

## ELECTRIC SAFETY STANDARDS

### SECTION 1: DEFINITIONS

(a) Utilities – The term "utilities" includes all investor-owned and municipal electric corporations subject to the Commission's jurisdiction that own or operate transmission or distribution facilities, whether fully or lightly regulated. As appropriate, the term also includes companies subject to our jurisdiction that own or operate electric generating facilities within the State, whether fully or lightly regulated.

(b) Electric facilities – The term “electric facilities” means and refers to all electric plant, as that term is defined in Public Service Law §2(12), that is used to modulate, transmit, and/or distribute electricity, or is related to its modulation, transmission, and/or distribution. The term “overhead facilities” generally includes the electric facilities that are part of a utility’s overhead distribution system (e.g., the system that serves rural areas and includes towers, poles, and aerial cable and conductors). The term “underground facilities” generally includes the electric facilities that are part of a utility’s underground distribution system (e.g., the system that serves urban areas and includes manholes, service boxes, and underground cable and conductors).

(c) Stray Voltage –The term “stray voltage” means voltage conditions on electric facilities that should not ordinarily exist. These conditions may be due to one or more factors, including, but not limited to, damaged cables, deteriorated, frayed or missing insulation, improper maintenance, or improper installation.

(d) Streetlights – The term “streetlights” means and includes utility- and municipal owned streetlights located on, along, or adjacent to public thoroughfares and areas and traffic signal poles and devices; it does not include privately-owned light fixtures, such as those located in private parking lots.

(e) Stray Voltage Testing – The process of checking an electric facility for stray voltage using a device capable of reliably detecting and audibly and/or visually signaling voltage in the range of 6 to 600 volts.

(f) Findings – Any confirmed voltage reading on an electric facility or streetlight greater than or equal to 1V measured using a volt meter and a 500 ohm shunt resistor.

(g) Mitigation –Corrective actions performed by the utility to address the stray voltage findings.

(h) Inspection – A careful and critical examination of an electric facility by a qualified individual to determine the condition of the facility and the potential for it to cause or lead to safety hazards or adverse effects on reliability.

## SECTION 2: NATIONAL ELECTRIC SAFETY CODE COMPLIANCE

- (a) The installation, construction, maintenance, and operation of electric facilities shall comply with the latest version of the National Electric Safety Code (NESC), except where a utility's practices, procedures, and protocols are more stringent.
- (b) Utilities are not required to retrofit their existing facilities to comply with the latest version of the NESC, unless the latest version of the NESC requires a retrofit.
- (c) To the extent that projects currently being constructed do not comply with the NESC or a utility's more stringent standards, exemption from compliance will be considered on a case-by-case basis.
- (d) If a utility believes that it cannot satisfy any provision of the NESC for a valid technical reason, it may petition the Commission for an exemption from compliance with that provision.

## SECTION 3: STRAY VOLTAGE TESTING

- (a) Stray voltage testing shall be conducted on all utility facilities that are capable of conducting electricity and are publicly accessible. Testing is not required on customer meters and customer-owned facilities, except municipal-owned streetlights.
- (b) Stray voltage testing shall be conducted on all streetlights on an annual basis.
- (c) For underground electric facilities that are publicly accessible, including, but not limited to, manholes, service boxes, and transformer vaults, stray voltage testing shall be conducted on the exposed surfaces of the facilities. Handholes that are constructed of fiberglass or other non-conductive materials need not be tested.
- (d) Stray voltage testing of streetlights shall be conducted when the light is activated (i.e., at night).
- (e) Stray voltage testing shall be conducted on an annual basis for all underground electric facilities that are publicly accessible, including, but not limited to, manholes, service boxes and transformer vaults. Testing shall be conducted on overhead distribution facilities, underground residential distribution facilities, overhead and underground transmission facilities, and substation fences at least once every five years. This testing may be conducted concurrently with the facility inspection required in Section 4 of these standards.
- (f) If a streetlight to which a utility provides service is owned by another entity, and that entity conducts stray voltage testing meeting these safety standards, the utility may substitute that testing program for its own, provided the utility can certify the other entity's results.

- (g) All equipment used for stray voltage testing must be certified by an independent test laboratory as being able to reliably detect voltages of 6 to 600 volts.
- (h) Any facility for which a voltage finding is discovered shall be guarded by the utility immediately and continuously until the utility has performed mitigation and made the area safe. Mitigation shall be completed on any stray voltage findings.
- (i) In instances where a stray voltage finding is determined to be caused by customer-owned equipment, the area must be immediately made safe. The utility shall immediately notify the customer or a responsible person associated with the premises or the customer-owned facility of the unsafe condition and the need for the customer to arrange for a permanent repair to the customer's equipment.
- (j) In the event of a finding on an electric facility or streetlight during stray voltage testing, the utility shall test for stray voltage on all publicly accessible structures and sidewalks within a minimum 30 foot radius of the electric facility or streetlight.
- (k) In each instance where stray voltage is determined to be caused by a utility-owned facility, best efforts shall be used to effect a permanent repair of the facility as soon as possible, but not later than 45 days after discovery of the stray voltage condition. A temporary repair to the facility may remain in place for more than 45 days only in extraordinary circumstances, and in such event the utility shall periodically perform site visits to monitor the condition of the temporary repair. All exceptions must be identified and justified as part of the reporting requirements under Section 9.

#### SECTION 4: INSPECTIONS

- (a) Inspections shall include, at a minimum, visual examination of towers, poles, guy wires, risers, overhead cables and conductors, transformers, breakers, switches, and other aboveground equipment and facilities, and of the interior of manholes, service boxes, vaults, and other underground structures. Where debris or water is found in an underground structure, it must be removed before commencing the inspection so that all of the facilities in the structure, and the structure itself, may be fully inspected. Fiberglass handholes and pad-mounted transformers used in underground residential distribution systems are exempt from the interior inspection requirement.
- (b) Inspection of equipment should be performed in a manner that allows the inspector to examine its components, except those that are ordinarily encased in sealed compartments. Utilities need not perform destructive testing as part of this inspection program, except as otherwise required by their more intensive inspection procedures.
- (c) When a visual inspection indicates the need for a more intensive examination, the utilities shall perform infrared testing and/or other inspection procedures.
- (d) When an inspection reveals a hazardous condition or other problem, whether related to stray voltage or otherwise, the utility must make all repairs necessary to eliminate the condition.

(e) All electric facilities shall be inspected at least once every five years. Certain facilities may warrant shorter inspection cycles.

(f) Each utility shall develop and implement a formal inspection program that complies with these safety standards.

(g) Inspections conducted during routine maintenance and other work not directly related to the inspection program may count as an inspection visit, provided that the inspection is performed using the same safety and reliability criteria and to the same extent as would otherwise be required under these standards. Inspections occurring during these field visits must be properly documented and certified.

(h) This inspection requirement is intended to complement, not supplant, the inspections any utility already performs; to the extent a utility's inspection program is broader or more intensive than the program described herein, the utility should continue to follow its own program.

(i) The testing and inspection programs may be combined, where practical and feasible, provided the synergy satisfies all the requirements contained within these safety standards.

(j) As part of the inspection process, deficiencies identified shall be categorized by the time period for the repair based on the severity of the condition. When prioritizing deficiencies, utilities should carefully account for the safety and operational effects should the facility fail prior to repair. Utilities will prioritize deficiencies by three categories:

Level I – repair as soon as possible but not longer than one week. A Level I deficiency is an actual or imminent safety hazard to the public or poses a serious and immediate threat to the delivery of power. Critical safety hazards present at the time of the inspection shall be guarded until the hazard is mitigated.

Level II – repair within one year. A Level II deficiency is likely to fail prior to the next inspection cycle and represent a threat to safety and/or reliability should a failure occur prior to repair.

Level III – repair within three years. A Level III deficiency does not present immediate safety or operational concerns and would likely have minimum impact on the safe and reliable delivery of power if it does fail prior to repair.

Level IV – condition found but repairs not needed at this time. Level IV is used to track atypical conditions that do not require repair within a five year timeframe. This level should be used for future monitoring purposes and planning proactive maintenance activities.

(k) Utilities are expected to permanently repair deficiencies identified by the inspection program within the priority time period established for its classification. All repair time periods are based on the initial date of discovery.

(l) When a temporary repair is located during an inspection or made by the company, best efforts shall be used to affect a permanent repair of the facility within 90 days. A temporary repair to the facility may remain in place for more than 90 days only in extraordinary circumstances, which may include major storms that require significant repair activity. In such event, the utility shall periodically perform site visits to monitor the condition of the temporary repair. All exceptions must be identified and justified as part of the reporting requirements under Section 9.

## SECTION 5: QUALITY ASSURANCE

Each utility shall develop a quality assurance program to ensure timely and proper compliance with these safety standards. The quality assurance program shall be independent of the stray voltage testing and visual inspection programs. The management and personnel performing quality assurance activities shall be separate from those performing the required stray voltage testing and inspections.

(a) With regard to inspections, the quality assurance program should ensure that inspections are being performed on all facilities and that deficiencies are being properly identified and categorized for repair. The program should also verify that permanent repairs are made and the timeliness of the repairs.

## SECTION 6: RECORDKEEPING

(a) Each utility shall develop procedures and protocols to track the stray voltage testing dates and results for each electric facility.

(b) Each utility shall develop procedures and protocols to track the inspection dates and results for each electric facility.

(c) Each utility shall develop procedures and protocols to track the permanent repairs made based on inspection data and whether the repairs were made in the appropriate timeframe. An inventory of outstanding repairs by priority level should also be maintained.

(d) Each utility shall develop procedures and protocols to track temporary repairs made on the system and whether these locations were permanently repaired within 90 days after making or locating a temporary repair.

(e) These records shall be kept in a manner that is readily accessible and searchable, continuously updated, and subject to review and audit by Staff and the Commission.

## SECTION 7: CERTIFICATION

- (a) Written certification of the completion and results of every stray voltage test and inspection undertaken and that all unsafe conditions identified have been remediated shall be made by an appropriate utility employee.
- (b) The President or officer of each utility with direct responsibility for overseeing stray voltage testing shall provide an annual certification to the Commission that the utility exercised due diligence in carrying out a plan designed to meet the stray voltage testing requirements, including quality assurance, and, to the best of the officer's knowledge, the utility has tested all of its publicly accessible electric facilities and streetlights, except those identified in the February 15 report.
- (c) The President or officer of each utility with direct responsibility for overseeing facility inspections shall provide an annual certification to the Commission that the utility has exercised due diligence in carrying out a plan designed to meet the inspection requirements, including quality assurance, and, to the best of the officer's knowledge, the utility has inspected the requisite number of electric facilities. Additionally, at the end of five-year inspection cycle, the officer shall certify that the utility has exercised due diligence in carrying out a plan designed to meet the inspection requirements, including quality assurance, and, to the best of the officer's knowledge, the utility has inspected all of its electric facilities during the previous five year period, except those identified in the February 15 report.
- (d) Each utility shall maintain its written certifications and other documentary proof of its testing and inspections at its corporate office located within the State of New York. These documents shall be available to the public for review upon request and without conditions.

## SECTION 8: NOTIFICATION REQUIREMENTS

Each utility shall comply with the Event Notification Requirements attached hereto.

## SECTION 9: REPORTING REQUIREMENTS

- (a) Each utility shall file a comprehensive report by February 15 each year that:
1. details the results of stray voltage tests and inspections conducted over the 12-month period ending December 31 of the prior calendar year;
  2. addresses the performance mechanism specified in Section 10;
  3. contains the certifications described in Section 7;
  4. contains a breakdown of the voltage findings in a tabular format as detailed in Attachment 1; for all findings that result in a reading of 1 V or more after completion of mitigation efforts, the utilities shall provide a detailed report on those efforts;

5. contains a breakdown of the shock reports received from the public as detailed in Attachment 2;
6. discusses the analyses undertaken on the causes of stray voltage within the utility's electric system, the conclusions drawn there from, the preventative and remedial measures identified, and the utility's plans to implement those measures;
7. describes the priority levels used to gauge the severity of a deficiency, including repair timeframes, and details the requirements for training personnel to properly identify and categorize deficiencies;
8. contains a breakdown of facilities to be inspected, unique inspection conducted per year, and the cumulative number of unique inspections conducted to meet the five year requirement;
9. contains a breakdown of the deficiencies found, permanent repair actions taken by year, whether the repair was completed within the required timeframe, and the number of deficiencies awaiting repair. The information should be provided on a yearly basis by priority level and by equipment groupings as detailed in Attachment 3;
10. contains a review and analysis of the inspection results. Areas of concern should be identified along with remedial actions or future plans to alleviate inadequacies in current programs or assets;
11. describes the quality assurance program and provides the results from quality assurance activities conducted during the year; and
12. Includes all other information that is pertinent to the issues addressed by the safety standards.

#### SECTION 10: PERFORMANCE MECHANISM

- (a) The annual performance target for stray voltage testing shall be 100% of all electric facilities and streetlights that must be tested. Facilities that are inaccessible and which pose no risk to public health and safety will not be considered in the determination of whether the target has been achieved.
- (b) Failure to achieve the annual performance target for stray voltage testing shall result in a rate adjustment of 75 basis points.

(c) The annual performance target for inspections shall be based on the percentage of the average number of electric facilities that must be inspected each year in order to comply with the five-year inspection cycle. That is, the target is based on the one-fifth of the total number of the utility's electric facilities. The specific targets will be as follows:

First year inspection goal 85% of annual target

Second year inspection goal 90% of annual target

Annual inspection goal thereafter 95% of annual target

Fifth year inspection goal 100% of all facilities to be inspected

(d) Failure to achieve the annual performance target for inspections shall result in a rate adjustment of 75 basis points.

ATTACHMENT 1

Summary of Energized Objects

	Initial Readings				Readings after Mitigation		
	1-4.4 V	4.5-24.9 V	> 25 V	Totals	< 1 V	1 V-4.4 V	>4.5 V
<b>Distribution Facilities</b>							
Pole							
Ground							
Guy							
Riser							
Other							
<b>Underground Facilities</b>							
Service Box							
Manhole							
Padmount Switchgear							
Padmount Transformer							
Vault – Cover/Door							
Pedestal							
Other							
<b>Street Lights / Traffic Signals</b>							
Metal Street Light Pole							
Traffic Signal Pole							
Pedestrian Crossing Pole							
Traffic Control Box							
Other							
<b>Substation Fences</b>							
Fence							
Other							
<b>Transmission (Total)</b>							
Lattice Tower							
Pole							
Ground							
Guy							
Other							
<b>Miscellaneous Facilities</b>							
Sidewalk							
Gate/Fence/Awning							
Control Box							
Scaffolding							
Bus Shelter							
Fire Hydrant							
Phone Booth							
Control Box							
Water Pipe							
Riser							
Other							

ATTACHMENT 2

**Summary of Shock Reports from the Public**

	Quarterly Update	Yearly Total
<b>I. Total Shock Calls Received:</b>		
<b>Unsubstantiated Normally Energized Equipment Stray Voltage:</b> Person Animal		
<b>II. Injuries Sustained/Medical Attention Received:</b>		
Person Animal		
<b>III. Stray Voltage Source:</b>		
<b>Utility Responsibility (Total)</b> Overhead Distribution System Underground Distribution System Transmission System <b>Other Utility/Gov't Agency (Total)</b> Streetlight Other (Total) <b>Customer Responsibility (Total)</b>		
<b>IV. Stray Voltage Range:</b>		
1.0V to 4.4V 4.5V to 24.9V 25V and above Unknown		

Detail of Deficiencies by Facilities															
Priority Level	I	II	III												
Repair Expected	Within 1 week	Within 1 year	Within 3 years	Within 1 week	Within 1 year	Within 3 years	Within 1 week	Within 1 year	Within 3 years	Within 1 week	Within 1 year	Within 3 years	Within 1 week	Within 1 year	Within 3 years
<b>Overhead Facilities</b>															
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
<b>Total Overhead Facilities</b>															
<b>Underground Facilities</b>															
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
<b>Total Underground Facilities</b>															
<b>Pad Mount Facilities</b>															
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
<b>Total Pad Mount Facilities</b>															
<b>Streetlight Facilities</b>															
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
<b>Total Streetlight Facilities</b>															
<b>Transmission Facilities</b>															
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
<b>Total Transmission Facilities</b>															

ATTACHMENT 3

Summary of Deficiencies and Repair Activity Resulting from the Inspection Process							
Year	Priority Level / Repair Expected		Deficiencies Found (Total)	Repaired In Time Frame	Repaired - Overdue	Not Repaired - Not Due	Not Repaired - Overdue
	I	Within 1 week					
	II	Within 1 year					
	III	Within 3 years					
	IV	N/A					
	I	Within 1 week					
	II	Within 1 year					
	III	Within 3 years					
	IV	N/A					
	I	Within 1 week					
	II	Within 1 year					
	III	Within 3 years					
	IV	N/A					
	I	Within 1 week					
	II	Within 1 year					
	III	Within 3 years					
	IV	N/A					
	I	Within 1 week					
	II	Within 1 year					
	III	Within 3 years					
	IV	N/A					