

STATE OF OHIO



DEPARTMENT OF REHABILITATION
AND CORRECTION

SUBJECT: Electrical Safety in the Workplace	PAGE <u> 1 </u> OF <u> 5 </u> NUMBER: 10-SAF-17
RULE/CODE REFERENCE: OSHA 29 CFR	SUPERSEDES:
RELATED ACA STANDARDS:	EFFECTIVE DATE: June 10, 2011
	APPROVED: 

I. AUTHORITY

This policy is issued in compliance with Ohio Revised Code 5120.01 which delegates to the Director of the Department of Rehabilitation and Correction the authority to manage and direct the total operations of the Department and to establish such rules and regulations as the Director prescribes.

II. PURPOSE

The purpose of this policy is to establish requirements for the safe installation, maintenance, and replacement of electrical devices and distribution systems and to protect employees and inmates from the hazards associated with the servicing and maintenance of electrical machines and equipment.

III. APPLICABILITY

This policy applies to all inmates, staff, and all independent contractors of the Department of Rehabilitation and Correction who could be working on or near machines or equipment where the unexpected energization or startup or release of stored energy could occur. This policy applies to the control of energy during the servicing and/or maintenance of these machines and equipment. This policy refers to and is to be used in conjunction with Department Policy 10-SAF-11, Lockout/Tagout.

IV. DEFINITIONS

Affected Employees - Staff whose job requires him/her to operate or use a machine or equipment while service or maintenance is being performed under lockout or tagout conditions, or whose job requires him/her to work in an area when such service or maintenance is being performed.

Authorized Employees - Staff that actually performs machine service and/or equipment maintenance and servicing that requires lockout. They are the only staff that will lockout machines or equipment. These employees must have lockout/tagout training and conform to the requirements of Department Policy 10-SAF-11, Lockout/Tagout. These employees would typically include: Maintenance Repair Workers, Plumbers, Steam Fitters, Air Quality Techs, Treatment, and Power Plant personnel etc.

Lockout - The placement of a lockout device on an energy isolating device, in accordance with an established procedure, to ensure that the energy isolating device and the equipment cannot be operated until the lockout device is removed.

Other Employees - Includes all employees not previously defined as Authorized or Affected and are those persons who may be required to be in areas where lockout is used from time to time.

Qualified Employee - One who has the skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved, and as further defined in the State of Ohio classification specification for Electrician #1 and Electrician 2 class titles, series 5228, class numbers S2281 and S2282 respectively, and as specified in OSHA's Reg. 29 CFR, 1926.32 paragraph (m) definitions.

Panel Board - Single panel housing over current devices, mounted on a wall or partition, with enclosure accessible only from the front end and of a construction when the door of the enclosure is opened, no live electrical parts are exposed.

Service and/or Maintenance - Workplace activities such as construction, installing, setting up, adjusting, inspecting, modifying, and maintenance and/or servicing machines or equipment. This can also include lubricating, cleaning, or un-jamming of machines or equipment and making adjustments or tool changes where the employee may be exposed to the unexpected energization or start up of the equipment or release of hazardous energy.

Tagout - The placement of a tag-out 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 tag-out device is removed.

V. POLICY

It is the policy of the Ohio Department of Rehabilitation and Correction to comply with all safety regulations and requirements of Ohio Safety and Health Administration's (OSHA) regulation CFR 29 and all aspects of these regulations as applicable to electrical work, and as stipulated in department policy regarding lockout and tagging of circuits.

VI. PROCEDURES

A. Approved Electrical Work

The Ohio Department of Rehabilitation and Correction shall enforce the use of approved procedures when performing work on or near electrical circuits, devices, equipment or lighting as follows:

1. At no time shall employees or inmates perform work on energized circuits, devices or equipment. Lockout/tagout procedures must be followed in accordance with Department Policy 10-SAF-11, The Control of Hazardous Energy (lockout-tagout). Exception: On certain occasions it may be necessary to test certain circuits or equipment when energized. These procedures, when necessary, shall be performed or authorized by a qualified employee only. When this type of work is necessary, the procedures to be used

shall be approved in advance and describe the “what, when, where, how and why.” It will then be approved by a qualified employee and the Maintenance, Plant, or Facility Supervisor.

2. All electrical work procedures must be reviewed by a qualified employee and approved by the Maintenance, Plant, or Facility Supervisor. A job hazard analysis must be completed in accordance with Department Policy 10-SAF-14, Injury Prevention Plan.
3. The electrical work and safety procedures must be in writing and reviewed periodically with all applicable personnel.
4. A list of qualified and authorized employees who have received training and comply with the requirements of Department Policy 10-SAF-11, The Control of Hazardous Energy (lockout-tagout), shall be maintained at all times.
5. Qualified and authorized personnel shall perform lockout tagout procedures as stipulated in Department Policy 10-SAF-11, The Control of Hazardous Energy (lockout-tagout), then proceed with the work as applicable to their job duties and job description.
6. Standard operating procedures requiring routine opening and closing of current breaker devices in various plant operations may be performed by authorized employees.
7. Qualified and authorized employees shall be limited to working on 480/277 volt circuits or less. All work performed on higher voltage circuits (I. E. 13,200 or 12,470) shall be performed by an Electrical Contractor qualified and authorized to perform work on high voltage circuits and equipment and licensed in the State of Ohio.
8. Institutions that do not have a qualified employee may work with another institution to review electrical requirements with their authorized employees to develop electrical procedures to be used in their maintenance operation. These procedures will be in writing and approved by their Facility Supervisor.
9. Any additions, modifications, or alterations to existing electrical systems shall be performed by qualified personnel and/or outside contractors only and as approved by the Ohio Building Code.
10. Inmates assisting qualified or authorized employees in electrical work must be deemed qualified to perform specific tasks, as approved in writing by a qualified employee and the Maintenance, Plant, or Facility Supervisor. Training of these inmates shall be documented on the Inmate Training Form (DRC1953).
11. In the event of an electrical problem during off duty hours, weekends, or holidays, a qualified inmate, as documented on the Inmate Training Form (DRC1953), who is familiar with the electrical system, and is assigned to maintenance on 24 hour call-out, may, under the supervision of an employee, switch off, reset, or turn off a circuit breaker located in a panel board. Any additional work required will be performed by a qualified or authorized employee.

12. The following applies to call-out inmates, unqualified, and unauthorized personnel:
 - a. OSHA - 1910.334(b) (2) Reclosing circuits after protective device operation. After a circuit is de-energized by a circuit protective device, the circuit may not be manually re-energized until it has been determined that the equipment and circuit can be safely energized. The repetitive manual reclosing of circuit breakers or re-energizing circuits through replaced fuses is prohibited.

NOTE: When it can be determined from the design of the circuit and the over current devices involved that the automatic operation of a device was caused by an overload rather than a fault condition, no examination of the circuit or connected equipment is needed before the circuit is re-energized.
 - b. OSHA - 1910.334(b) (2) Requires an evaluation to determine whether equipment and circuits can be safely re-energized prior to operating a manual circuit protective device. However, as the “Note” advises, if employees can verify an overload condition from the de-energized circuit, then no examination is needed before the circuit is re-energized. In this situation, an unqualified employee could reset the breaker or replace the fuse once, if doing so would not expose the employee to electrical parts that are energized above 50 volts.
13. If the determination is made by the Maintenance, Facility, or Plant Supervisor that qualified or authorized employees are not available, or that adequate test equipment, personal protective equipment, or code required procedures are not adequate or available, the testing, procedures, or work shall be performed by an electrical contractor qualified, authorized, and licensed in the State of Ohio to perform the work,

B. Personal Protective Equipment

The facility shall furnish the following to qualified electrical personnel and assigned inmates (as determined by qualified supervision) as defined in this policy.

1. Clothing
 - a. Clothing must meet the American Society for Testing and Materials (ASTM) specification ASTM F1506-02a, Standard Performance Specification for Flame Resistant Textile Materials for Wearing Apparel for Use by Electrical Workers Exposed to Momentary Electric Arc and Related Thermal Hazards.
 - b. Each qualified electrical personnel and assigned inmate shall be provided untreated cotton long sleeved T-shirts and untreated natural fiber pants in quantities as determined by the Managing Officer. One set shall be available on site at all times and stored in the maintenance department. All clothing shall be secured when not in use. Each facility shall also establish a process to ensure that any maintenance staff required to work/test on electrical equipment are equipped with the appropriate personal protective equipment.

2. Equipment
 - a. Insulated Tool Kit (Klein 33526) or equivalently rated tools;
 - b. Non-Contact Tic Tracer;
 - c. Dielectric boots;
 - d. Appropriate rubber gloves approved for electrical work, leather protectors, storage bag;
 - e. Coverall kits, w/face shield, hard hat, hood, and storage bag (rated at 8 cal/cm sq.).
3. The appropriate personal protective equipment shall be worn as determined by the job hazard analysis process.

C. Exceptions

The following are exempt from the requirements of this policy:

1. Routine Lamp changes in lighting fixtures;
2. Work on, or testing of, low voltage circuits (50 volts or less).

Related Department Forms:

Inmate Training Form

DRC1953