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February 16, 2016

Via Electronic Filing
Hon. Kathleen H. Burgess
Secretary to the Commission
New York State Public Service Commission
Empire State Plaza, Agency Building 3
Albany, NY 12223-1350

Re: Case 04-M-0159, Proceeding on the Motion of the Commission to Examine the Safety of Electric Transmission and Distribution Systems

Consolidated Edison Company of New York, Inc.'s *2015 Contact Voltage Test and Facility Inspection Annual Report*

Dear Secretary Burgess:

Consolidated Edison Company of New York, Inc. submits for filing its *2015 Contact Voltage Test and Facility Inspection Annual Report* ("Report"). The Report is submitted pursuant to the requirements of the Public Service Commission's Electric Safety Standards issued in the referenced proceeding.

Thank you for your assistance.

Sincerely,

Att:

2015

CONTACT VOLTAGE TEST &

FACILITY INSPECTION

ANNUAL REPORT

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.

Report on the results of contact voltage tests & facility inspections for the period beginning January 1, 2015 and ending on December 31, 2015.

February 15, 2016

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I. Background

The New York State Public Service Commission's ("PSC" or "Commission") Electric Safety Standards ("Safety Standards"), issued on January 5, 2005 in Case 04-M-0159, with subsequent revisions issued on July 21, 2005, December 15, 2008, March 22, 2013 and January 13, 2015, require utilities to conduct an annual system-wide contact (stray) voltage detection program for underground assets and municipality owned streetlights and a five-year equipment inspection program to mitigate contact (stray) voltage risks to the public and promote reliability.

The term "stray voltage" is historically associated with neutral-to-earth voltage (NEV) encountered by farm livestock at contact points. Stray voltage is a normally occurring phenomenon that can be found at low levels between two contact points at any location where electricity is grounded.[1] In recent years, the term "contact voltage" has been used to describe voltage resulting from abnormal power system conditions associated with low voltage secondary system faults.

This report describes Consolidated Edison Company of New York, Inc.'s ("Con Edison" or "the Company") contact voltage detection program and equipment inspection program conducted in 2015.

II. Company Overview

Con Edison is an investor-owned utility that provides electric service to approximately 3.3 million customers in a service area of approximately 604 square miles within New York State encompassing New York City, except the Rockaway Peninsula, and most of Westchester County. The Company operates an electric transmission and distribution ("T&D") system that provides a high level of reliability in a very dense urban environment.

[1] Electrical systems — both farm systems and utility distribution systems — are grounded to the earth to ensure safety and reliability. Inevitably, some current flows through the earth at each point where the electrical system is grounded and a small voltage develops. This voltage is called neutral-to-earth voltage (NEV). When NEV is found at animal contact points, it is frequently called stray voltage. Stray voltage is this small voltage that is measured between two points that livestock can simultaneously touch. If these points are simultaneously contacted by an animal, a current will flow through the animal. See, http://psc.wi.gov/utilityInfo/electric/documents/strayVoltage/svUpdate2006.pdf

- Distribution

  a. *Underground* – The underground system has approximately 278,000 manholes, service boxes, transformer vaults, and above ground pad mounted structures; approximately 25,400 miles of underground duct; and approximately 95,700 miles of underground cable including primary, secondary and service cables. Underground network cables operating at primary voltages of 33kV, 27 kV and 13.8 kV supply underground transformers that step the primary voltages down to 120/208 distribution voltages that are used by customers.

  b. *Overhead* – The overhead system includes: 168 auto loops, **7 -** 4 kV multi-bank substations, 219 – 4 kV unit substations, approximately 273,000 Con Edison owned poles, and approximately 34,000 miles of overhead wires including primary, secondary, and services. Cables operating at primary voltages of 33 kV, 27 kV, 13.8 kV, and 4 kV supply approximately 50,800 overhead transformers that step the primary voltages down to 120/208/240 distribution voltages that are used by customers.

  c. *Streetlights* – Con Edison does not own, install, or maintain streetlights and traffic signals within its service territory. The New York City Department of Transportation (NYCDOT) and the local Westchester municipalities primarily own the streetlights and traffic signals in New York City and Westchester County. There are approximately 185,000 metal pole street lights and metal pole traffic signals within Con Edison's service territory.

- Transmission

  a. *Underground* – The underground transmission system delivers power at 69 kV, 138 kV, and 345 kV to various switching substations and area substations. The underground system has approximately 2,200 underground transmission facilities and approximately 810 circuit miles of cable. Of the 810 circuit miles, Con Edison owns approximately 727 miles.

  b. *Overhead* - The overhead transmission system consists of 138 kV and 345 kV high voltage cable supported on approximately 1,220 towers and poles on rights-of-way located for the most part, north of New York City and terminating in Westchester County where the underground transmission system begins.

- Substations and Unit Substations

  There are 41 transmission substations, 62 area substations, 226 unit substations and multi-banks.

III. Inspection and Contact Voltage Testing Frequency for Company and Municipally Owned Facilities

The Safety Standards require that all electric facilities be inspected at least once every five years.

The Safety Standards require annual contact voltage testing for all streetlights and for all underground electric facilities that are publicly accessible, including, but not limited to, manholes, service boxes and transformer vaults.

The Safety Standards require contact voltage testing at least once every five years for overhead distribution facilities, underground residential distribution facilities, overhead and underground transmission facilities, and substation fences. This testing may be conducted concurrently with the five-year facility inspection by the Safety Standards.[2]

The following seven categories of facilities in Con Edison's service area must be inspected every five years and tested for the presence of contact voltage annually or every five years:

- *Underground Distribution* – There are approximately 278,000 underground facilities in Con Edison's Distribution systems. A subsurface structure is defined as any manhole (MH), service box (SB), transformer vaults (V,VS), transformer manholes (TM), customer boxes (CB), injunction boxes (IJ), P-Boxes (PB), and T-Tap boxes and switchgears specifically associated with Underground Residential Distribution systems ("URD"). All Underground Distribution facilities are inspected every five years and are tested for contact voltage annually in either the manual and mobile contact voltage testing program, except for URD facilities, which are tested every five years. The contact voltage testing criteria include all subsurface structures at grade level, including above ground, pad-mounted structures.

- *Street Lights and Traffic Signals* – There are approximately 185,000 metal pole street lights and traffic signals within Con Edison's service territory. Streetlights and traffic signals are included in the annual contact voltage testing program. Con Edison does not own any metal pole streetlights, and therefore, these structures are not included in the facility inspection program. Area and street lighting that is privately owned is not included in the contact voltage testing program, as per the Safety Standards. The contact voltage testing criteria include all municipally owned metal pole streetlights, traffic signals, and pedestrian crosswalk signals located on publicly accessible thoroughfares and areas that have

[2] The Public Service Commission's "Order Granting Petition In Part And Modifying Electric Safety Standards," issued March 22, 2013 in Case 04-M-0159 ("March 22, 2013 Order"), modified the Safety Standards to change the contact voltage test frequency from one year to five years for overhead distribution facilities, underground residential distribution facilities, overhead and underground transmission facilities, and substation fences.

streetlights directly supplied by the Company. All contact voltage testing of street lights is performed at night while the fixtures are energized.

- *Overhead Distribution* – There are approximately 273,000 distribution pole structures that support electric facilities in Con Edison's overhead distribution system. Distribution overhead facilities are inspected and tested for contact voltage every five years. The contact voltage testing criteria include all utility-owned or joint use wooden poles with utility electrical facilities located on public thoroughfares or customer property, including backyards or alleys. Contact voltage tests are performed on all wooden poles with metallic attachments, such as ground wires, ground rods, anchor guy wires, riser pipes, or any electrical equipment within reach of the general public.

- *Substations* – Con Edison's 103 substations are inspected and tested for contact voltage every five years. The contact voltage testing criteria consist of perimeter fencing and other electrically conductive materials where such materials are accessible to the general public. These materials include, but are not limited to, fences, doors, roll-up gates, metallic delivery boxes, dielectric fluid delivery ports and Siamese connections.

- *Unit Substations* – Con Edison's 226 - 4kV multi-bank and unit stations are required to be inspected and tested for contact voltage every five years. The contact voltage testing criteria consist of perimeter fencing and other electrically conductive materials where such materials are accessible to the general public. These materials include but are not limited to fences, doors, roll-up gates, metallic delivery boxes, and Siamese connections.

- *Overhead Transmission* – Con Edison's overhead transmission system includes 1,220 individual poles or towers. These transmission structures support circuit voltages of 69 kilovolts and greater. Structures that support circuits of lower voltage in addition to the transmission voltage levels are included in this category. Con Edison's overhead transmission structures are inspected and tested for contact voltage every five years. The contact voltage testing criteria include all structures, guys, and down leads attached to these structures.

- *Underground Transmission* – Con Edison's underground transmission system includes approximately 2,200 facilities. These transmission facilities support circuit voltages of 69 kilovolts and greater. Con Edison's underground transmission facilities are inspected and tested for contact voltage every five years.

IV. Contact Voltage Testing Program

The Safety Standards require that Con Edison complete annual contact voltage testing by December 31 each year.

In accordance to the modified contact voltage testing frequencies established in the March 22, 2013 Order, all facilities requiring annual contact voltage testing were tested. In addition, Con Edison tested for contact voltage on all municipally owned metallic streetlights and traffic signals located on thoroughfares or areas that are publicly accessible and directly supplied with electricity by the Company.

In addition, and in compliance with the Safety Standards, Con Edison:

- Immediately safeguarded and /or mitigated all voltage findings greater than or equal to 1.0 volt. The Company uses its best efforts to effectuate a permanent repair within 45 days to all Company-owned equipment determined to have caused a voltage finding and remaining necessary to provide our customers with safe and reliable service. The permanent repairs not effectuated within 45 days are periodically monitored and tracked to completion. In instances where the contact voltage finding was determined to be caused by equipment that is not owned by Con Edison, the Company, after making the area safe, notified a responsible person associated with the premises of the unsafe condition and the need for the owner to arrange for a permanent repair.

- Tested all publicly accessible structures, streetlights, sidewalks and metal objects within a 30 foot radius of an energized structure, or contact voltage finding greater than or equal to 1.0 volt.

- Responded to, investigated and mitigated positive findings of shock incidents reported by the public.

Training

Con Edison manages its contact voltage testing program and uses both Company field personnel and contractor forces to conduct the testing of utility owned electric facilities and municipal streetlights.

Training for the contact voltage testing program consists of an eight hour class at our training facility for contractor forces and on-the-job training, performed by Supervisors for Company field forces. The training is based on Company specifications on how to properly test an electric facility for contact voltage. Topics covered in the training are:

The PSC Safety Standards
Scope of the contact voltage testing program
Performing the test and completing the testing form
Data entry process
Status of contact voltage testing to annual goal
Abnormal systems conditions to be reported
Performance mechanism

Underground Distribution Contact Voltage Testing

Of the total population of approximately 278,000 underground facilities, 147,933 were fielded for manual testing. The remaining facilities were tested under the mobile contact voltage program. Of the 147,933 underground facilities visited during manual testing, 2,681 did not require contact voltage testing due to inaccessibility, structures retired, or customer owned structures.

Inaccessible underground facilities include:

a. *Locked Gate/Fence* – Structures behind locked gates and fences that are not accessible to the public, i.e., facilities located in fenced areas owned by other utilities, such as, Water Companies.

b. *Company Property* – Structures located on Company property, such as substations, are accessible only to Company personnel and authorized contractors.

c. *Construction* – A structure located within a construction site. These structures are accessible only to construction personnel.

d. *Buried* – A structure below grade that requires excavation to access the structure.

e. *Vaults* – Structures located inside buildings. These structures are accessible only to Company and building maintenance personnel.

f. *Highway* – Structures located on highways and on exit and entrance highway ramps. The performance of contact voltage testing would constitute an unacceptable risk to the employee.

Overhead System Contact Voltage Testing

Of the population of approximately 273,000 overhead facilities, 114,594 were visited and tested for contact voltage.

Streetlight and Traffic Signal Contact Voltage Testing

Of the total population of approximately 185,000 streetlight and traffic signal facilities, which the Company directly supplies electric service and which are located on public thoroughfare, approximately 109,222 facilities were required to be tested manually. The remaining facilities were tested under the mobile contact voltage program. Of the facilities visited, 494 did not require contact voltage testing because these structures were not publicly accessible or were retired.

Inaccessible streetlights and traffic signals include:

a. *Construction* – A structure located within a construction site. These structures are only accessible to construction personnel.

b. *Restricted Access* – Structures located within areas with active public improvement efforts or the World Trade Center.

c. *Highway* – Structures located on highways or access roads to highways

Underground Transmission Contact Voltage Testing

Under the March 22, 2013 Order, testing for contact voltage on underground transmission facilities may be conducted every five years during the five-year inspection cycle. For 2015, Con Edison tested for contact voltage 476 of the population of approximately 2,200 underground transmission facilities while these facilities were being inspected. Those facilities that are not publicly accessible do not require contact voltage testing. Inaccessible transmission facilities include:

a. *Construction* – A structure located within a construction site. These structures are only accessible to construction personnel.

b. *Con Edison Property* – Structures located on or adjacent to Con Edison properties which are secured from the public via fencing or other barriers and are inaccessible to the public.

c. *Bridges* – Structures located on bridges, such as bridge joints

d. *Buried* – A structure below grade that requires excavation to access the structure

Overhead Transmission Contact Voltage Testing

Con Edison visited and tested all of the 1,220 overhead transmission facilities on the Company's overhead transmission system. This testing was conducted during scheduled inspections for the structures.

Mobile Contact Voltage Testing

In accordance with the PSC's "Order Establishing Rates for Electric Service," issued March 25, 2008 in Case 08-E-0539, Con Edison performed 12 underground system scans in underground distribution areas of New York City using mobile contact voltage detection technology. In accordance with the PSC's "Order Adopting Changes to Electric Safety Standards," issued December 15, 2008 in Case 04-M-0159, the 12 underground system scans must be performed within each rate year (April 1st to March 31st). In addition, Con Edison performed one underground system scan using mobile contact voltage detection technology annually in New Rochelle, Yonkers, and White Plains, as ordered in 10-E-0271. Con Edison also performed an underground system scan in Mount Vernon.

Results of the 2015 Contact Testing Program

The results of the 2015 Contact Testing Program are provided in the following appendixes to this report:

- Appendix 1 titled, "Contact Voltage Testing Summary"
- Appendix 2a titled, "Summary of Energized Objects - Mobile Testing"
- Appendix 2b titled, "Summary of Energized Objects - Manual Testing + Other"
- Appendix 3 titled, "Summary of Shock Reports from the Public."

V. Facility Inspection Program

The Commission's Safety Standards require all utilities to inspect all electric facilities at least once every five years. The first five-year cycle covered the period of 2005 through 2009. The second cycle is the period of 2010 through 2014. The third cycle covers the period 2015 through 2019. The Safety Standards also require that utilities inspect a minimum number of electric facilities each year of the five-year cycle based on an annual percentage of total electric facilities as follows: 17 percent in the first year, 18 percent in the second year, and 19 percent in the third, fourth and fifth years except that by the end of every fifth year, the utility must ensure that it has inspected 100 percent of its facilities. A utility may inspect its facilities pursuant to a compressed schedule and complete its inspection cycle prior to the end of the five-year period so long as the cumulative number of inspections at the end of any year is at least the minimum number required by the annual target formula – 17 percent in first year, 35 percent by end of second year, 54 percent by end of third year, 73 percent by end of fourth year, and 100 percent by end of fifth year. In addition, the Safety Standards require that defective equipment found during an inspection be repaired. In accordance with the Safety Standards, Con Edison uses the following severity levels to establish priority for repairs and scheduling:

- *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. NOTE: Con Edison requires that company forces repair level I defects before leaving the structure.

- *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 is used for future monitoring purposes and planning proactive maintenance activities.

In accordance with the Safety Standards, when a temporary repair is located during inspection or performed by the Company, best efforts are put forth to make a permanent repair of the facility within 90 days.

Training

Con Edison manages its inspection program and uses both company field personnel and contractor forces to conduct the inspection of utility owned electric facilities.

Training of the contractor force utilized to perform inspections on our overhead and underground systems consists of classes at our learning facility as well as on the job training performed by Contractor Oversight Supervisors who have attended a train-the-trainer session with a Con Edison Subject Matter Expert (SME). For Company field forces, the training is based on Company specifications on how to properly inspect an electric facility which is acquired through their promotional classes, as well as on the job training performed by their supervisor.

In addition to the above, the Secondary System Analysis Section of Distribution Engineering conducted train-the-trainer sessions in each of the major workout locations since the inception of the program. The participants included the managers, planners, and supervisors of the crews that would be performing the inspections. The Secondary System Analysis Team has also conducted various training seminars at all of the major work out locations which included the following topics:

> The PSC Safety Standards
> Scope of the inspection
> Completing the inspection form
> Data entry process

Status of inspections to annual goal
Repairs pending
Accounting of the inspection
Performance mechanism

In addition to the train-the-trainer sessions, an E-Learning Training Module was developed. This training module can be accessed from any computer on the Con Edison Network. This class is also part of the curriculum in career advancement for new mechanics.

Results of the 2015 Facility Inspection Program

The results of the 2015 Facility Testing Program and associated facility repairs are provided in Appendix 4, titled "Summary of Deficiencies and Repair Activity Resulting from the Inspection Process."

VI. Annual Performance Targets

Con Edison performed the required contact voltage testing and facilities inspections in accordance with the requirements of the Commission's Safety Standards.

This being the first-year of the third cycle ending December 31, 2019, Con Edison has cumulatively inspected 32.53% of its overall population of electric facilities. The percentages of inspections through December 31, 2015 by structure category are summarized in Table 1. Con Edison does not own streetlight facilities. These facilities are owned by the City of New York and by the municipalities in Westchester.

Con Edison inspects its underground transmission system at multiple intervals all in less than 5 years. The data on Table 5 captures all inspections performed during 2015. The total number of underground facilities to be inspected is approximately 2,200.

Con Edison inspects the overhead transmission facilities (Table 3) and Unit Substations and multi-banks (Table 7) every year.

Table 1
Facility Inspection Program Results

Category	Actual Cumulative Inspected as of 2015
Overhead Distribution	41.97%
Overhead Transmission	100%
Underground / URD Distribution	23.35%
Underground Transmission	32.14%
Substation	15.5%
Unit Substations	100%
Company-owned Streetlights	N/A

5-Year Inspection Performance Summary

The following tables provide the cumulative percentages of inspections by structure category over the current five-year (2015-2019) inspection cycle.

Table 2
Overhead Distribution Facilities

Inspection Year	Unique Number of Overhead Distribution Structures Inspected	% of Overall Facilities Inspected (Cumulative)
2015	114,594	41.97%
2016		
2017		
2018		
2019		

Table 3
Overhead Transmission Facilities

Inspection Year	Unique Number of Overhead Transmission Facilities Inspected	% of Overall Facilities Inspected (Cumulative)
2015	1,220	100%
2016		
2017		
2018		
2019		

Table 4
Underground Distribution and URD Facilities

Inspection Year	Unique Number of Underground / URD Facilities Inspected	% of Overall Facilities Inspected (Cumulative)
2015	64,913	23.35%%
2016		
2017		
2018		
2019		

Table 5
Underground Transmission Facilities

Inspection Year	Unique Number of Underground Transmission Facilities Inspected	% of Overall Facilities Inspected (Cumulative)
2015	707	32.14%
2016		
2017		
2018		
2019		

Table 6
Substation Facilities

Inspection Year	Unique Number of Substation Facilities	% of Overall Facilities Inspected (Cumulative)
2015	16	15.5%
2016		
2017		
2018		
2019		

Table 7
Unit Substation Facilities

Inspection Year	Unique Number of Unit Substation Facilities Inspected	% of Overall Facilities Inspected (Cumulative)
2015	226	100%
2016		
2017		
2018		
2019		

VII. Certifications

Pursuant to Section 7 of the Safety Standards, attached as Exhibit 1 of this report are the certifications of Con Edison's officer with direct responsibility for overseeing contact voltage testing and facility inspections that Con Edison has, to the best of the officer's knowledge, exercised due diligence in carrying out a plan, including quality assurance, that is designed to meet the contact voltage testing and inspection requirements in 2015, and that Con Edison has:

- Tested its publicly accessible electric facilities and street lights in accordance with the Electric Safety Standards Case 04-M0159 effective January 13, 2015.

- Inspected the requisite number of electric facilities.

VIII. Analysis of Causes of Findings and Contact Voltage

All New York State utilities prepare an inventory of all "findings" and report on the number of these findings each year. Section 1(f) of the Safety Standards defines a "finding" as "any confirmed voltage reading on an electric facility or streetlight greater than or equal to 1 volt measured using a volt meter and 500 ohm shunt resistor." Section 1(c) defines Stray Voltage (referred to herein as Contact Voltage) as "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."

Although not all findings are due to contact voltage, NYS Utilities are required to report on all findings, regardless of whether the voltage is normal to the operating system. In 2015, 6,950 voltage findings resulted from contact voltage testing. These findings resulted from 2,792 sources of contact voltage. A total of 6,855, approximately 99% of these findings, were detected by the Mobile Contact Voltage Testing Program. There were 95 findings (1%) identified by manual contact voltage testing.

In accordance with the Safety Standards requirements, when a finding is discovered on an electric facility or streetlight during contact voltage testing, the Company must manually test all publicly accessible structures, streetlights, and sidewalks, within a minimum 30 foot radius of the energized object. An additional 24 findings were found as a result of the 30-foot radius testing during manual contact voltage testing.

Contact voltage findings resulted from a variety of conditions including deterioration of conductors and insulation, damaged neutrals and connections, and defective customer equipment. Table 8 contains a breakdown of the 2015 causes of contact voltage findings that were Con Edison's responsibility:

Table 8
2015 Sources of Contact Voltage Finding
Con Edison Responsibility

Source of Contact Voltage	Con Ed
UG Service	429
UG Streetlight Service	496
UG Streetlight Con Edison Neutral	20
UG Main	280
Secondary Burnout	211
UG Service Con Edison Neutral	125
Crab	79
UG Main Con Edison Neutral	136
Abandoned Service	18
Sump Pump	45
Abandoned SL Service	9
Overhead Streetlight Service Neutral	1
Loose UG SL Service Connection at CE Structure	0
Overhead Service	9
Overhead Service Neutral	6
Overhead Streetlight Service	2
Con Ed S/L Reversed Polarity	0
Damaged/Missing Ground Rod	3
Defective Riser/Insulator	4
Con Ed non-S/L Reversed Polarity	0
Temporary Service	10
Overhead Secondary	0
Overhead Primary	0
Defective Pigtail/ISO	4
Defective Transformer Equipment / Gap	2
Total	**1889**

Table 9 contains a breakdown of the 2015 causes of contact voltage findings that were the responsibility of entities other than Con Edison ("Non Con Edison Responsibility"):

Table 9
2015 Sources of Contact Voltage
Non Con Edison Responsibility

Source of Contact Voltage	Non Con Edison
Defective Customer Equipment	397
Defective Contractor Equipment	0
Defective Pigtail/Internal City Streetlight Wiring/Loose Connection at Lamp Base/Open Ended Control Wiring	421
Dept. of Transportation (DOT)/City Streetlight Neutral	77
Defective Neon Sign	5
DOT Temp Service	0
DOT Reverse Polarity	1
Contractor or Customer Damage	2
Total	**903**

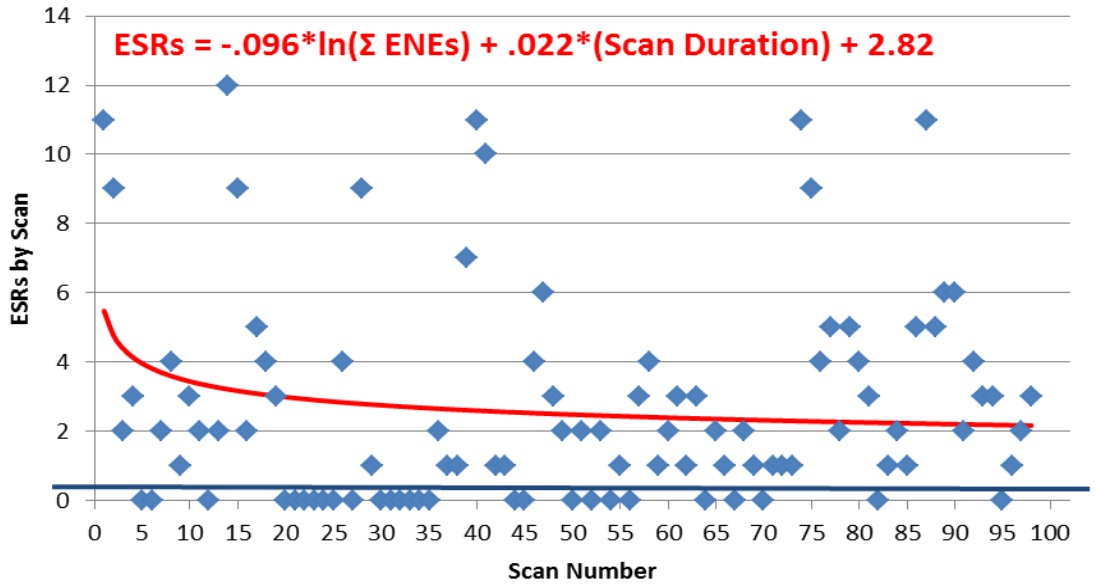
Mitigation through Detection

Five factors affect the likelihood that a member of the public or an animal could experience a shock. These factors are the number of energized structures (ENEs), duration of a mobile system scan, voltage levels associated with the ENEs, population density, and the weather. A table containing the breakdown of Electric Shock Reports (ESRs) reported to Con Edison during 2015 can be found in Appendix 3.

Since the likelihood of an ESR will increase or decrease in proportion to the total number of energized structures, the detection and repair of identified sources of contact voltage is the principal mitigation effort for reducing ESRs. Each completed repair effectively represents a mitigation of possible ESRs. As these repairs accumulate over time, the potential ESRs decrease accordingly.

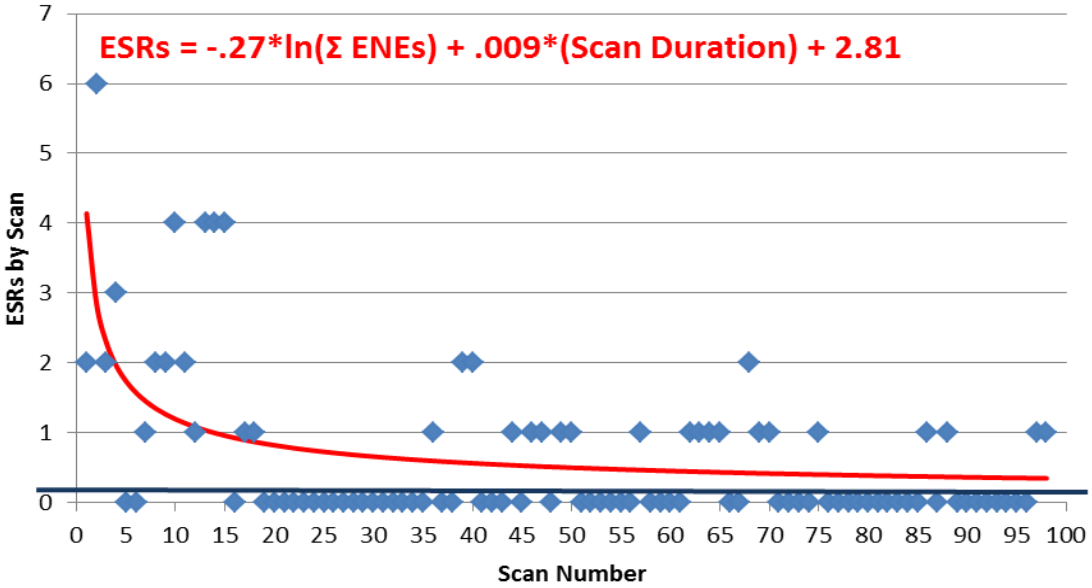
The ESRs associated with Con Edison's equipment appear on Chart 1. As mentioned above, weather also plays a role in ESR generation. Higher precipitation in 2015 increased the generation rate of ESRs associated with Con Edison's equipment. This weather variable is accounted for in the underlying models and in both the 2015 and long term predictions. The duration between scans ranges from approximately 30 to 35 days per scan. If Con Edison continues with a comparable ENE repair rate and scan interval in 2016 and experiences similar weather patterns, the Company can expect ESRs to be approximately 2 per scan. In 2015 there were 40 shocks associated with the Company's equipment. This result is above the projection but well below pre-safety program performance and more consistent with weather related influences.

Chart 1
Con Edison ESR by Scan vs. Cumulative ENEs and Scan Duration



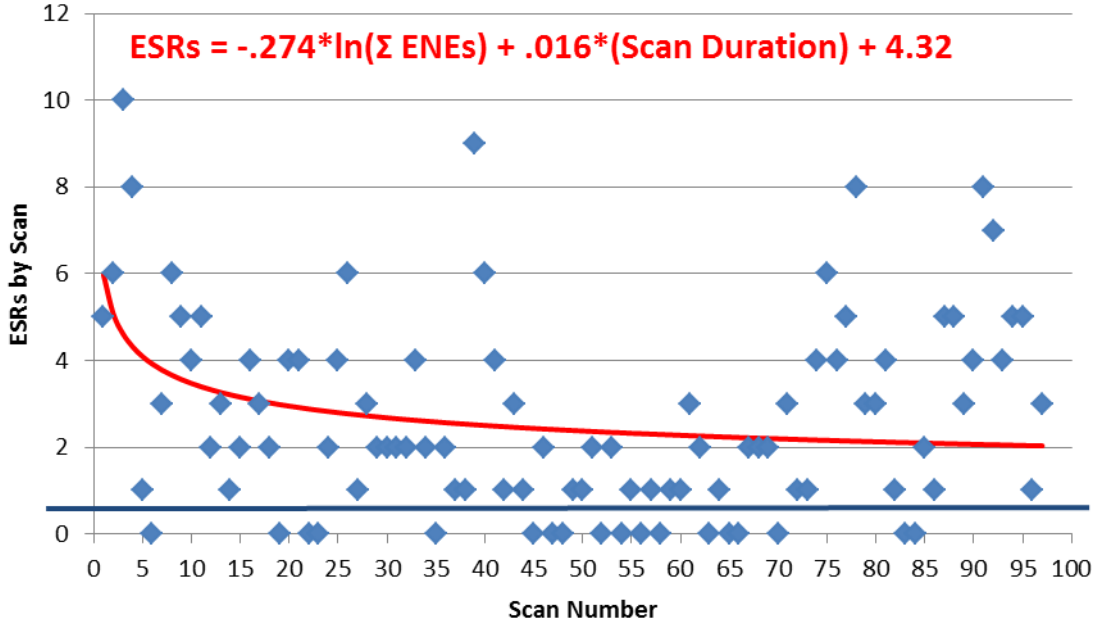
The ESRs associated with DOT equipment appear on Chart 2. The duration of scans is 30 to 35 days per scan. If the Company continues a comparable ENE repair rate and scan duration in 2016, the Company can expect ESRs at this scan duration level to remain at approximately 1 per scan. In 2015 there were 3 shocks associated with DOT equipment failures. This result is below the company's projections and shows performance continues to improve from the various programs implemented by both DOT and Con Edison to mitigate shocks.

Chart 2
DOT ESRs by Scan vs. Cumulative ENEs and Scan Duration



The ESRs associated with Customer's equipment appear on Chart 3. The duration of scans is 30 to 35 days per scan. If the Company continues a comparable ENE repair rate and scan duration in 2016, the Company can expect ESRs to remain at 2 per scan, with no significant reduction anticipated below that level in the near future. The actual performance indicates that these shock events are less sensitive to our mitigation efforts than we initially projected. In 2015, the Company responded to 40 validated shock reports on publicly accessible customer equipment.

Chart 3
Customer (Public Access) ESRs by Scan vs. Cumulative ENEs and Scan Duration

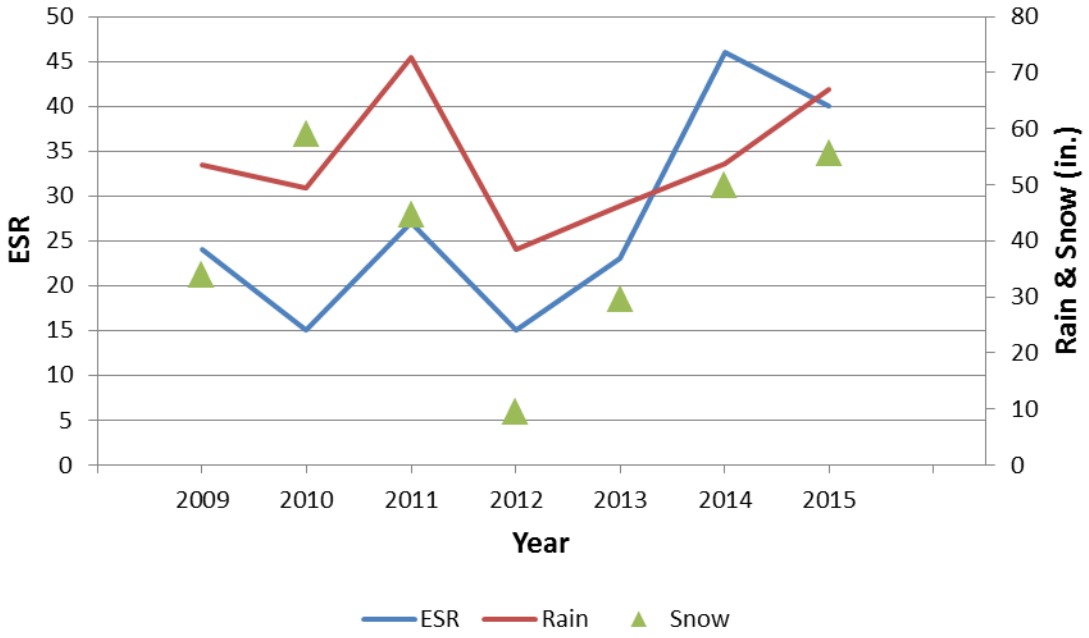


As has been discussed in the Company's prior annual reports, the Company continues to observe a strong correlation between weather and shocks during 2015.

In evaluating snow and rainfall in successive years (Chart 4), the system response to ground conditions, such as the level of precipitation, changes from 2009 to 2015. As snowfall and rainfall trended upwards from 2009 to 2015, ESRs also trended upwards. Although snow and rainfall increased there is a decrease in number of ENE/ESRs in 2015. The Company will continue to monitor this correlation in 2016.

Weather continues to have a direct impact on the electrical system. The months of January, February and March accounted for 98% of the snowfall this winter season. The snow precipitation for these three months was 2.2 times higher than the historical average. Approximately 485,191 tons of salt was distributed, making this the highest salt distribution in the last ten winter-seasons. Despite harsh winter conditions for a second consecutive year, 2015 energized objects (ENEs) detected and electric shock reports (ESRs) decreased significantly (21% and 7.1% respectively) from 2014. ESRs remain well below their pre-program historical values, e.g., in 2004 there were 285 ESRs. These weather-driven fluctuations demonstrate that the Con Edison Public Safety Programs continue to control risk.

Chart 4
2009 – 2015 Rainfall vs. ESR



IX. Analysis of Inspection Results

Table 10 details the number of annual inspections performed for each facility type for the current 2015-2019 cycle.

Table 10
Cycle 3 - Yearly Inspection Breakdown

Facility Inspection Program	2015	2016	2017	2018	2019	5-Year Cumulative Unique Inspections	Percent Completed
Distribution Underground/URD	64,913					64,913	23.35%
Distribution Overhead	114,594					114,594	41.97%
Transmission Underground	707					707	32.14%
Transmission Overhead	1,220					1,220	100%
Substations	16					16	15.5%
Unit Substations	226					226	100%
Total	**181,676**					**181,676**	**32.53%**

Tables 11 through 13 show the number of deficiencies found in each structure inspected by defect level. For example, in Table 11 it shows that 1.8% of the total defects found in the overhead were Level II and they were found on 1,123 overhead structures. Because a structure can have more than one defect, the same structure may be counted in the different levels. Hence, the total number of structures in each of the table is not the unique number of structures inspected. In addition, the table does not show the structures that had no defects.

Table 11
Overhead Distribution
Breakdown of Locations with Deficiencies

Defect Level	Number of Structures	Number of Deficiencies	% Deficiencies Found
1	49	49	0.076%
2	1,123	1,163	1.8%
3	30,820	34,987	54.52%
4	26,330	28,000	43.61%
Total:	**42,647**	**64,199**	**100%**

Table 12
Overhead Transmission
Breakdown of Locations with Deficiencies

Defect Level	Number of Structures	Number of Deficiencies	% Deficiencies Found
1	49		
2	1,163		
3	16	16	20.50%
4	62	62	79.50%
Total:	**78**	**78**	**100%**

Table 13
Underground Distribution and URD
Breakdown of Locations with Deficiencies

Defect Level	Number of Structures	Number of Deficiencies	% Deficiencies Found
1	8,135	8,391	6.17%
2	26,932	46,501	34.20%
3	5,528	6,775	5%
4	27,775	74,275	54.63%
Total:	**39,456**	**135,942**	**100%**

Streetlights

Con Edison does not own streetlight facilities. Streetlight facilities within the Company's service area are owned by the City of New York and municipalities located in Westchester County.

Repair of Deficiencies

During 2015, the Company repaired 53.67% of the Level I, II, III and IV defects found: 98.31% Level I; 86.4% Level II; 6.57% Level III and 5.24% level IV. The total number of open Level 1 pending repairs from the 2015 Underground, Overhead, and URD programs is 143.

As of February 9, 2016, there are 107 Level I deficiencies open from 2015 inspection cycle in the Underground and URD programs. Of the 107 Level I deficiencies, 99 are in the URD system and 8 are in the Underground system. The majority (83) of the residual open defects are associated with defective or missing URD grating bolts.

Temporary Repairs

Our inspection database identifies temporary repairs that have remained in place more than 90 days as detailed in the table below:

Table 14
Temporary Repairs over 90 Days

	Level I	Level II	Level III
Underground Distribution	33	205	210
Overhead Distribution	0	1	16
URD	16	9	0
Total	**49**	**215**	**226**

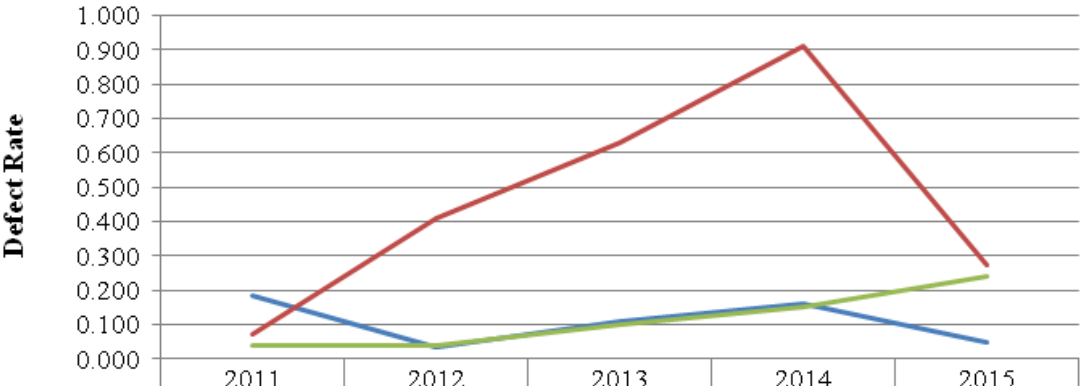
Of the 49 Level I temporarily repaired, 16% are defective or missing grating bolts in the URD which will be address as soon as material is received and 65% are related to cable or crab in contact with frame or cover. These jobs are currently being reviewed as it appears to be an administrative error in capturing the repair as temporary as opposed to permanent.

When possible, temporary repairs are also made to Level II and Level III defects prior to leaving the structure. These temporary repairs will be completed within the cycle of the condition level.

Analysis of Defects Found

Chart 5 shows the number of defects found per inspection by their classification level. There has been a 79% decrease in both the Level I and Level II defect rate from 2014 to 2015, while Level III has increased by 7%.

Chart 5
Defect Rate by Level



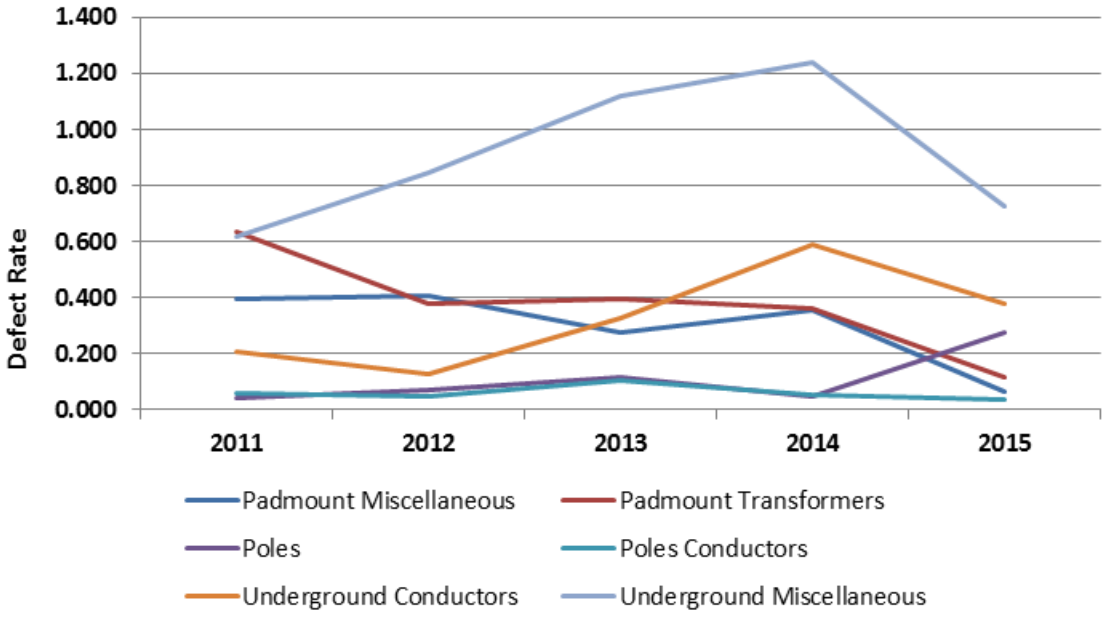
	2011	2012	2013	2014	2015
Level 1	0.186	0.036	0.107	0.16	0.048
Level 2	0.071	0.407	0.627	0.909	0.272
Level 3	0.037	0.039	0.099	0.151	0.238

The generation of Level I and Level II defects show a downward trend. The main driver for the reduction in Level I was the 79% reduction from 2014 in "cable or crab in contact with frame or cover". The main driver for the reduction in Level II was: Improperly seal caps and ducts (80% reduction) and damaged secondary mains (41% reduction). In addition, the combined underground defect generation rate had a 36% improvement over 2014

There is an increase in the Level III generation from 2014. Chart 6 shows the defect rate by type of repair. As can be observed, the increase in Level III defects is in the "Pole" category mainly due to the introduction of a new defect added to the overhead in 2015 "Missing tap between primary down guy and system neutral". This new defect was added because it was determined that it could potentially became a safety concern to the public. In addition, there has been an increase in the number of "ground" defects found. This is attributed to the clarifications made to the training of the new contractors on what type of defects we were looking for in the "Pole Ground" category. As for example, ground wire detached from the pole but still electrically connected is now being captured as a Level III defect.

If the new generated defects were to be removed from the 2015 defect count, it would result in a Level III generation rate of 0.096 which is a 59% reduction from the Level III generation rate in 2014.

Chart 6
Defect Rate by Type of Repair



The Company enhanced its process for structural inspections and inspection reporting as follows:

- Field or structural engineers will perform a follow-up field assessment to establish the repair classification of structures identified by field inspection forces as containing Level 1 repair conditions.

- Field inspections crews and field engineers have received enhanced training in structural evaluations.

The defect and repair status data provided in Appendix 4 relates to equipment defects and includes only Level 4 structure conditions. At year-end 2015, there are 143 unrepaired structures identified upon the initial field inspection as containing a Level 1 repair condition. These 143 structures will receive a follow-up field assessment by a field engineer to establish the repair classification.

X. Quality Assurance

The Safety Standards require electric companies to develop a quality assurance program to "ensure timely and proper compliance with these safety standards." Con Edison has developed a comprehensive quality assurance program to address the contact voltage testing and facility inspections requirements. The quality assurance program includes:

- Contact voltage testing of underground distribution structures including Underground Residential Distribution (URD), overhead distribution structures and municipality owned streetlights
- Contact voltage testing of transmission and substation facilities
- Facility inspections of underground distribution, URD, and overhead distribution structures
- Facility inspections of transmission facilities and substation facilities

This section addresses Con Edison's quality assurance program for the above-referenced contact voltage testing and facility inspections.

Quality Assurance Measures Instituted: Contact Voltage Testing of Underground Distribution Structures, Overhead Distribution Structures, and Municipality Owned Streetlights.

Con Edison developed a quality assurance plan to ensure that contact voltage testing was performed as specified. The reliability and error design parameters used were:

> *95% reliability within a ±10% relative precision level and satisfy established industry sample design criteria.*

Based on the total inspection performed in 2015, 728 quality assurance checks were required on all tested structures to achieve a 95% confidence rate with a ±10% overall error that the contact voltage tests were conducted in accordance with Company specifications.

Specification EO-10315 (Quality Assurance of the Contact (Stray) Voltage and Periodic Distribution Structure Safety Inspection Programs) calls for quality assurance checks to be performed on the contractor contact voltage testing. The quality assurance checks are randomly selected from a database of all contact voltage tests and include a field test for contact voltage. Con Edison performed 157 quality assurance checks of the underground distribution structures including underground residential distribution (URD), 301 quality assurance checks of overhead distribution structures and 270 quality assurance checks of municipality owned streetlights. Contact voltage was not found during any of these quality assurance reviews. In addition to the 728 quality assurance checks discussed above, Con Edison also conducted Random Quality Assurance reviews of "work in progress."

Quality Assurance Measures Instituted: Contact Voltage Testing of Transmission and Substation Facilities.

In accordance with TS-ES-1043, a planner in Transmission Line Maintenance who has knowledge and expertise in overhead transmission, but who did not perform or directly supervise the contact voltage testing, conducted quality assurance inspections at locations on various transmission lines for overhead transmission facilities. Contact voltage was not found during any of these quality assurance reviews.

Con Edison performed several types of quality assurance on the underground transmission contact voltage-testing program. Contractors, who also performed testing on underground distribution structures, performed the contact voltage testing of underground transmission facilities. Following this contact voltage testing, Con Edison Construction Management personnel performed audits at several locations. Contact voltage was not found during any of these quality assurance reviews.

Substations Operations Methods and Procedures group performed quality assurance for the substation contact voltage-testing program. The quality assurance consisted of a documents search, records review, as well as physical contact voltage testing. Contact voltage was not found during any of these quality assurance reviews.

Quality Assurance performed a quality review on a randomly selected sample of unit substations. Contact voltage was not found during any of these quality assurance reviews.

These QA checks confirmed the accuracy of the results from the Contact voltage-testing program.

Quality Assurance Measures Instituted: Inspections of Underground Distribution Structures and Overhead Distribution Structures.

A Central Quality Assurance group (QA) was established to oversee work done on the underground electrical system. QA observes specification compliance of the underground inspection program. EO-10315 (Quality Assurance of the Contact Voltage and Periodic Distribution Structure Safety Inspection Programs) establishes standards for the QA program in order to ensure that the underground structure inspections are performed in accordance with the Safety Standards and Con Edison's specifications. The reliability and error design parameters used were:

> *95% reliability within a ±10% relative precision level and satisfy established industry sample design criteria.*

Based on the total inspection performed in 2015, 458 quality assurance checks were required to achieve a 95% confidence rate with a ±10% overall error that the inspections were conducted in accordance with Company specifications.

Con Edison employees from the centralized quality assurance department conduct the quality assurance for each of the Company's operating regions. These employees are experienced cable splicers, linemen and mechanics that have been trained in facility inspection and the quality assurance specifications.

The quality assurance personnel performed a complete re-inspection of 157 underground and 301 overhead facilities. The results of the randomly selected facilities are compared with the results to the previous inspected facilities. Deficiencies identified during quality assurance reviews are communicated to field crews, supervisors, planners, and managers who have been required to reinforce inspection procedures with field crews.

Quality Assurance Measures Instituted: Transmission and Substation Facility Inspections.

Company specifications TS-SS-6830 (Low and Medium Feeder Pressure Periodic Inspection Procedure) and TS-SS-6045 (Inspection and Preventive Maintenance and Contact Voltage Testing of Pipe Type Cable Systems) require that quality assurance inspections of randomly selected transmission manholes be performed. These randomly selected manholes are re-inspected or re-tested by trained and knowledgeable employees who did not perform or directly supervise this work.

Substation Operations' quality assurance program consists of periodic document reviews and field observations to ensure that 100% of the required contact voltage tests and a minimum of 20% of the Safety and Reliability Inspections of Substation facilities will be completed by December 31 of each year and that the testing and inspections are properly conducted.

Quality assurance was performed by members of the SSO Methods and Procedures group and consisted of a documents search, records review, and physical critical visual inspection. Critical visual inspection quality assurance was also performed. In addition, all inspection and follow-up work order documentation was reviewed. Work orders are entered into the Company's work management system and processed by appropriate personnel. These work orders are tracked closely until all repairs are completed. All personnel are trained on proper reporting and referral of repairs identified during facility inspections. The quality assurance inspections yielded results indicating that the original inspections were performed in accordance with the applicable specifications.

XI Other Pertinent Information

Con Edison continues to develop tools, techniques, and management applications to improve public safety, troubleshooting, and program efficacy. In 2014,continuing in 2015, the Secondary Analysis Engineering team led research into thermal imaging of secondary assets; arcing detection; and public safety program optimization.

Appendix

Appendix 1 – Summary of MANUAL Contact Voltage Testing

	Total System Units Requiring Testing	Units Completed	Percent Completed	Units with Voltage Found[1] (>= 1.0v)	Percent of Units Tested with Voltage (>= 1.0v)	Units Classified as Inaccessible
Overhead Distribution Facilities	114,594	114,594	100.00%	1	0.001%	0
Quarterly Update		52,050	45.42%	0	0.000%	0
Underground Distribution Facilities	147,933	147,933	100.00%	7	0.005%	2,681
Quarterly Update		29,557	20.96%	1	0.003%	1,208
Street Lights / Traffic Signals	109,022	109,222	100.00%	81	0.074%	494
Quarterly Update		5,404	4.97%	5	0.093%	325
Substation Fences	297	297	100.00%	0	0.000%	0
Quarterly Update		49	16.50%	0	0.000%	0
Transmission (69kV and Above)	1,220	1,220	100.00%	0	0.000%	0
Quarterly Update		0	0.00%	0	0.000%	0
TOTAL	365,860	370,091	100.00%	89	0.024%	3,175
Quarterly Update		87,060	23.80%	6	0.007%	1,533

Appendix 2a – Summary of Energized Objects – Mobile Testing

	2015 Year Jan 1, 2015 - Dec 31, 2015						
	Initial Readings				Readings After Mitigation		
	1.0V - 4.4V	4.5V - 24.9V	> 25V	Total	< 1.0V	1.0V - 4.4V	> 4.5V
Distribution Facilities	**8**	**6**	**0**	**14**	**14**	**0**	**0**
Pole	7	6	0	13	13	0	0
Ground	0	0	0	0	0	0	0
Guy	0	0	0	0	0	0	0
Riser	0	0	0	0	0	0	0
Other	1	0	0	1	1	0	0
Underground Facilities	**433**	**131**	**16**	**580**	**580**	**0**	**0**
Service Box	423	129	16	568	568	0	0
Manhole	6	2	0	8	8	0	0
Padmount Switchgear	0	0	0	0	0	0	0
Padmount Transformer	0	0	0	0	0	0	0
Vault - Cover / Door	2	0	0	2	2	0	0
Pedestal	0	0	0	0	0	0	0
Other	2	0	0	2	2	0	0
Street Lights / Traffic Signals	**1,211**	**549**	**252**	**2,012**	**2,012**	**0**	**0**
Metal Sreet Light Pole	959	442	228	1,629	1,629	0	0
Traffic Signal Pole	224	94	11	329	329	0	0
Traffic Control Box	1	1	0	2	2	0	0
Pedestrian Crossing Pole	24	9	8	41	41	0	0
Other	3	3	5	11	11	0	0
Substation Fences	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Fence	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Transmission (Total)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Lattice Tower	0	0	0	0	0	0	0
Pole	0	0	0	0	0	0	0
Ground	0	0	0	0	0	0	0
Guy	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Miscellaneous Facilities	**2,953**	**1,066**	**230**	**4,249**	**4,249**	**0**	**0**
Sidewalk	665	287	53	1,005	1,005	0	0
Gate/Fence/Awning	795	284	70	1,149	1,149	0	0
Traffic Sign	176	72	14	262	262	0	0
Scaffolding	37	7	15	59	59	0	0
Bus Shelter	14	12	1	27	27	0	0
Fire Hydrant	115	15	0	130	130	0	0
Phone Booth	0	0	0	0	0	0	0
Control Box	0	0	0	0	0	0	0
Water Pipe	0	0	0	0	0	0	0
Riser	0	0	0	0	0	0	0
Other	1,151	389	77	1,617	1,617	0	0

Appendix 2b - Summary of Energized Objects – Manual Testing and Other

	2015 Year Jan 1, 2015 - Dec 31, 2015						
	Initial Readings				Readings After Mitigation		
	1.0V - 4.4V	4.5V - 24.9V	> 25V	Total	< 1.0V	1.0V - 4.4V	> 4.5V
Distribution Facilities	**2**	**12**	**2**	**16**	**16**	**0**	**0**
Pole	1	4	1	6	6	0	0
Ground	0	3	0	3	3	0	0
Guy	0	0	0	0	0	0	0
Riser	0	1	1	2	2	0	0
Other	1	4	0	5	5	0	0
Underground Facilities	**6**	**8**	**3**	**17**	**17**	**0**	**0**
Service Box	4	2	1	7	7	0	0
Manhole	0	4	2	6	6	0	0
Padmount Switchgear	0	0	0	0	0	0	0
Padmount Transformer	0	0	0	0	0	0	0
Vault - Cover / Door	1	1	0	2	2	0	0
Pedestal	0	0	0	0	0	0	0
Other	1	1	0	2	2	0	0
Street Lights/Traffic Signals	**106**	**62**	**45**	**213**	**213**	**0**	**0**
Metal Sreet Light Pole	106	62	45	213	213	0	0
Traffic Signal Pole	0	0	0	0	0	0	0
Traffic Control Box	0	0	0	0	0	0	0
Pedestrian Crossing Pole	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Substation Fences	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Fence	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Transmission (Total)	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Lattice Tower	0	0	0	0	0	0	0
Pole	0	0	0	0	0	0	0
Groudn	0	0	0	0	0	0	0
Guy	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Miscellaneous Facilities	**34**	**29**	**11**	**74**	**74**	**0**	**0**
Sidewalk	5	2	1	8	8	0	0
Gate/Fence/Awning	12	8	3	23	23	0	0
Traffic Sign	3	0	0	3	3	0	0
Scaffolding	0	0	0	0	0	0	0
Bus Shelter	0	1	0	1	1	0	0
Fire Hydrant	1	2	0	3	3	0	0
Phone Booth	0	0	0	0	0	0	0
Control Box	0	0	0	0	0	0	0
Water Pipe	1	3	0	4	4	0	0
Riser	0	0	0	0	0	0	0
Other	12	13	7	32	32	0	0

Appendix 3 - Summary of Shock Reports from the Public

2015 Year-End Jan 1, 2015 - Dec 31, 2015	Quarterly Update	Yearly Update
I. Total Shock Calls Received:	***31***	***195***
Unsubstantiated	**18**	**98**
Normally Energized Equipment	**0**	**6**
Stray Voltage	**13**	**91**
Person	6	65
Animal	7	26
II. Injuries Sustained	***0***	***1***
Utility Responsibility	**0**	**0**
Person	0	0
Animal	0	0
Non Utility Responsibility	**0**	**0**
Person	0	0
Animal	0	0
Unsubstantiated	**0**	**1**
Person	0	1
Animal	0	0
III. Medical Attention Received	***0***	***0***
Utility Responsibility	**0**	**0**
Person	0	0
Animal	0	0
Non Utility Responsibility	**0**	**0**
Person	0	0
Animal	0	0
Unsubstantiated	**0**	**0**
Person	0	0
Animal	0	0
IV. Voltage Source	***13***	***91***
Utility Responsibility	**5**	**40**
Issue with primary, joint, or transformer	0	0
Secondary Joint (Crab)	0	8
SL Service Line	0	2
Abandoned SL Service Line	0	0
Abandoned Service Line	1	20
Defective Service Line	4	2
OH Secondary	0	0
OH Service	0	4
OH Service Neutral	0	4
OH SL Service	0	0
OH SL Service Neutral	0	0
Pole	0	0
Riser	0	0
Other	0	0
Customer Responsibility	**4**	**35**
Contractor Damage	0	13
Customer Equipment/Wiring	4	22
Other Utility / Gov't Agency Responsibility	**4**	**16**
SL Base Connection	1	5
SL Internal Wiring or Light Fixture	3	4
Overhead Equipment	0	0
Other	0	7
V. Voltage Range	***13***	***91***
1.0V to 4.4V	3	5
4.5V to 24.9V	3	26
25V and above	7	60
No Reading	0	0

Appendix 4 - Summary of Deficiencies and Repair Activity Resulting from the Inspection Process

Detail of Deficiencies by Facilities	2011			2012			2013			2014			2015		
Priority Level	I	II	III	I	II	III	I	II	III	I	II	III	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
Overhead Facilities															
Repaired in Time Frame	12	436	2,151	13	328	2,163	13	1,002	1,478	0	6	2	19	6	100
Repaired - Overdue	13	228	259	18	43	404	19	8	0	3	0	0	29	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	1,498	0	0	28	0	1,157	34,887
Not Repaired - Overdue	0	266	5,287	0	240	6,434	0	102	0	0	36	0	1	0	0
Total Overhead Facilities	25	930	7,697	31	611	9,001	32	1,112	2,976	3	42	30	49	1,163	34,987
Underground Facilities															
Repaired in Time Frame	959	18,109	1,968	3,471	38,227	1,897	13,125	67,107	2,494	16,212	75,301	3,637	7,686	40,738	2,542
Repaired - Overdue	100	870	335	74	505	448	113	2,370	0	203	6,441	0	125	0	0
Not Repaired - Not Due	0	0	0	0	0	1	0	0	10,032	0	0	13,453	3	4,811	3,981
Not Repaired - Overdue	0	430	812	0	1,187	1,498	7	8,964	0	25	21,045	0	19	0	0
Total Underground Facilities	1,059	19,409	3,115	3,545	39,919	3,844	13,245	78,441	12,526	16,440	102,787	17,090	7,833	45,549	6,523
Pad Mount Facilities															
Repaired in Time Frame	439	836	83	752	543	77	1,755	500	65	1,822	656	59	383	751	100
Repaired - Overdue	7	52	26	6	107	23	102	273	0	126	373	0	55	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	328	0	0	365	9	201	152
Not Repaired - Overdue	1	53	49	9	166	70	49	300	0	56	1,070	0	111	0	0
Total Pad Mount Facilities	447	941	158	767	816	170	1,906	1,073	393	2,004	2,099	424	558	952	252
Streetlight Facilities															
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Total Streetlight Facilities	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transmission Facilities															
Repaired in Time Frame	0	0	16	0	0	9	0	0	9	0	0	0	0	0	5
Repaired - Overdue	0	0	9	0	0	21	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	1	0	0	1	0	0	11
Not Repaired - Overdue	0	0	2	0	0	5	0	0	0	0	0	0	0	0	0
Total Transmission Facilities	0	0	27	0	0	35	0	0	10	0	0	1	0	0	16

Appendix 4 - Summary of Deficiencies and Repair Activity Resulting from the Inspection Process (Cont.)

Year	Prority Level / Repair Expected		Deficiencies Found (Total)	Repaired In Time Frame	Repaired - Overdue	Not Repaired - Not Due	Not Repaired - Overdue
2011	I	Within 1 week	1,531	1,410	120	0	1
	II	Within 1 year	21,280	19,381	1,150	0	749
	III	Within 3 years	10,997	4,218	629	0	6,150
	IV	N/A	91,019	8,468	NA	82,551	NA
2012	I	Within 1 week	4,343	4,236	98	0	9
	II	Within 1 year	41,346	39,098	655	0	1,593
	III	Within 3 years	13,050	4,146	896	1	8,007
	IV	N/A	105,813	5,548	NA	100,265	NA
2013	I	Within 1 week	15,183	14,893	234	0	56
	II	Within 1 year	80,626	68,609	2,651	0	9,366
	III	Within 3 years	15,905	4,046	0	11,859	0
	IV	N/A	167,640	6,678	NA	160,962	NA
2014	I	Within 1 week	18,447	18,034	332	0	81
	II	Within 1 year	104,928	75,963	6,814	0	22,151
	III	Within 3 years	17,545	3,698	0	13,847	0
	IV	N/A	190,468	7,170	NA	183,298	NA
2015	I	Within 1 week	8,440	8,088	209	12	131
	II	Within 1 year	47,664	41,495	0	6,169	0
	III	Within 3 years	41,778	2,747	0	39,031	0
	IV	N/A	102,337	5,400	NA	96,937	NA

Appendix 4 - Summary of Deficiencies and Repair Activity Resulting from the Inspection Process (Cont.)

Level IV Conditions

	2011		2012		2013		2014		2015	
	Number of Conditions Found	Number of Conditions Repaired	Number of Conditions Found	Number of Conditions Repaired	Number of Conditions Found	Number of Conditions Repaired	Number of Conditions Found	Number of Conditions Repaired	Number of Conditions Found	Number of Conditions Repaired
Overhead Facilities										
Overhead Facilities Total	2,078	421	1,886	340	1,324	843	21	2	28,000	29
Underground Facilities										
Underground Facilities Total	87,527	6,938	102,348	4,135	165,093	5,146	187,892	6,441	73,703	4,944
Pad Mount Transformers										
Pad Mount Transformers Total	1,264	1,018	1,363	907	1,135	616	2,540	726	572	382
Streetlight Facilities										
Streetlight Facilities Total										
Transmisssion Facilities										
Transmission Facilities Total	150	91	216	166	88	73	15	1	62	45
Overall Level IV Deficiencies										
Level IV Deficiencies Total	91,019	8,468	105,813	5,548	167,640	6,678	190,468	7,170	102,337	5,400

Exhibit 1

Certification of Contact Voltage Testing

Patrick G. McHugh, on this 11 day of February 2016, certifies as follows:

1. I am Vice President of Consolidated Edison Company of New York, Inc. ("Con Edison" or "the Company").

2. I am responsible for overseeing Con Edison's contact voltage testing program, and in that capacity I have monitored the Company's contact voltage testing program during the twelve months ended December 31, 2015 ("the twelve month period"). During the twelve-month period, Con Edison instituted and diligently carried out a program designed to meet the contact voltage testing requirements of the Public Service Commission's Safety Standards, issued in Case 04-M-0159, Proceeding Instituting Safety Standards.

3. To the best of my knowledge, information, and belief, during the twelve month period, Con Edison identified and tested for contact voltage (i) all publicly accessible electric facilities owned by the Company, and (ii) all publicly accessible streetlights and traffic signals located in public thoroughfares in the Company's service territory and directly supplied by the Company as identified through a good faith effort by the Company, except for such facilities that are identified in the Company's Annual Report, submitted herewith.

Patrick G. McHugh

Certification of Inspections

Patrick G. McHugh, on this 11 day of February 2016, certifies as follows:

1. I am Vice President of Consolidated Edison Company of New York, Inc. ("Con Edison" or "the Company").

2. I am responsible for overseeing Con Edison's electric facility inspection program, and in that capacity I have monitored the Company's inspection program during the twelve months ended December 31, 2015 ("the twelve-month period"). During the twelve-month period, Con Edison instituted and diligently carried out a program designed to meet the inspection requirements established by the Public Service Commission's Safety Standards, issued in Case 04-M-0159, Proceeding Instituting Safety Standards.

3. To the best of my knowledge, information, and belief, Con Edison has visually inspected the requisite number of electric facilities during the twelve-month period, including the requirement to have conducted a visual inspection of at least 17% of its electric facilities through December 31, 2015.

Patrick G. McHugh