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SAFETY POLICY & PROCEDURE

Electrical Protective Insulated Rubber Gloves

SPP# 1910.137

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SAFETY POLICY & PROCEDURE

1.0 Purpose

The purpose of this safety policy and procedure is to establish guidelines for the use of Electrical Protective Insulated Rubber Gloves within the North Carolina Department of Transportation (NCDOT).

2.0 Scope and Applicability

Selected NCDOT employees work around electrical energy in the performance of their jobs. Electrical Protective ~~Devices~~ Insulated Rubber Gloves are a special class of Personal Protective Equipment (PPE). This special class of PPE provides a nonconductive barrier for employees who work near and around hazardous electrical energy sources.

This safety policy and procedure includes provisions for training, discussion on the importance of selecting, using and testing rubber insulating gloves.

This document also details the areas of responsibility for managers/unit heads, supervisors, employees, and Safety and Risk Management within NCDOT.

This safety policy and procedure affects all Traffic Services Technicians, Bridge Maintenance, and Maintenance employees who as a result of their job duties work on or near energized equipment.

3.0 Reference

This safety policy and procedure is established in accordance with Occupational Safety and Health Standards for General Industry (29 CFR 1910.137).

4.0 Policy

It is the policy of NCDOT to provide a place of employment free from recognized hazards that cause or are likely to cause death or serious physical harm to employees or the public. Therefore, work will not be performed around hazardous electrical energy sources without the proper electrical protective devices if Lockout/Tagout cannot be used. When energy hazards exist that cannot be eliminated, then engineering practices, administrative practices, safe work practices, Personal Protective Equipment (PPE), and proper training regarding Electrical Related Safe Work Practices (SPP 1910.333) will be implemented. These measures will be implemented to minimize electrical shock hazards to ensure the safety of employees.

5.0 General Responsibilities

It is the responsibility of each manager/unit head, supervisor, and employee to ensure implementation of NCDOT's safety policy and procedure on Electrical Protective ~~Devices~~ Insulated Rubber Gloves. It is also the responsibility of each NCDOT employee to report immediately any unsafe act or condition to his or her supervisor. Specific responsibilities are found in Section 6.3.

6.0 Procedure

This section provides applicable definitions, establishes general provisions, and identifies specific responsibilities required by NCDOT's safety policy and procedure on Electrical Protective Insulated Rubber Gloves.

6.1 Definitions

Arc Flash

Electrical discharge of high energy when fault current is released from a short circuit between phases or phase to ground.

Class 00 Rubber Insulated Gloves

Rubber insulated gloves rated for 500 volts AC.

Class 0 Rubber Insulated Gloves

Rubber insulated gloves rated for 1,000 volts AC.

Electrical Devices

Any equipment or device that is charged or operated by electrical current and has the potential for release of energy while repairs or maintenance are being performed.

Personal Protective Equipment (PPE)

In reference to this policy, PPE will include isolation equipment such as insulating rubber gloves.

Rubber

A generic term that includes elastomers and elastomeric compounds, regardless of origin.

Voltage, Maximum Use

The AC voltage rating of the electrical protective insulated glove designates the maximum nominal design voltage of the energized system that may be safely worked.

6.2 General Provisions

This section details the provisions of this safety policy and procedure with each provision discussed in a separate subsection. These provisions are:

- Training
- Use of Rubber Insulating Gloves
- Electrical Testing of Rubber Insulating Gloves

6.2.1 Training

Employees who work on or around hazardous electrical energy shall be trained in:

- Hazards associated with electrical energy
- Use of electrical protective equipment
- Limitations of electrical protective equipment

6.2.2 Use of Rubber Insulating Gloves

Two types of rubber insulating gloves will be used by NCDOT for protecting employees from contact with live electrical conductors:

- Low voltage, Class 00 (capable of withstanding 500 volts AC)
- Low voltage, Class 0 (capable of withstanding 1,000 volts AC)

Insulating rubber gloves are required to prevent potential employee shock or electrocution from accidental contact with energized electrical equipment.

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Traffic Signal Technicians are required to wear Class 00 rubber gloves when servicing single phase, 120 volt AC circuits in traffic signal cabinets and traffic light heads.

Rubber gloves must be visually inspected prior to each use to verify insulating integrity free of holes, tears, cuts and embedded objects.

Each glove must be conspicuously marked with the last test date and expiration date.

In addition to rubber gloves, leather gloves should be worn over rubber gloves to ensure they are not punctured or damaged during their use. For tasks that cannot be performed with outer leather gloves, rubber gloves will need to be given an air leak test.

1. Roll the bottom of the glove up about 1½ inches so that there is air in the palm and fingers of the glove.
2. Hold the glove up to your ear and squeeze it so you can listen and feel for any air leaks.
3. Replace the rubber gloves if a leak is detected.

6.2.3 Electrical Testing of Rubber Insulating Gloves

Rubber insulating gloves will be electrical tested annually to ensure that their protective ability against shock has not been compromised. This testing can be performed by Safety Test Co., located in Shelby, North Carolina using Grainger or another vendor. The gloves will be approved and stamped for use or replaced when necessary. In lieu of electrical testing, new replacement rubber insulated gloves may be purchased.

6.3 Specific Responsibilities

6.3.1 Managers/Unit Heads

Managers/Unit Heads will ensure adequate funds are available and budgeted for the purchase of electrical protective devices in their areas. They will also identify the employees affected by this safety policy and procedure. Managers/Unit Heads will obtain and coordinate the required training for the affected employees.

6.3.2 Supervisors

Supervisors will not allow any employee who has not received the required training to perform any of the tasks or activities associated with this safety policy and procedure.

Supervisors will be responsible for communicating appropriate needs to managers/unit heads and/or supervisors.

Supervisors will ensure that employees are provided with the proper PPE for their jobs.

6.3.3 Employees

Employees shall comply with all applicable guidelines contained in this safety policy and procedure.

6.3.4 Safety and Risk Management

Safety and Risk Management will provide prompt assistance to managers/unit heads, supervisors, or others as applicable on any matter concerning this safety policy and procedure. Safety and Risk Management will assist in developing or securing the required training. Safety and Risk Management will also work with Purchasing and Central Equipment Unit to ensure that all newly purchased electrical protective insulated rubber gloves comply with current safety regulations.

Safety Engineers will provide consultative and audit assistance to ensure effective implementation of this safety policy and procedure