



Utilities & Maintenance
LOCKOUT/TAGOUT PROGRAM

FOR

ELECTRICAL GENERATION, TRANSMISSION AND DISTRIBUTION

(Covered by 29 CFR Subpart R 1910.269 (d))

January 11, 2024

Rev. 0

I. PROGRAM

A. DEFINITIONS

Authorized Contractor

With regards to this procedure an Authorized Contractor is an employee of a contractor who has experience and familiarity with the University's Medium Voltage System and has access to the necessary documentation and drawings to provide a working knowledge of the system as well as is working under the direction of an Authorized Employee of the University.

Authorized Employee

A person who is approved or assigned the duty to lockout/tagout systems, equipment or distribution pathways, to allow for work activities to be performed.

Affected Employee

A person who cannot lockout/tagout systems, equipment or distribution pathways, but who is working in the vicinity and therefore affected by any work activities performed.

Energized

Connected to an energy source or containing residual or stored energy.

Established Blocking Point List

A lockout tagout blocking point list that is prewritten and routinely reviewed and is for equipment or systems that are routinely used.

Lockout

The placement of a lockout device on any energy isolating device, in accordance with an established procedure, ensures that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device

A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in a safe position and prevent the energizing of a machine or equipment.

Medium Voltage Systems

Includes systems with operating voltages greater than 600 VAC.

Tagout

The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Tagout Device

A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

B. GENERAL

This program is intended to be in accordance with **29 CFR Subpart R Part 1910.269(d)** *Hazardous energy control (lockout/tagout) procedures for Electric Power Generation, Transmission and Distribution*. This section covers electrical generation, transmission and distribution at the University of Notre Dame (medium voltage systems).

Lockout is the primary method of isolating and securing systems, equipment or distribution pathways from potential energy sources in order to create a safe working environment. In all cases where lockout provisions exist, lockout shall be used.

Tagout is the secondary method used for isolation when an energy isolating device is not capable of being locked out. When a tagout device is used on an energy isolating device which is not capable of being locked out, the tagout device shall be attached to the operating mechanism of the energy isolating device and in plain view. The employer shall demonstrate that the tagout program will provide a level of safety equivalent to that obtained by using a lockout program. Additional means to be considered as part of the demonstration of full employee protection when tagout is used shall include the application of additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization.

In this application the energy source will be electrical energy in nature.

This specific program is intended for use by the Utilities Department Administration Group and Authorized Contractors who have familiarity and appropriate training such that they are authorized to work on the University's medium voltage system as defined herein.

C. PURPOSE AND INTENT

This procedure establishes the minimum requirements for the lockout or tagout of energy isolating devices. It shall be used to ensure that the system, equipment or distribution pathway is isolated from all potential energy sources. Lockout/Tagout shall occur before any authorized person(s) perform any activities where there is the potential that the unexpected energization, start-up or release of stored energy could cause injury.

The Lockout/Tagout Program includes the following guidance as to purpose and intent:

The control of energy during servicing and/or maintenance of generation, transmission and distribution of electrical systems and associated equipment. In the University's case this applies to systems operating at voltages greater than 600 VAC and includes but is not limited to the following:

- Generators
- Transformers
- Switchgear
- Starters
- Transmission Lines
- Distribution Feeders
- Circuit Breakers
- Switches
- Other associated Auxiliaries and Appurtenances

D. RESPONSIBILITY

Authorized contractors shall be instructed by their respective employer in the safety significance and general practices of lockout/tagout. All persons whose work may be in any lockout/tagout areas shall be instructed in the purpose and use of this Utilities Department lockout/tagout program. Administrative Group members shall also be trained and kept up to date using University training protocols.

E. LOCKOUT TAGOUT PROGRAM PROCESSES

1. GENERAL

The Utilities Administration Group shall have the primary responsibility and oversight of the Lockout/Tagout Program in areas applicable to 1910.269. This includes the Production and Distribution of electrical energy, which includes systems and equipment located throughout the Utilities Complex (Power Plant and associated adjacent facilities), Electrical Substation, Diesel Generation Facility and all electrical distribution systems leading to and including main service entrances and equipment for campus facilities.

The Utilities Administration Group shall in all cases, except those noted in the Lockout/Tagout Program applicable under 1910.147 Section E.5, be responsible for approving a Lockout/Tagout Request. Information regarding the procedure and specific details of system, equipment and distribution pathway lockout/tagout blocking points shall be maintained and available for inspection by all authorized and affected persons. The Administration Group shall approve all work that includes lockout/tagout and shall be apprised of all such events in order to ensure overall safe and reliable operation of all utility systems.

2. SWITCHING INSTRUCTIONS & CHECKLISTS

For single point sequences such as those requiring the application of a single lockout device a written procedure is not required. For situations which involve multiple blocking points or multiple switching operations a written

procedure shall be prepared for the task, which can be shared with all parties and followed as part of the work to be performed. In all cases the Operations Groups shall be informed of all lockouts and switching operations in order to be aware of system or equipment unavailability. Such notifications can be verbal in nature and should be noted in the appropriate Operations logging process.

As part of work to be performed on major electrical equipment that coincides with other lockout tagouts that fall under 1910.147 and a specific equipment or system blocking point list the LOTO will be implemented under that procedure. In these cases, the survey and LOTO shall be performed by the Operations Group. This may include such equipment as Generator Circuit Breakers and Large Motor Circuit Breakers or other associated disconnecting or isolation devices. If in such cases it is desired to have the device racked out the Administrative Group will provide that action.

II. ENERGY CONTROL PROCEDURES

A. RESPONSIBILITY FOR APPLICATION

1. The Administrative Group and Authorized Contractors working under their supervision shall have primary responsibility for the application of lockout/tagout in areas covered by this procedure in order to ensure the safe and reliable operation of the utility system. No other parties may implement lockout/tagout under any circumstances.

B. SEQUENCE OF LOCKOUT/TAGOUT

1. To initiate a Lockout/Tagout (LOTO), determine if a written switching procedure is warranted, if so, it is to be prepared by one person and reviewed by at least another person who has knowledge and understanding of the medium voltage system and the work to be performed.

2. The Administration Group or Authorized Contractor shall notify the Operations Group for their awareness of system impacts. Such notification be made to one of the following positions, given that said individual has knowledge and understanding of the request and its implications to the overall utility system:

- a. Shift Supervisor
- b. "A" Operator
- c. Power Plant Operations Supervisor
- d. Power Plant Manager

3. An authorized person shall **affix a lockout or tagout device**, or comparable mechanism when they begin work, to the extent possible circuit breakers, high voltage switches, fuses holders shall be locked out in an off or removed position.

4. When the need for a LOTO is over and all authorized persons involved in the work have been advised and acknowledge the intent to release the LOTO the LOTO devices may be removed and the system, equipment or distribution pathway returned to operational status.

5. Periodically, but no less frequently than annually this procedure and its application to be reviewed to ensure it along with the other requirements of 1910.269 (d) are being followed.

6. Training shall be provided for Authorized Administration Group personnel and Authorized Contractors by their respective employer. Retraining shall be provided whenever there is a change in energy control procedures

C. RESTORE SYSTEMS, EQUIPMENT OR DISTRIBUTION PATHWAY TO NORMAL OPERATION

1. After the servicing and/or maintenance tasks have been completed, all tools shall be removed from the area, all guards or other safety devices shall be reinstalled and all employees shall stand clear.
2. Those performing the work and responsible for clearing the LOTO must verify that there are no apparent hazards remaining.
3. The Authorized employee or Authorized contractor shall remove their lockout/tagout devices and proceed to operate or advise others that the energy isolating devices are cleared and to restore energy to the system, equipment or distribution pathway.
4. Should a lockout device remain for an authorized employee after confirmation he/she is: a) not at the facility, b) reasonable efforts have been made to contact the individual and c) ensuring he/she has knowledge of this before resuming work, the device may be removed with authorization from an Authorized employee. Such instances shall be documented on the Absent (Authorized Employee) Release Log.

III. DEPARTMENTAL SPECIFIC INFORMATION

- A. Name of Company: University of Notre Dame, Utilities Department
- B. Type(s) and Magnitude(s) of known energy and hazards:

12.47 kVAC-3 phase
4.16 kVAC-3 phase

- C. Job Title(s) of authorized individuals

Electrical Engineers(s)
Authorized Contractors

- D. Job Title(s) of affected persons; Support Staff

Assistant Vice President of Utilities and Maintenance
Sr. Director of Utilities and Maintenance
Director of Utilities
Power Plant Manager
Power Plant Operations Supervisor
Shift Supervisor
“A” Operator
Distribution Supervisor