DEPARTMENT OF CORRECTIONS

Policy Number: **105.124**
Title: **Electrical Safety**
Effective Date: **6/4/19**

PURPOSE: To ensure the appropriate precautions are taken to prevent exposure to electric shock and arc flash hazards.

APPLICABILITY: Department-wide

DEFINITIONS:
Arc flash hazard – a source of possible injury or damage to health associated with the release of energy caused by an electric arc.

Arc flash suit – a complete arc-rated clothing and equipment system that covers the entire body, except for the hands and feet.

Arc rating – the value attributed to materials that describes their performance to exposure to an electrical arc discharge.

Boundary, arc flash – when an arc flash hazard exists, an approach limit from an arc source at which incident energy equals 1.2 cal/cm squared (5 Joules/cm squared).

Boundary, limited approach – an approach limit at a distance from an exposed energized electrical conductor or circuit part within which a shock hazard exists.

Boundary, restricted approach – an approach limit at a distance from an exposed energized electrical conductor or circuit part within which there is an increased likelihood of electric shock, due to electrical arc-over combined with inadvertent movement.

Electrically-safe work condition – a state in which an electrical conductor or circuit part has been disconnected from energized parts, locked/tagged in accordance with established standards, tested to verify the absence of voltage, and, if necessary, temporarily grounded for personnel protection.

Near miss (close call) – an unintentional incident that could have caused damage, injury, or death, but was narrowly avoided.

Qualified person – one who has demonstrated skills and knowledge related to the construction and operation of electrical equipment and installations and has received safety training to identify the hazards and reduce the associated risk.

PROCEDURES:
A. Responsibilities
1. The Safety Director for the Department of Corrections (DOC):
a) Ensures a program audit is conducted and documented every three years, with intervals not to exceed three years. The audit includes the most recent National Fire Protection Association (NFPA) requirements (see link in References section below). The safety director must ensure deficiencies identified during the audit are documented and appropriate follow up is completed.

b) Coordinates electrical safety related work practices NFPA 70E training at intervals not to exceed three years for qualified workers, physical plant directors, and safety staff.

c) Retains program audit documentation.

2. The Appointing Authority/designee:

a) Assigns the facility physical plant director, master electrician, and safety administrator to the facility electrical safety committee.

b) Ensures control metrics and field audits are completed and documented annually, with intervals not to exceed one year

c) Ensures control metric and field audit corrective action is documented and completed for identified problems.

3. The Physical Plant Director:

a) Purchases personal protective equipment for electrical hazards. Arc-rated clothing is purchased in accordance with DOC Policy 103.2215 "Uniforms and Attire – Facilities."

b) Ensures arc-rated clothing and other required personal protective equipment is available onsite, fits properly, and is maintained in proper condition as required by NFPA 70E.

c) Ensures the appropriate arc rated clothing and personal protective equipment (PPE) is worn by staff, based on the risk assessment.

d) Ensures personal protective equipment is inspected, maintained or serviced, and replaced in accordance with NFPA 70E.

e) Ensures insulated tools are selected and maintained in accordance with NFPA 70E.

f) Ensures designated staff complete the required NFPA 70E training at an interval not to exceed three years.

g) Ensures compliance with all electrical safe work practices, including NFPA 70E.

h) Ensures completion of the Energized Electrical Work Permit, and Job Briefing and Planning Checklist, when required.

i) Ensures arc flash hazard labeling of equipment, as specified by NFPA 70E.

j) Coordinates the electrical safety committee.

4. Qualified Person

All qualified persons:

a) Must attend NFPA 70E training as required.

b) Maintain arc-rated clothing, required personal protective equipment, and tools in proper condition as required by NFPA 70E and manufacturer guidelines.

c) Ensure testing, and replacement as needed, of personal protective equipment in accordance with NFPA 70E and manufacturer guidelines.

d) Utilize the Energized Electrical Work Permit (link attached), and Job Briefing and Planning Checklist (link attached), when required.

e) Inspect insulated tools prior to each use.

f) Perform periodic inspections of personal protective equipment, arc-rated clothing, and tools in accordance with manufacturer and NFPA 70E standards. Insulated tools must be inspected prior to each use. Any item not passing inspection must be taken out of service.

g) Follow safe work practices provided by NFPA 70E.

B. Qualified workers must complete the following training:

1. NFPA 70E Electrical safety related work practices at intervals not to exceed three years.

2. Program review and emergency response (contact release) training at facility level provided by facility master electrician annually.

3. For tasks performed less than once per year, additional training or retraining by the facility master electrician.

4. Current certification in first aid, cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) training.

C. Job Planning

When required by NFPA 70E, an Energized Electrical Work Permit must be documented by a qualified person. An Energized Work Permit must include, at a minimum, the following:

1. Description of the job and individual tasks.

2. Identification of electrical hazards associated with each task.

3. Shock risk assessment in accordance with NFPA 70E 130.4 for tasks involving a shock hazard; approach boundaries, limited and restricted.

4. Arc flash risk assessment in accordance with NFPA 70E 130.5 for tasks involving arc flash hazards.

5. Work procedures, special precautions, and energy source controls.

6. Contact release procedures, and preparation for an emergency.

7. Coordination with contractors.

D. Job Briefing

1. The qualified employee must conduct a job briefing to review the job safety plan with involved employees and contractors.

2. The qualified person must use the Energized Electrical Work Permit and Job Briefing and Planning Checklist during the Job Briefing.

3. The qualified person must forward completed Energized Electrical Work Permits, and Job Briefing and Planning Checklists to the facility physical plant director, who retains the documents.

E. Incident investigation

Near misses and incidents related to electrical work resulting in injury must be investigated and documented. Incident investigations are intended to improve worker safety, not place blame.

1. Staff must notify the designated safety administrator of near misses and actual incidents related to electrical work.

2. The facility safety administrator retains incident investigation documents.

3. Staff must also follow the employee responsibilities under policies 103.241, "Workers' Compensation," and 105.125, "A Workplace Accident and Injury Reduction Program (AWAIR)."

F. Electrical Safety Committee

1. The facility electrical safety committee must include the physical plant director, master electrician, and safety administrator.

2. The facility electrical safety committee provides guidance and oversight for the facility's electrical safety program.

3. Controls

The facility electrical safety committee annually assesses facility performance on the following metrics:

a) Staff who completed, and have not completed, required training.

b) Designated staff have access to NFPA 70E.

c) Required personal protective equipment is available onsite and properly maintained.

d) Number of incidents resulting in near misses, and actual incidents, involving work with electrical hazards.

4. Field Work Audit

The facility electrical safety committee must conduct a field work audit at intervals not to exceed one year. The committee must:

a) Observe actual work being done.

b) Determine if the required processes are followed and documents properly utilized.

c) Determine if the appropriate personal protective equipment and arc-rated clothing is worn.

d) Determine if the appropriate personal protective equipment, arc-rated clothing, and tools are available and in good working condition.

e) Determine if the lockout/tagout procedures are followed and are effective in controlling hazardous energy.

f) Determine if the appropriate documentation is completed.

g) Based on the field work audit, document identified problems and completion of corrective actions.

5. The facility physical plant director retains documentation of annual field work audits and control metrics.

G. All training must be documented in the agency-approved electronic training management system, per the employee development retention schedule.

INTERNAL CONTROLS:

A. Training is documented in the agency-approved electronic training management system, per the employee development retention schedule.

B. Completed annual field work audits and control metrics, Energized Electrical Work Permits, and Job Briefing and Planning Checklists are retained by the facility physical plant director.

C. Incident investigation documents related to electrical work are retained by the facility safety administrator.

D. Program audit documentation is retained by the safety director for the department of corrections.

ACA STANDARDS: None

REFERENCES: National Fire Protection Association 70E Standard for Electrical Safety in the Workplace 2018. [National Fire Protection Association 70E standards, to which this policy refers, are available online at www.nfpa.org for no cost, or can be purchased in book form.]
Policy 103.241, "Workers' Compensation"
Policy 105.125, "A Workplace Accident and Injury Reduction Program (AWAIR)"

REPLACES: All facility policies, memos, or other communications whether verbal, written, or transmitted by electronic means regarding this topic.

ATTACHMENTS: Energized Electrical Work Permit (105.124A, available on Safety iShare site)
Job Briefing and Planning Checklist (104.124B, available on Safety iShare site)

APPROVALS:
Deputy Commissioner, Community Services
Deputy Commissioner, Facility Services
Assistant Commissioner, Operations Support
Assistant Commissioner, Facility Services