Unum
SECTION 21
Energized Electrical Permit
Policy & Procedure

21.0 Scope and Application

An Energized Electrical Permit (EEP) is required for all live electrical work at Unum where the work includes assembly, disassembly, or re-arrangement of components while they are energized. Work performed below 50 volts, as well as testing, troubleshooting, and voltage measuring, are exempt from the permit per National Fire Protection Association (NFPA) 70E 2004 edition, article 130.1(A)(3), provided that appropriate safe work practices and personal protective equipment (PPE) are used.

21.1 Purpose

This energized electrical procedure addresses the electrical safety requirements for employees, contract employees and qualified contractors to follow to protect them from injury when working with or coming in contact with live electrical parts and equipment. Working hot shall always be a last resort after all other avenues for working within a deenergized environment have been evaluated and determined not feasible due to conditions/restraints that cannot be eliminated.

Energized Electrical Permit

21.2 Where required

An Energized Electrical Permit is required if the scope of work or conditions within which the work is performed requires live electrical parts that are not placed in an electrically safe work condition. The work to be performed shall be considered energized electrical work and shall be performed by written permit only.

Approval of an “Energized Electrical Work Permit” for working hot will only be issued and approved by the Unum Director of Facilities and the Unum Director of Safety and Security.

Testing, troubleshooting, and voltage measuring does not require an “Energized Electrical Work Permit” provided appropriate safe work practices are conducted and PPE are used.

21.3 Definitions

Energized: Electrically connected to or having a source of voltage.

Flash Hazard Analysis-A flash hazard analysis protects personnel from the possibility of being injured by an arc flash. The analysis shall determine the Flash Protection Boundary and the personal protective equipment that an authorized individual with in the Flash Protection Boundary might use.

Flash Protection Boundary-Is the approach limit at a distance from exposed live parts with which a person could receive a second degree burn if an electrical arc flash were to occur.

Job Hazard Analysis-A job hazard analysis (JHA) focuses on job tasks as a way to identify hazards before they occur. A JHA focuses on the relationship between the worker, the task, the tools, and the work environment. A job hazard analysis examines each basic step in a job task, identifies the potential hazards and determines measures to protect workers from these hazards.

Qualified Person-Is required to hold a master electricians license and shows proof of completing the NFPA 70 E training. A qualified person shall have the skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved. To avoid unexpected exposure to an electrical hazard, a qualified person must be thoroughly familiar with and demonstrate familiarity with the details of how the electrical equipment is constructed.

A qualified person must be able to recognize all electrical hazards within the realm of his/her work assignment. He or she must be able to select and use adequate protective equipment.

Shock Hazard Analysis -A shock hazard analysis determines the voltage to which personnel will be exposed. The analysis determines the shock boundary requirements, and PPE necessary in order to minimize the possibility of electric shock to personnel.

Shock Protection Boundary-The shock protection boundaries are required because more than one electrical hazard exists to employees working on or near live parts. Shock protection boundaries are identified as Limited, Restricted and Prohibited. Crossing one of these approach boundaries increases the chance that a worker might contact an exposed live part.

- *Limited Approach Boundary*: Defines the closest approach to an exposed electrical hazard, (conductor, component, etc.), for non-qualified personnel, unless escorted by a qualified worker. Determines the minimum safe distance for the placement of barricades for shock protection. If the qualified electrical

workers are unable or unwilling to provide escort for unqualified workers, the unqualified worker may not enter the limited approach boundary.

- *Restricted Approach Boundary*: Qualified and Authorized electrical workers only. All required PPE appropriate to the shock hazard must be worn. The worker is now working near the exposed hazard. The worker must have an approved plan for the work they are to perform. They may cross the restricted boundary only to the extent that is necessary to perform their work.

- *Prohibited Approach Boundary*: All of the requirements for limited and restricted boundaries apply. Any work inside the prohibited boundary is considered the same as being in contact with the exposed uninsulated conductor. No electrically uninsulated part of the body may cross the prohibited approach boundary.

Troubleshooting -Performing diagnostics and testing (start-up or trouble shooting) of electric circuits that can only be performed with the circuit energized and work on circuits that form an integral part of a continuous process that would otherwise need to be completely shut down in order to permit work on one circuit or piece of equipment.

PPE-An acronym for Personal Protective Equipment

Unqualified Person-Is a person who does not meet the definition of a qualified person. This includes employees who do not perform work on or around exposed energized electrical conductors.

21.4 Elements of the Energized Electrical Work Permit shall include the following items:

1. Requestor shall describe the circuit and equipment to be worked on, the location, and a description of the work to be done.
2. Requestor shall provide justification why work must be performed energized.
3. The electrically qualified persons doing the work shall have:

    a. A detailed job work procedure including the safe work practices to be completed

    b. Results of the Shock Hazard Analysis and determination of the shock protection boundaries

    c. Determine the results of the Flash Hazard Analysis and determination of the Flash Protection Boundaries.

    d. Determined the necessary personal protective equipment (PPE) to safely perform the assigned task and shall obtain same.

e. Employed means to restrict access of unqualified persons from the work area. If needed Designate a qualified “safety watch” who is knowledgeable to assist in the safe performance of the work with communication and safety equipment necessary to fulfill their responsibility.

f. Complete a job hazard analysis (JHA), and review the JHA with all job participants in a job briefing;

g. Obtained necessary approvals to perform the energized electrical work. Approved procedures including a hazard / risk analysis of work to be performed prior to the start of work. The work site area shall be examined and work activities shall be reviewed for hazards. As a minimum, the following core functions must be performed for all work:

I. Scope of work defined
II. Hazards analyzed
III. Hazard controls developed and implemented
IV. Perform all work within controls using "Qualified Personnel"
V. Provide feedback for continuous improvement.

21.5 Exemptions to Work Permit. Work performed on, or near, live parts by qualified persons related to the tasks such as testing, troubleshooting, voltage measuring, etc. shall be permitted to be conducted without an energized electrical work permit. Personnel must have approved work procedures, including appropriate safe work practices and personal protective equipment as specified in the job hazard analysis.

Employees working in areas where electrical hazards are present shall be provided with, and shall use, protective equipment that is designed and constructed for the specific part of the body to be protected and the work being performed. Test instruments and equipment shall only be used by qualified persons performing testing work on or near live parts operating at 50 volts or more.

No persons shall perform troubleshooting on circuits above 480volts. Insulated tools shall be used for making calibration adjustments when there is a chance of the tool falling and causing an electrical fault. No repairs, removals, or replacement of electrical equipment shall be allowed when troubleshooting on energized circuits.

Unum *Energized Electrical Work Permit*

Part 1: **TO BE COMPLETED BY THE REQUESTER**: Job/Work Order Number_____

(1) Planned start date: _____ Time: _____ Duration: _____

(2) Description of circuit/equipment/job location: _____

_____

(3) Description of work to be done: _____

_____

(4) Justification of why the circuit/equipment cannot be de-energized or the work deferred until the next scheduled outage: _____

_____

(5) Requested by:

_____ _____
(Print) (Signature)

_____ _____
(Title) (Date)

Check when Complete

PART II: **TO BE COMPLETED BY THE ELECTRICALLY QUALIFIED PERSONS DOING THE WORK:**

(1)Detailed job description procedure to be used in performing the above detailed work: _____ ☐

_____

(2)Description of the Safe Work Practices to be employed: _____ ☐

_____

(3)Results of the Shock Hazard Analysis: _____ ☐

_____

(4)Determination of Shock Protection Boundaries: _____ ☐

_____

(5)Results of the Flash Hazard Analysis: _____ ☐

_____

(6)Determination of the Flash Protection Boundary: _____ ☐

_____

(7)Necessary personal protective equipment to safely perform the assigned tasks: _____ ☐

_____

(8)Means employed to restrict access of unqualified persons from the work area: _____ ☐

_____

(9)Evidence of completion of a Job Briefing including discussion of any job-related hazards: _____ ☐

_____

(10)Do you agree with the above described work can be done safely?

□ yes □ no (If no, return to requester)

_____ _____
Electronically Qualified Person(s) Date

_____ _____
Electronically Qualified Person(s) Date

PART III: **APPROVALS TO PERFORM THE WORK WHILE ELETRICALLY ENERGIZED:**

_____ _____
AVP of Corporate Real Estate Date

_____ _____
Director of Unum Safety & Security Date

This form is must be forwarded to the Safety Engineer for review and retention.