

Survey on Electrical Personal Protective Equipment and Safety Training

Posted by Kentucky

Background and Question Posed:

The Employee Safety Branch of our Cabinet is currently reviewing the Standard for Electrical Safety in the Workplace (NFPA 70E) and evaluating the need for flame resistant clothing and other electrical personal protective equipment (PPE) for our traffic signal technicians. As we move forward, we also see a need to train our signal technicians on (1) electrical hazards that they might encounter in the maintenance of signals and roadway lighting and (2) how to select the appropriate PPE depending on the specific activity being performed.

To assist in this effort, we would appreciate responses to the following questions:

- Does your agency have a specific policy/requirements regarding electrical personal protective equipment (such as flame resistant clothing, insulated tools, face shields, balaclavas, etc.) for traffic signal technicians or others that might be exposed to electrical hazards? If so, could you provide a copy, details, or link?
- Is your agency aware of any existing training that addresses electrical hazards for traffic signal technicians and/or the selection of appropriate PPE for signal/roadway lighting maintenance activities? If so, could you provide details of the training course/source?

Survey Responses:

State	Contact	Question #1 Does your agency have any policy/requirements for FR clothing for signal technicians?	Question #2 Are you aware of training for electrical safety that is specific to signal technicians?	Related Comments/Attachments/Links
Alabama	Kerry NeSmith	None.	Nothing other than IMSA.	
Alaska	Jeff Jeffers	Type of PPE described is not specifically required for signals or lighting technicians.	Technicians have attended NFPA 70E training.	
Arizona	Richard Moeur Karim Rashid	Number of staff are using electrical-specific personal protective equipment in accordance with IMSA and other recommendations such as arc-flash-resistant clothing, but that no uniform guidelines exist other than standard ADOT guidance on protective equipment for workers in the right of way. NFPA 70E is used as reference.	No response.	Copy of PPE usage policy (SAF501)
Arkansas	Joseph Hawkins	No specific policy/requirements. Investigated personnel voltage detectors for inspectors, but they are designed for higher voltages than our roadway lighting projects.	We have hosted the local Utility's Safety Demo trailer that talked about safety around power lines. However, this was not a formal safety class.	Link to personal voltage detectors: http://www.hdelectriccompany.com/assets/files/HDE-V-Watch-Personal-Voltage-Detector-PR-w_photo.pdf
Connecticut	Charles Harlow	Lighting - Have an arc flash policy. Require project contractors to hire arc flash consultants to conduct arc flash analysis and identify and properly label all electrical equipment in accordance with NEC, NFPA-70E, and OSHA requirements. Workers are equipped with arc flash clothing and personal protective equipment and tools. Standard procedure for our highway lighting designers is to make sure the power is turned off before any work begins. Signals - Have developed an internal document/presentation, a guide for arc flash safety of traffic electrical cabinets, and the type of protective gear the people working on the cabinets should use. Document/presentation is also used as training material. Have developed a list of required gear based on NFPA 70E. The gear shall meet the requirements of Arc Flash Category 1 (Hard Hat, Safety Glasses, Natural Fiber Long Sleeved shirt or Jacket, Natural Fiber Trousers, leather EH Rated Steel Toed Safety Shoes).	Lighting - District crews are arc-flash trained. Signals - Not aware of any training other than internal documents.	Safety newsletter - Arc Flash Safety Safety Powerpoint - Arc Flash Safety Guide
Delaware	Mark Luszc	Signals/ITS: Arc flash analysis has determined that there is minimal hazard related to a typical standalone traffic signal cabinet and associated equipment. PPE requirements are 100% cotton clothing. Evaluation is currently underway for potentially higher risk ITS/communications such as HUB buildings. Lighting techs: All electricians are provided HRC 2 uniforms they wear daily, with coveralls that can be worn over their uniforms that will get them to a level 3.	Signals/ITS techs: We have provided OSHA/NFPA arc flash training in the past, but the training is gearing towards higher power systems. Lock-out/tag-out is generally not appropriate for traffic signals as the danger to the public in turning the traffic signal off, outweighs the danger to a trained Signal Tech in working on a live system. Lighting techs: The electricians do lock and tag the source when repairing the systems. Have done the survey for roadway lights and found significant risks in most systems, Hazard Risk Category 3 and 4. Some of the risk can be engineered out, but some at HRC 3 will remain because it involves the power source from the utility.	
Illinois	Kyle Armstrong	Do not have a specific policy for electrical PPE.	Only aware of IMSA, but not a requirement for their employees.	
Maine	Stephen Landry	Supply electricians with level 2 arc flash clothing and gear including face shields and insulated tools (1000V). Also work on lighting with 480 v service, which is most hazardous condition. To minimize risks, converting all services to 240 as new projects are scoped. Also installing external disconnects. Have engineer on contract to process arc flash calculations for all our signals and remote offices. Most traffic signal cabinets are level (0). However, NFPA had done away with level 0, so now all cabinets are level 1. Also performed comparison on the service wire using common equipment to see if wire would change the rating. Sample calcs provided.	Have used National Technology Transfer (NTT). Class was Electrical Safety for Power Generation Transmission and Distribution. Good class for explaining arc flash requirements, very vivid pictures, and useful information. Also do IMSA Level 1 and 2, field technician.	Sticker for signal cabinet.
Massachusetts	Neil Boudreau	No current policy but will be reviewed in coming months.	Following guidance provided by IMSA and Mass. Standard Electrical Code. Arc flash references: OSHA 29 code of federal regulations (CFR) Part 1910 Subpart S. NFPA 70-2002 National Electrical Code Arc Flash.com Information Resource Center 1888 326 9244 ArcFlashSafety/eHow.com	
Michigan	Paula Corlett	No specific policy/requirements. Did complete a review at some point in time, but determined that nothing was necessary at this time.	Not aware of any training.	
Mississippi	James Sullivan	Require following PPE for signal techs: - Safety vest/shirt - Hard hat - Insulated gloves - Body harness/lanyard - Safety glasses - Hearing protection - Safety shoes (recommend rather than required)	Not aware of anything other than what might be offered through IMSA.	
Missouri	Julie Stotlemeyer	No specific policy/requirements. Provide insulated tools and electrical-rated footwear and hard hats.	No training, but discussing possible NFPA 70E opportunities with local company Integrated Safety and Utility.	Link for source of NFPA70E training: http://www.integratedsafetyandutility.com/
Nebraska	Dan Waddle	No policy.	No training.	
Nevada	Thomas Moore	Nevada has no policy or requirements.	Other than IMSA, not aware of any training.	
New Mexico	Afshin Jian	Do not have a policy. Tools do need to be insulated.	Not aware of any training.	
North Carolina	Gregory Fuller	Arc Flash hazard is mainly applicable to working with high voltage/ampereage (480 volts and greater) which NCDOT techs do not work with. Shock hazard does exist, but not Arc Flash hazard. NCDOT Electrical Safety Program consists of 3 safety policy and procedures from NCDOT Safety Policy and Procedures Manual. They can be found on "Inside NCDOT" portal under Business and Administration. Excerpts relevant to signal techs: # 1910.301 for Electrical Related Safe Work Practices (Revised 1997): "6.2.6 Protective Equipment Employees working in areas where there are potential electrical hazards will be provided with and use protective equipment that is appropriate for the work to be performed. (Traffic Control Technicians who service traffic signal cabinets at ground level will not be required to wear electrical safety boots or rubber insulating gloves. This is because of the low source voltages of the traffic signal cabinets and the concrete pad on which the cabinet resides. However, safe electrical work practices shall still be followed.)" # 1910.137 for Electrical Protective Devices (Revised 1997): "Insulating rubber gloves are required to prevent employee electrocution from accidental contact with energized equipment. (Traffic Signal Technicians are not required to wear rubber gloves when servicing single phase, 120 volt source traffic signal cabinets.)" #1910.147 for Lockout/Tagout (Revised 2015)	Primarily rely on in-house training and OJT. Also send techs to IMSA Level I & II.	
South Carolina	Christina Bennett	The SDDOT does not have any traffic signal or roadway lighting technicians. The following is what minimal information we have in our Employee Safety Manual on electrical hazards: · Employee's shall be required to wear "substantial" footwear made of leather or other equally firm material whenever there is a danger of injury to the feet through falling or moving objects or from burning, cutting, penetration, electrical, or like hazards. · Safety hard hats shall be worn for head protection from impact and penetration from falling and flying objects and from limited electrical shock. · Workmen shall stand on dry footing when using electrical tools. · Metal ladders are electrical conductors, and shall not be used near electrical equipment or conductors. · Insulated pliers shall be used for electrical work . · Only screwdrivers with insulated handles shall be used for electrical work. Screwdrivers with blades or rivets extending through the handle shall not be used for electrical work.	No, but would be interested in seeing what is out there. We do want to eventually move to having signal and lighting technicians on staff, and identifying the required training would be a necessary part of doing this.	
Virginia	Ray Khoury	Yes. Have a general electrical safety policy (attached) that is applicable to Signal Techs. Specific policy/requirements are local district practices since the appropriate PPE is dependent on the specific task and activity. There is also a personal safety requirement that is included in all employees' job performance plan.	OSHA, NFPA 70E, and IMSA. OSHA, NFPA, and IMSA have written standards and regulations to include training to keep workers safe from electrical hazards. Also use ITE Traffic Signal Maintenance Manual as a guide.	Safety Directive on Electrical Work Safety Directive on Electrical Protective Devices
Wisconsin	William McNary	Yes, the Electrician Worker Curriculum (attached) incorporates electrical personal protective equipment needs and training. Each electrician completes an Electricians Curriculum Checklist (attached) and returns it to the WisDOT Risk and Safety unit.	WisDOT ARC Flash Electrical Safety NFPA 70E Training which is mandatory for all field staff every 3 years. The training is 6-hours and is meant to meet the new standard for OSHA. Objectives are; describe OSHA & NFPA 70E requirements; apply qualified field worker responsibilities; explain proper lockout/tagout procedures.	Electrician's curriculum checklist Electrician worker curriculum
Wyoming	Rick Amen	Over the past couple of years, have been labeling new service points with the appropriate warning label and recommended protective clothing requirements. Enclosures downstream from service points are not currently being labelled since service points are the first priority, but have been recommended to be treated with the same PPE as the service point associated with that equipment. Appropriate PPE best determined from the NEC based on the maximum available fault current calculated. Several calculators online.	Not aware of any training. Put on own training. Put together several slide shows for technicians regarding arc flash.	Powerpoint on arc flash and labeling