Facilities Maintenance**

**Approved by:**



Anthony Fisher  
Superintendent  
Facilities Maintenance



James Manor  
Interim Associate Vice President  
Facilities Management



## Facilities Maintenance Electrical Permit

No. \_\_\_\_\_ (Leave Blank)

Firm \_\_\_\_\_ Date \_\_\_\_\_

By \_\_\_\_\_ Room \_\_\_\_\_

Bldg \_\_\_\_\_

Work to be done \_\_\_\_\_

Person responsible for work \_\_\_\_\_

Tel.# \_\_\_\_\_

\*Date started \_\_\_\_\_ Completed \_\_\_\_\_

Estimated cost \_\_\_\_\_

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