



February 15, 2013

**VIA ELECTRONIC MAIL**

Honorable Jeffrey Cohen  
Acting Secretary  
New York State Public Service Commission  
Three Empire Plaza  
Albany, New York 12223

Re: Case 04-M-0159 - Proceeding on Motion of the Commission to Examine the Safety of Consolidated Edison Company of New York, Inc.'s Electric Transmission and Distribution Systems.

Dear Acting Secretary Cohen:

New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation submits for filing the 2012 Annual Stray Voltage Testing and Facility Inspection Reports in the above referenced proceeding.

If you have any questions pertaining to this information, please contact Jennifer R. Smith at 585.771.4282

Respectfully submitted,

A handwritten signature in black ink that reads "Catherine Stelianou".

Catherine Stelianou

Analyst – Regulatory Administration

Enclosure





New York State Electric and Gas  
Corporation

STRAY VOLTAGE TEST AND  
FACILITY INSPECTION  
PROGRAM

Report on the results of Stray Voltage Tests and  
Facility Inspections for the 12-month period  
ending on December 31, 2012

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## **I. Background**

The New York State Public Service Commission's ("PSC" or "Commission") Electric Safety Standards Order issued on January 5, 2005 (Case 04-M-0159), with subsequent revisions issued on July 21, 2005, December 15, 2008, and July 21, 2010 (Case 10-E-0271), (collectively referred to herein as the "Safety Standards" or "Order"), require electric utilities in New York State, including New York State Electric & Gas ("NYSEG" or the "Company") to test annually all of their publicly accessible transmission and distribution facilities for stray voltage and to inspect their electric facilities every five years.

This report describes New York State Electric & Gas's Stray Voltage Detection Program and Equipment Inspection Program conducted in 2012.

## **II. Company Overview**

NYSEG is located in upstate New York and serves approximately 860,609 electric customers. NYSEG covers an area of about 18,359 square miles or 40% of upstate New York, and serves a primarily rural area composed of 149 small cities and villages.

NYSEG's electric delivery infrastructure consists of 519 substations, approximately 49,758 underground facilities and 5,412 streetlight/traffic signal facilities. This system includes an estimated 820,049 distribution structures and 76,841 transmission structures.

## **III. Stray Voltage Testing Program**

During the period ending December 31, 2012, NYSEG conducted stray voltage testing of all its publicly accessible transmission and distribution facilities that are capable of conducting electricity, and all Company and non-Company owned metallic streetlights and traffic signals. The Company also tested all publicly accessible third party facilities in close proximity to NYSEG's system components identified with elevated voltage.

In addition, and in compliance with the Order, NYSEG:

- a. Immediately safeguarded and/or mitigated all voltage findings  $\geq 1.0$  volt. In instances where the stray voltage finding was determined to be caused by customer-owned equipment, the area was immediately made safe and the customer or responsible party associated with the premises was notified of the unsafe condition and the need for the customer to arrange for a permanent repair. Voltage findings determined to be caused by a utility-owned facility

were immediately safeguarded and/or mitigated. All permanent repairs were made within 45 days.

- b. Tested all publicly accessible structures and sidewalks within a 30 foot radius of the electric facility or streetlight where there was a stray voltage finding  $\geq$  1.0 volt.
- c. Responded, investigated, and mitigated positive findings of shock incidents reported by the public.

Of the 966,442 facilities visited, 205,055 did not require stray voltage testing because these are wood poles that have no attached appurtenances capable of conducting electricity; their electrically conductive appurtenances are not accessible to the public (pre-wired wood); the facilities are enclosed in fiberglass (non-conductive materials); de-energized facilities; and/or the facilities are deemed inaccessible to the public.

#### Structures Inaccessible to the Public

There are several types of Inaccessible structures as described below. Of the 966,442 facilities visited, 2,362 were deemed Inaccessible to the public. If the contractor could not reach the structure to perform a test, it was identified as “Inaccessible” and all other pertinent data was collected in the field. Contractors made every attempt to locate and test all structures. Inaccessible structures include:

- a. Private Property – The structure was not tested if it was located on private property and was inaccessible due to walls, fences or barriers such as a locked gate, if excavation or bush/tree removal was required, or if there was unauthorized construction around the structure.
- b. NYSEG Property – Structure located on Company property, such as substations, are accessible only to Company personnel and authorized contractors.
- c. Buried / Paved Over – The structure was not tested if it had been covered over with dirt, pavement, or other foreign objects that would prohibit public access and prevent testing the structure. Contractors noted the structure ID on the issued maps and turned them in to Maintenance Engineering for verification with the Maps and Records Department. If Maps and Records confirmed that the structure does exist, company and contractor crews followed up and attempted to locate, uncover, and test the structure. If the structure could not be found, it was then considered removed from the field, and revisions to mapping were generated.
- d. Inside Building – If a tester identified a structure as being inside a building, NYSEG personnel verified that the structure was actually inside the building. If the NYSEG personnel verified that the structure was accessible to the public, a test was performed. Typically, customer owned equipment that is inside a building is in a locked equipment room that is accessible to authorized personnel only.

- e. Limited Access Highways – Structures located on highways, exit and entrance highway ramps. The performance of stray voltage testing would constitute an unacceptable risk to the employee.
- f. Dangerous Terrain – Poles located on cliffs and other dangerous terrain are generally inaccessible to Company personnel and are approached only under urgent circumstances. The performance of stray voltage testing would constitute an unacceptable risk to the employee.

#### **IV. Facility Inspection Program**

The Safety Standards require NYSEG to visually inspect approximately 20% of its facilities annually, resulting in 100% inspection of its electric facilities every five years.

The objective of all inspections is to conduct a careful and critical examination of an electric facility by a qualified individual to determine the condition of the facility and the potential to cause, or lead to safety hazards, or adverse effects on reliability.

Inspections conducted during routine maintenance and other work not directly related to the inspection program 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 the Electric Safety Standards.

In accordance with the Safety Standards, NYSEG 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.

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 shall be used for future monitoring purposes and planning proactive maintenance activities.

In accordance with the PSC requirements, 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. Temporary repairs that remain on the system for more than 90 days are due to extraordinary circumstances, i.e. storms, and require extensive repair activity. The Company puts forth best efforts to conduct permanent repairs in the field, and only construct a temporary repair if/when absolutely necessary. For cycle year 2012, NYSEG has no temporary repair exceptions to report.

## V. Company Facilities

### Structure Categories

NYSEG has approximately 759,025 individual facilities that require testing for the presence of stray voltage. These facilities are broken down into four main categories including:

Distribution Overhead – There are approximately 617,459 distribution pole structures that require testing for the presence of stray voltage in NYSEG’s territory. The testing criteria include all utility-owned or joint use wooden poles with utility electrical facilities located on both public thoroughfares and customer property, including backyards or alleys. Stray 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. Distribution overhead facilities are included in both the stray voltage and inspection programs.

Underground Facilities – There are 37,052 underground facilities that require testing for the presence of stray voltage that comprise NYSEG’s system. The testing criteria are comprised of subsurface structures, including above ground pad-mounted structures. Included in the underground facilities are pad-mount switchgear cases, pad-mount transformer cases, electric utility manhole covers, submersible transformer covers, electric utility handhole covers, network vaults and grates. These facilities are included in both the stray voltage and facility inspection programs.

Street lights and Traffic Signals – There are approximately 17,146 metallic street lights and approximately 15,902 traffic signals within NYSEG’s service territory that require testing for the presence of stray voltage. This total includes metallic street lights owned by NYSEG with the balance of the equipment owned by various municipalities. The testing criteria include all metallic streetlights, traffic signals, and pedestrian crosswalk signals located on publicly accessible thoroughfares. All stray voltage testing of street lights is performed at night while the fixtures are energized. Area and street lighting that is privately owned is not included in the stray voltage testing program, as per the Order’s requirements. All Company-owned streetlights are included in the facility inspection program.

Transmission Structures – There are 70,879 individual poles/towers that require testing for the presence of stray voltage that comprise NYSEG’s transmission system. The testing criteria is comprised of all structures, guys, and down leads attached to the structures. Transmission structures support circuit voltages of 34.5 kilovolts and greater. Transmission poles as described above, with distribution under-build, are included in this transmission category. All transmission structures are included in both the stray voltage and facility inspection programs.

Substations – There are 519 substation fences that require annual testing for the presence of stray voltage in NYSEG’s territory.

**VI. Annual Performance Targets**

NYSEG performed the required stray voltage testing and facilities inspections in accordance with the requirements set forth in the Order.

In compliance with the Safety Standards, NYSEG has met the annual performance target for stray voltage testing of 100% of electric facilities and streetlights for the period ending December 31, 2012.

In addition, in compliance with the Safety Standards, NYSEG has met the third year annual inspection target of 20% of its electric facilities and the cumulative inspection target of 60% of its facilities for the period ending December 31, 2012.

The results are summarized in the table below.

*Facility Inspection Program Results*

<b>Category</b>	<b>NYSEG Inspection Target</b>	<b>Actual Cumulative Inspected as of 2012</b>
Overhead Distribution	60%	63%
Overhead Transmission	60%	62%
Underground	60%	50%
Streetlight	60%	74%



## **5-Year Inspection Performance Summary**

### *Overhead Distribution Facilities*

Inspection Year	Number of Overhead Distribution Structures Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	168,617	21%
2011	173,214	42%
2012	177,732	63%
2013		
2014		

### *Overhead Transmission Facilities*

Inspection Year	Number of Overhead Transmission Facilities Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	20,143	26%
2011	13,869	44%
2012	13,299	62%
2013		
2014		

### *Underground Facilities*

Inspection Year	Number of Underground Facilities Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	11,488	23%
2011	6,706	37%
2012	6,691	50%
2013		
2014		

### *Streetlights*

Inspection Year	Number of Streetlights Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	1,970	36%
2011	848	52%
2012	1,191	74%
2013		
2014		

## **VII. Certifications**

Pursuant to Section 7 of Appendix A of the Safety Standards, the president or officer of each utility with direct responsibility for overseeing stray voltage testing and facility inspections shall provide an annual certification to the Commission that the utility has, to the best of his or her knowledge, exercised due diligence in carrying out a plan, including quality assurance, that is designed to meet the stray voltage testing and inspection requirements, and that the utility has:

- Tested all of its publicly accessible electric facilities and street lights, as referred to in the body of the February 15 Report, and
- Inspected the requisite number of electric facilities.

The certifications are attached as Exhibit 1 of this report.

## **VIII. Analysis of Causes of Findings and Stray Voltage**

All New York State utilities perform an inventory on all findings and report on the number of these findings each year. Section 1(f) of the December 15, 2008 Order 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 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.” A Summary of Energized Objects for the manual program can be found in Appendix 2 of this report.

Generally, there are two types of reported findings; a confirmed voltage reading greater than or equal to 1 volt measured using a volt meter and 500 ohm shunt resistor which is the result of an abnormal power system condition, and a confirmed voltage reading greater than or equal to 1 volt measured using a volt meter and 500 ohm shunt resistor which results from the normal delivery and/or use of electricity. Utilities are required to report on all findings, regardless of whether or not the voltage is abnormal or normal to operating conditions. The detection rate for all findings in 2012 as shown in Appendix 1 is .068%. Inclusion of these normal occurring voltages in the total findings can result in the perception that there are more potentially hazardous voltage findings than actually exist. Upon excluding these normal occurring voltages illustrates a detection rate of .022% which more accurately represents confirmed abnormalities across our total system.

Causes of these findings include, but are not limited to, naturally occurring neutral to earth voltages (as part of a multi-grounded WYE power system); poor soil grounding conditions; load imbalance between phases; long low voltage single phase circuit spurs with high current loads; and/or proximity to transmission lines. Attempts to mitigate these conditions include a high cost, and there is no guarantee of resolution.

True hazardous voltages have been identified and mitigated through the stray voltage testing program. These voltages resulted from a variety of conditions including: deterioration of conductors; age of equipment; exposure to the elements; and various customer related issues. Through the efforts of the stray voltage testing program, NYSEG has been able to repair these issues and mitigate the danger associated with the elevated voltage.

Some distinction needs to be made between these two classes of findings: findings due to potentially hazardous Stray Voltage, and findings normal to the operating system.

The following table contains a breakdown of the causes of Stray Voltage Findings identified through the 2012 manual testing effort:

<i>Structure Type</i>	<i>Cause of Stray Voltage</i>	<i>Stray Voltages Found</i>
Distribution	Ground Rods	85
Distribution	Customer Owned Equipment	23
Distribution	Transformers/ Capacitors	6
Distribution	Guy Wire	18
Distribution	Defective Cutout/Lightening Arrestor	8
Distribution	Defective Insulator	1
Distribution	Vegetation	3
Distribution	Defective Primary Neutral Connection	7
Distribution	Loose Connections	3
Distribution	Open Secondary Neutral	1
Streetlights	Defective Neutral – Underground Cable	2
Streetlights	City/Town Owned Equipment	2
Streetlights	Defective Light Fixture	2
Streetlights	Defective Neutral Connection- Light Pole	1
Streetlights	Customer Owned Equipment	2
Streetlights	Defective Neutral – Traffic Signal Pole	3
Streetlights	Loose Connections	3
Transmission	Ground Rods	16
Transmission	Guy Wire	5
		<b>192</b>

In accordance with the PSC requirements; when a finding is discovered on an electric facility or streetlight during stray voltage testing, the Company is obligated to perform stray voltage testing on all publicly accessible structures and sidewalks within a minimum 30 foot radius of the electric facility or streetlight. In this year’s testing cycle 192 findings due to potentially hazardous stray voltages were found. A total of 47 additional objects were tested as a result of testing within a 30 foot radius. Of the 47 objects tested, 9 were energized associated with the initial tested structure. Eight objects were mitigated when the initial tested structure was repaired, and one was energized resulting from normal system current.

**IX. Analysis of Inspection Results**

*Overhead Distribution Structures*

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
177,732	42,808	24.08%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	149	.35%
2	2,420	5.65%
3	12,179	28.45%
4	28,060	65.55%
Total:	42,808	100%

*Overhead Transmission Facilities*

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
13,299	1,378	10.36%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	2	.15%
2	95	6.89%
3	702	50.94%
4	579	42.02%
Total:	1,378	100%

*Underground Facilities*

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
6,691	817	12.21%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	20	2.45%
2	36	4.41%
3	493	60.34%
4	268	32.80%
Total:	817	100%

Streetlights

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
1,191	28	2.35%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	0	0%
2	5	17.86%
3	16	57.14%
4	7	25%
Total:	28	100%

In 2012, a total of 45,031 deficiencies were identified through scheduled inspections which represent a deficiency rate of about 22.64% of the total unique inspections performed.

New this year, NYSEG outsourced the inspection effort after previously utilizing internal resources, and instituted a new inspection protocol. Overhead Distribution and Underground inspections were performed using a Distribution Line Inspection (“DLI”) Toughbook. The DLI Toughbooks are portable laptop computers with pre-loaded software that displays all assets to be inspected and includes pre-formatted inspection pick tables the inspectors will use to document individual inspections. The DLI Toughbook has built-in GPS equipment that displays its real-time position in relation to any company asset. Inspectors are required to document all inspections on the DLI Toughbook, and the data is uploaded into the Company work management system.

The Company’s asset records within the work management system are being enhanced through data obtained through the annual inspection program to better reflect specific equipment or structure classifications. This is an ongoing effort and will result in the Company being able to better distinguish separation of the Underground and Pad-Mount Facilities. Accordingly, for this report, combining the Underground and Pad-Mount Facility tables more accurately represents the actual inspection progress made within this asset grouping.

Each and every year since the commencement of the Safety Standards Order in 2005, NYSEG has continually made improvements toward the administration of the Facility Inspection program. The results of these improvements have provided some additional benefits to the Company.

The collection and management of data was centralized into a single program group to provide an effective way to communicate inspection progress and issues

to and from field operations and inspectors. The asset data received has enhanced the quality of information we had in place identifying in more detail specific structure attributes giving us the ability to document accurate GPS locations in the field. Common training efforts were conducted among all field personnel through the centralized program group resulting in uniform standardized reporting of field conditions.

Other groups within the company have also capitalized on this information to assist them in their particular needs. Asset Management groups have used inspection information to assist them in trending analysis and preparation of targeted maintenance efforts such as pole treatment and replacement projects, and other equipment issues. Vegetation Management groups routinely use inspection information to look for potential trouble spots where out of cycle trimming may be necessary.

## **X. Stray Voltage Testing and Inspection QA/QC Programs**

### **Stray Voltage Testing QA/QC Program**

Throughout the stray voltage testing effort, the testing contractor submits their testing data to NYSEG in the form of batch files. These batch files are submitted for multiple QA/QC reviews. The first review that takes place is for data accuracy. Batch files are scanned to ensure formatting and proper data is populated in each of the required fields. If approved, the file is loaded into the production database and a copy forwarded to the Global Positioning System (GPS) QA/QC Team for the second review to check the data for positional accuracy and content. If the data is not acceptable, the contractor is notified of such and the reasons for failure. The testing contractor remedies the problems and re-submits the file with corrections.

Following vendor batch file approval through the program administrator, the GPS QA/QC team loads the batch file into NYSEG's GIS database, SDE. The QA/QC team uses the GIS application Arc Map to evaluate and certify the testing results. The data, GPS location, test results and time stamp are recorded at each structure on Trimble GeoXt handheld devices with sub-meter GPS capability during the field testing effort. This collection method has been extensively used and successfully tested by NYSEG as an effective means of monitoring progress and ensuring the stray voltage testing contractor is acquiring all test points and delivering complete and accurate results. Additionally, the GPS QA/QC team employs the use of high level satellite ortho photography to verify positional accuracy.

The methodologies deployed to conduct the QA/QC evaluation are as follows:

- Upon data load into SDE, the level of digitized data points is checked and recorded to insure that the number of points does not exceed the expected level based on satellite position, interference (i.e. buildings, vegetation) and equipment capabilities. This level is generally < 1%. Also, at this time a gross high level check is made looking for gross geographical errors that would indicate a batch file processing error by the vendor. If either of these conditions is not acceptable the “batch” is rejected.
- Following the initial checks above, the batch data is overlaid on top of the previous years’ data in Arc Map. All data is 100% evaluated against the prior testing effort plus some additional safeguards to be covered later. These methods have proven to be very effective in ensuring that all structures have been tested. The overall management of the process is through a grid system on which the field testing maps are based. As data accumulates throughout the year the grids are attributed to reflect their completeness based on structure type, i.e. Streetlights OK = Yes and so on.
- The next aspect of QA/QC effort is final certification by division. When we are notified by the vendor that a division is complete and all data has been submitted we initiate a final audit of the division. This is a final review of any missed structures and any new structures not tested. Any structures deemed “missed” are extracted into a shape-file (GIS database) and fed back to the vendor for follow up testing, thus completing a continuous feedback loop year to year to cover missed structures. At this time the QA/QC team does a high level grid check to make sure no map sheets were omitted.
- The additional safeguards mentioned above are as follows:
  - Duplicate testing of structures: The analysts are prompted to be aware of and flag any evidence of massive duplicate testing.
  - GPS time stamp anomalies: Analysts are aware to look for suspicious time intervals between structures, particularly on heavily digitized areas (i.e. 3 seconds between poles 300’ apart).

The QC team does a periodic review of the Stray Voltage data vs. The Corporate electrical distribution asset system called Smart-map. This evaluation allows us to identify any new or previously missed structures which are extracted and sent back to the vendor for testing.

#### Random Quality Assurance

On an ongoing basis, NYSEG performs many quality assurance measures to ensure testing data accuracy. These include, but are not limited to; investigations into inaccessible structures to determine the nature of inaccessibility, performance of individual testers, miscellaneous anomalies found in testing data, and checking circuit maps to ensure all structures have been visited. Problem testers are identified to the testing contractor and, if need be, removed from the testing effort. If needed, problem areas are retested in order to ensure testing accuracy. Any



discrepancies found as a result of random data sampling checks like wrong town or street name and incorrect spellings are then corrected.

In addition to these measures, Field Coordinators conduct random field visits to ascertain that field contractors are performing tests on all required structures. During these visits, the Field Coordinator will observe testers performing their work to ensure they're doing it correctly and answer any questions about map reading, structure IDs, and location of structures. The Field Coordinator also performs follow up on randomly chosen completed maps to check that all structures were tested and recorded properly.


### Inspection QA/QC Program

NYSEG's inspection program is administered through the Inspection Tracking System (ITS) Group. The ITS Group monitors all company assets in a central database to ensure all planned inspections for the current year are performed.

The ITS Group randomly selects a sample set of reported repaired deficiencies throughout each division. This sample set contains all information regarding the deficiency including the cause and the reported repair effort and is given to the QA/QC Coordinators to be field evaluated. NYSEG performs field verifications in each of its thirteen divisions to assess the reported results from inspectors. QA/QC Coordinators visit the specific asset and validate whether the reported repair work has been made. Independent results of the verification effort are compared to the original reporting to assess effectiveness.

In addition, the ITS Group develops a random sample of assets from each of the circuits inspected in the current year. Administered by a third party of QA/QC Coordinators who are qualified to perform utility inspections, they are deployed to perform independent field inspections on these random assets. Results of their findings are compared with results submitted by the field inspectors to assess effectiveness.

## Appendix 1 Stray Voltage Testing Summary


	Total System Units Requiring Testing	Units Completed	Percent Completed	Units with Voltage Found (>= 1.0v)	Percent of Units Tested with Voltage (>= 1.0v )	Units Classified as Inaccessible
<b>Distribution Facilities</b>	817,774	817,774	100%	190	0.023%	1,599
<b>Underground Facilities</b>	37,213	37,213	100%	1	0.003%	157
<b>Street Lights / Traffic Signals</b>	33,143	33,143	100%	16	0.048%	11
<b>Substation Fences</b>	519	519	100%	1	0%	0
<b>Overhead Transmission</b>	77,793	77,793	100%	451	0.580%	595
<b>Underground Transmission</b>	0					
<b>TOTAL</b>	966,442	966,442	100%	659	0.068%	2,362

## Appendix 2 Summary of Energized Objects



	Initial Readings				Readings after Mitigation		
	1-4.4V	4.5-24.9V	>25V	Totals	< 1V	1-4.4V	>4.5V
<b>Distribution Facilities</b>	<b>162</b>	<b>17</b>	<b>11</b>	<b>190</b>	<b>122</b>	<b>31</b>	<b>3</b>
Pole				0			
Ground	74	14	11	99	61	15	1
Guy	70	2	0	72	51	15	2
Riser	7	0	0	7	6	1	0
Other	11	1	0	12	4	0	0
<b>Underground Facilities</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
Manhole/ Pull box				0			
Manhole				0			
Padmount Switchgear				0			
Padmount Transformer				0			
Vault-Cover/Door				0			
Pedestal				0			
Other	1	0	0	1	0	1	0
<b>Street Lights/Traffic Signals</b>	<b>5</b>	<b>3</b>	<b>8</b>	<b>16</b>	<b>14</b>	<b>0</b>	<b>0</b>
Metal Street Light Pole	2	2	7	11	9	0	0
Traffic Signal Pole	1	0	0	1	1	0	0
Pedestrian Crossing Pole				0			
Traffic Control Box				0			
Other	2	1	1	4	4		
<b>Substation Fences</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
Fence	1	0	0	1	0	1	0
Other				0			
<b>Transmission (Total)</b>	<b>418</b>	<b>33</b>	<b>0</b>	<b>451</b>	<b>25</b>	<b>83</b>	<b>5</b>
Lattice Tower				0			
Pole	2	0	0	2	0	1	0
Ground	327	23	0	350	17	65	2
Guy	88	10	0	98	8	15	3
Other	1	0	0	1	0	2	0
<b>Miscellaneous Facilities</b>	<b>7</b>	<b>0</b>	<b>2</b>	<b>9</b>	<b>8</b>	<b>1</b>	<b>0</b>
Sidewalk				0			
Gate/Fence/Awning	1	0	0	1	0	1	0
Control Box				0			
Scaffolding				0			
Bus Shelter				0			
Fire Hydrant				0			
Phone Booth				0			
Water Pipe				0			
Riser	1	0	0	1	1	0	0
Other	5	0	2	7	7	0	0

### Appendix 3 Summary of Shock Reports from the Public

 NYSEG	Data collected as of December 31, 2012	Quarterly Update	Yearly Total
<b>I. Total Shock Calls Received:</b>		<b>7</b>	<b>22</b>
<b>Unsubstantiated</b>		1	3
<b>Normally Energized Equipment</b>		3	7
<b>Stray Voltage:</b>		<b>3</b>	<b>12</b>
Person		2	10
Animal		1	2
<b>II. Injuries Sustained/Medical Attention Received:</b>		<b>2</b>	<b>5</b>
Person		2	4
Animal			1
<b>III. Voltage Source:</b>		<b>3</b>	<b>12</b>
<b>Utility Responsibility</b>			
Issue with primary, joint, or transformer		1	3
Secondary joint (Crab)			
SL service Line			
Abandoned SL service line			
Defective service line			
Abandoned service line			
OH Secondary			
OH Service			1
OH Service neutral			
Pole			1
Riser			
Other			1
<b>Customer Responsibility</b>			
Contractor damage			
Customer equipment/wiring		2	5
<b>Other Utility/Gov't Agency Responsibility</b>			
SL Base Connection			
SL Internal wiring or light fixture			
Overhead equipment			1
<b>IV. Voltage Range:</b>		<b>3</b>	<b>12</b>
1.0V to 4.4V			
4.5V to 24.9V			1
25V and above			2
No Reading		3	9





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

Overhead Facilities	2009			2010			2011			2012			2013		
	Priority Level			Priority Level			Priority Level			Priority Level			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
<b>Pole Equipment</b>															
<b>Transformers</b>															
Number of Deficiencies	2	11	12	1	20	19	3	8	22	4	52	1,068			
Repaired in Time Frame	1	11	12	1	20	11	2	7	6	2	7	19			
Repaired - Overdue	1						1	1		2					
Not Repaired - Not Due						8			16		45	1,049			
Not Repaired - Overdue															
<b>Cutouts</b>															
Number of Deficiencies	-	4	19	2	6	43	0	29	79	1	34	27			
Repaired in Time Frame		4	19	2	6	42		23	5	1	4				
Repaired - Overdue								4							
Not Repaired - Not Due						1			74		30	27			
Not Repaired - Overdue								2							
<b>Lightning Arrestors</b>															
Number of Deficiencies	-	12	14	1	31	26	0	34	100	0	45	268			
Repaired in Time Frame		9	13	1	31	16		29	9		2	4			
Repaired - Overdue		3	1					4							
Not Repaired - Not Due						10			91		43	264			
Not Repaired - Overdue								1							
<b>Skypin/Skypin Bolt</b>															
Number of Deficiencies	-	-	-	-	-	-	0	0	0	0	0	0			
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
<b>Miscellaneous</b>															
<b>Trimming Related</b>															
Number of Deficiencies	50	390	796	106	74	76	66	1	1	52	3	20			
Repaired in Time Frame	45	381	796	90	73	75	54	1	1	38					
Repaired - Overdue	5	9		16	1		12			14					
Not Repaired - Not Due						1					3	20			
Not Repaired - Overdue															
<b>Other</b>															
Number of Deficiencies	6	16	17	11	16	40	4	22	32	0	147	1,141			
Repaired in Time Frame	3	16	17	11	16	24	3	21	22		11	2			
Repaired - Overdue	3						1								
Not Repaired - Not Due						16			10		136	1,139			
Not Repaired - Overdue								1							
<b>Overhead Facilities Total</b>															
<b>Total</b>															
Number of Deficiencies	113	741	1,392	252	671	842	138	1,121	1,602	149	2,420	12,179			
Repaired in Time Frame	89	710	1,369	219	640	588	114	890	358	102	167	129			
Repaired - Overdue	24	31	20	33	31	-	24	117	-	42	0	0			
Not Repaired - Not Due	-	-	-	-	-	254	-	-	1,244	0	2,253	12,050			
Not Repaired - Overdue	-	-	3	-	-	-	-	114	-	5	0	0			

**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Transmission**

Transmission Facilities	2009			2010			2011			2012			2013			
	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
<b>Towers/Poles</b>																
<b>Steel Towers</b>																
Number of Deficiencies	-	-	-	-	-	10	-	2	-	-	-	2				
Repaired in Time Frame						1										
Repaired - Overdue								1								
Not Repaired - Not Due						9						2				
Not Repaired - Overdue								1								
<b>Poles</b>																
Number of Deficiencies	-	-	123	-	41	154	1	14	191	-	51	266				
Repaired in Time Frame			65		26	72	1	4	23			1				
Repaired - Overdue			50		15											
Not Repaired - Not Due						82			168		51	265				
Not Repaired - Overdue			8					10								
<b>Anchors/Guy Wire</b>																
Number of Deficiencies	-	1	13	2	26	13	1	2	11	-	-	30				
Repaired in Time Frame		1	9	2	22	7	1	2	5			3				
Repaired - Overdue					4											
Not Repaired - Not Due						6			6			27				
Not Repaired - Overdue			4													
<b>Crossarm/Brace</b>																
Number of Deficiencies	-	12	56	2	54	87	-	76	75	-	22	76				
Repaired in Time Frame		9	23	2	32	41		27	29			3				
Repaired - Overdue		3	31		22			2								
Not Repaired - Not Due						46			46		22	73				
Not Repaired - Overdue			2					47								
<b>Grounding System</b>																
Number of Deficiencies	-	-	46	45	28	108	2	32	106	-	11	274				
Repaired in Time Frame			41	44	18	7	1	26	18			22				
Repaired - Overdue			3	1	10		1									
Not Repaired - Not Due						101			88		11	252				
Not Repaired - Overdue			2					6								
<b>Conductors</b>																
<b>Cable</b>																
Number of Deficiencies	-	1	-	-	3	-	2	3	-	2	-	3				
Repaired in Time Frame		1			1		2	2		2						
Repaired - Overdue					2											
Not Repaired - Not Due												3				
Not Repaired - Overdue								1								
<b>Static/Neutral</b>																
Number of Deficiencies	-	3	1	-	-	1	-	1	5	-	2	5				
Repaired in Time Frame		3	1			1		1	3			1				
Repaired - Overdue																
Not Repaired - Not Due									2		2	4				
Not Repaired - Overdue																
<b>Insulators</b>																
Number of Deficiencies	-	9	46	1	8	39	4	48	63	-	9	40				
Repaired in Time Frame		9	32		7	14	4	20	24							
Repaired - Overdue			7	1	1											
Not Repaired - Not Due						25			39		9	40				
Not Repaired - Overdue			7					28								

**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Transmission**

Transmission Facilities	2009			2010			2011			2012			2013			
	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	
<b>Miscellaneous</b>																
<b>Right of Way Condition</b>																
Number of Deficiencies	-	3	13	-	23	5	-	1	-	-	-	-				
Repaired in Time Frame		3	13		22	4		1								
Repaired - Overdue					1											
Not Repaired - Not Due						1										
Not Repaired - Overdue																
<b>Other</b>																
Number of Deficiencies	2	6	26	43	25	121	6	4	8	-	-	6				
Repaired in Time Frame	2	6	19	43	25	44	6	3	2			2				
Repaired - Overdue			1													
Not Repaired - Not Due						77			6			4				
Not Repaired - Overdue			6					1								
<b>Transmission Facilities Total</b>																
<b>Total</b>																
Number of Deficiencies	2	35	324	93	208	538	16	183	459	2	95	702				
Repaired in Time Frame	2	32	203	91	153	191	15	86	104	2	-	32				
Repaired - Overdue	-	3	92	2	55	-	1	3	-	-	-	-				
Not Repaired - Not Due	-	-	-	-	-	347	-	-	355	-	95	670				
Not Repaired - Overdue	-	-	29	-	-	-	-	94	-	-	-	-				



**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Underground**

Underground Facilities	2009			2010			2011			2012			2013			
	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	
<b>Underground Structures</b>																
<b>Damaged Cover</b>																
Number of Deficiencies	5	2	2	21	23	5	6	7	4	-	3	7				
Repaired in Time Frame	1	1	2	21	23	5	6	6	4			1				
Repaired - Overdue	4	1														
Not Repaired - Not Due											3	6				
Not Repaired - Overdue								1								
<b>Damaged Structure</b>																
Number of Deficiencies	14	10	7	8	10	3	-	-	-	-	2	1				
Repaired in Time Frame	13	8	7	7	10	2					1					
Repaired - Overdue	1	2		1												
Not Repaired - Not Due						1					1	1				
Not Repaired - Overdue																
<b>Congested Structure</b>																
Number of Deficiencies	4	21	102	-	-	4	-	-	-	-	-	-				
Repaired in Time Frame	4	19	98													
Repaired - Overdue		2	4													
Not Repaired - Not Due						4										
Not Repaired - Overdue																
<b>Damaged Equipment</b>																
Number of Deficiencies	14	25	34	4	6	3	-	-	-	-	-	-				
Repaired in Time Frame	13	24	31	4	6	1										
Repaired - Overdue	1	1	3													
Not Repaired - Not Due						2										
Not Repaired - Overdue																
<b>Conductors</b>																
<b>Primary Cable</b>																
Number of Deficiencies	1	1	1	1	-	-	-	1	-	-	-	-				
Repaired in Time Frame	1	1	1	1				1								
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																
<b>Secondary Cable</b>																
Number of Deficiencies	-	9	9	-	-	-	-	-	-	-	-	-				
Repaired in Time Frame		9	9													
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																
<b>Neutral Cable</b>																
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-				
Repaired in Time Frame																
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																
<b>Racking Needed</b>																
Number of Deficiencies	3	4	1	-	-	-	-	-	-	-	-	-				
Repaired in Time Frame		1	1													
Repaired - Overdue	3	3														
Not Repaired - Not Due																
Not Repaired - Overdue																

**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Underground**

Underground Facilities	2009			2010			2011			2012			2013		
	Priority Level I	Priority Level II	Priority Level III	Priority Level I	Priority Level II	Priority Level III	Priority Level I	Priority Level II	Priority Level III	Priority Level I	Priority Level II	Priority Level III	Priority Level I	Priority Level II	Priority Level 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>Miscellaneous</b>															
<b>Other</b>															
Number of Deficiencies	32	79	200	6	12	19	-	5	1	-	-	2			
Repaired in Time Frame	26	74	200	6	12	14		3	1						
Repaired - Overdue	6	5						2							
Not Repaired - Not Due						5								2	
Not Repaired - Overdue															
<b>Underground Facilities Total</b>															
<b>Total</b>															
Number of Deficiencies	73	151	356	40	51	34	6	13	5	-	5	10			
Repaired in Time Frame	58	137	349	39	51	22	6	10	5	-	1	1			
Repaired - Overdue	15	14	7	1	-	-	-	2	-	-	-	-			
Not Repaired - Not Due	-	-	-	-	-	12	-	-	-	-	4	9			
Not Repaired - Overdue	-	-	-	-	-	-	-	1	-	-	-	-			

**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Pad Mount Transformers**

Pad Mount Transformers	2009			2010			2011			2012			2013			
	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	
<b>Pad Mount Transformers</b>																
<b>Damaged Structure</b>																
Number of Deficiencies	-	1	49	7	33	8	4	33	10	1	5	80				
Repaired in Time Frame			49	7	27	6	3	20	2	1		2				
Repaired - Overdue		1			6		1	2								
Not Repaired - Not Due						2			8		5	78				
Not Repaired - Overdue								11								
<b>Damaged Equipment</b>																
Number of Deficiencies	-	-	-	2	3	8	-	5	-	-	3	16				
Repaired in Time Frame				1	3	6		4								
Repaired - Overdue				1				1								
Not Repaired - Not Due						2					3	16				
Not Repaired - Overdue																
<b>Cable Condition</b>																
Number of Deficiencies	-	-	-	1	-	3	1	3	-	-	-	11				
Repaired in Time Frame						3	1	2								
Repaired - Overdue				1												
Not Repaired - Not Due												11				
Not Repaired - Overdue								1								
<b>Oil Leak</b>																
Number of Deficiencies	-	-	-	9	25	8	2	8	-	10	6	6				
Repaired in Time Frame				8	22	4	2	8		7	1					
Repaired - Overdue				1	3					2						
Not Repaired - Not Due						4					5	6				
Not Repaired - Overdue										1						
<b>Off Pad</b>																
Number of Deficiencies	-	-	-	13	20	8	7	14	1	1	3	2				
Repaired in Time Frame				11	18	8	7	10		1						
Repaired - Overdue				2	2			2								
Not Repaired - Not Due									1		3	2				
Not Repaired - Overdue								2								
<b>Lock/Latch/Penta</b>																
Number of Deficiencies	-	-	14	11	22	17	3	7	3	7	6	42				
Repaired in Time Frame			14	11	21	14	3	7	2	5	2	2				
Repaired - Overdue					1					2						
Not Repaired - Not Due						3			1		4	40				
Not Repaired - Overdue																
<b>Miscellaneous</b>																
<b>Other</b>																
Number of Deficiencies	-	3	5	11	60	138	1	9	89	1	8	326				
Repaired in Time Frame			5	11	59	136	1	7	86	1	4	10				
Repaired - Overdue		3			1			1								
Not Repaired - Not Due						2			3		4	316				
Not Repaired - Overdue								1								
<b>Pad Mount Total</b>																
<b>Total</b>																
Number of Deficiencies	-	4	68	54	163	190	18	79	103	20	31	483				
Repaired in Time Frame	-	-	68	49	150	177	17	58	90	15	7	14				
Repaired - Overdue	-	4	-	5	13	-	1	6	-	4	-	-				
Not Repaired - Not Due	-	-	-	-	-	13	-	-	13	-	24	469				
Not Repaired - Overdue	-	-	-	-	-	-	-	15	-	1	-	-				

**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Streetlights**

Overhead Facilities	2009			2010			2011			2012			2013			
	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	
<b>Streetlight</b>																
<b>Base/Standard/Light</b>																
Number of Deficiencies	-	2	1	2	51	-	-	-	1	-	3	4				
Repaired in Time Frame		2	1	2	51				1							
Repaired - Overdue																
Not Repaired - Not Due											3	4				
Not Repaired - Overdue																
<b>Handhole/Service Box</b>																
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-				
Repaired in Time Frame																
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																
<b>Service/Internal Wiring</b>																
Number of Deficiencies	-	-	-	-	9	-	-	-	-	-	1	-				
Repaired in Time Frame					9											
Repaired - Overdue																
Not Repaired - Not Due											1					
Not Repaired - Overdue																
<b>Access Cover</b>																
Number of Deficiencies	3	-	-	4	39	-	-	-	-	-	1	11				
Repaired in Time Frame	3			4	39											
Repaired - Overdue																
Not Repaired - Not Due											1	11				
Not Repaired - Overdue																
<b>Miscellaneous</b>																
<b>Other</b>																
Number of Deficiencies	-	1	53	-	3	-	-	1	-	-	-	1				
Repaired in Time Frame		1	53		3			1								
Repaired - Overdue																
Not Repaired - Not Due																1
Not Repaired - Overdue																
<b>Streetlight Total</b>																
<b>Total</b>																
Number of Deficiencies	3	3	54	6	102	-	-	1	1	-	5	16				
Repaired in Time Frame	3	3	54	6	102	-	-	1	1	-	-	-				
Repaired - Overdue	-	-	-	-	-	-	-	-	-	-	-	-				
Not Repaired - Not Due	-	-	-	-	-	-	-	-	-	-	5	16				
Not Repaired - Overdue	-	-	-	-	-	-	-	-	-	-	-	-				

**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Level IV Conditions**

Overhead Facilities	2009		2010		2011		2012		2013	
	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
<b>Overhead Facilities</b>										
<b>Pole Condition</b>										
Pole Condition	104	22	124	18	94	20	847	14		
Grounding System			5	5	6	2	160	15		
Anchors/Guy Wire	4	3	133	128	52	40	3,605	28		
Riser	9	9	11	11			7			
Cross Arm/Bracing	12		106	12	55	8	174	12		
<b>Conductors</b>										
Primary Wire/Broken Ties	4	3	32	10	75	4	31	3		
Neutral					4	2				
Insulators	21	18	318	72	646	13	299			
<b>Pole Equipment</b>										
Transformers	7	4	36	5	314	4	479	22		
Cutouts	3	2	33	5	21	2	42	1		
Lightning Arrestors	1		6	6	7	4	51	2		
Other Equipment			1	1	1					
<b>Miscellaneous</b>										
Trimming Related	80	31	1570	562	2,284	489	4,056	187		
Other	9	6	17	6	81	41	18,309	399		
<b>Overhead Facilities Total</b>	<b>254</b>	<b>98</b>	<b>2392</b>	<b>841</b>	<b>3,640</b>	<b>629</b>	<b>28,060</b>	<b>683</b>		
<b>Transmission Facilities</b>										
<b>Towers/Poles</b>										
Steel Towers	17		10				1			
Poles	128	4	217	5	54	3	59	9		
Anchors/Guy Wire	4		5		5	1	116			
Crossarm/Brace	10		42	4	10	4	24			
Grounding System			28		6	5	29			
<b>Conductors</b>										
Cable	1		1	1						
Static/Neutral	1		2		1		33	10		
Insulators	36	3	51	2	31	13	3	1		
<b>Miscellaneous</b>										
Right of Way Condition	4	3	64	25	54	15				
Other	10		263	76	249	21	314	24		
<b>Transmission Facilities Total</b>	<b>211</b>	<b>10</b>	<b>683</b>	<b>113</b>	<b>410</b>	<b>62</b>	<b>579</b>	<b>44</b>		

**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Level IV Conditions**

Overhead Facilities	2009		2010		2011		2012		2013	
	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
<b>Underground Facilities</b>										
<b>Underground Structures</b>										
Damaged Cover	3	2	5	3			4			
Damaged Structure	3	3	1	1						
Congested Structure	5	5								
Damaged Equipment	2	1								
<b>Conductors</b>										
Primary Cable			2	1						
Secondary Cable	1	1								
Neutral Cable										
Racking Needed										
<b>Miscellaneous</b>										
Other	56	46	107	83			1			
<b>Underground Facilities Total</b>	<b>70</b>	<b>58</b>	<b>115</b>	<b>88</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>		
<b>Pad Mount Transformers</b>										
<b>Pad Mount Structures</b>										
Damaged Structure	9	5	6	3	2		80			
Damaged Equipment			3	3	2	2	7			
Damaged Cable					4	3	5			
Oil Leak			3		2		6	1		
Off Pad			2	2	2		2			
Lock/Latch/Penta			32	31	1		15			
<b>Miscellaneous</b>										
Other	5	2	512	374	165	151	148	6		
<b>Pad Mount Transformer Total</b>	<b>14</b>	<b>7</b>	<b>558</b>	<b>413</b>	<b>178</b>	<b>156</b>	<b>263</b>	<b>7</b>		
<b>Streetlights</b>										
<b>Streetlight</b>										
Base/Standard/Light			13				2			
Handhole/Service Box										
Service/Internal Wiring										
Access Cover			9	2						
<b>Miscellaneous</b>										
Other			11				5			
<b>Streetlight Total</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>		
<b>Total Level IV Conditions</b>										
<b>Overall Total</b>	<b>549</b>	<b>173</b>	<b>3,781</b>	<b>1,457</b>	<b>4,228</b>	<b>847</b>	<b>28,914</b>	<b>734</b>		



## 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
<b>2009</b>						
	I Within 1 week	191	152	39	0	0
	II Within 1 year	934	882	52	0	0
	III Within 3 years	2,194	2,043	119	0	32
	IV N/A	549	173	n/a	376	n/a
<b>2010</b>						
	I Within 1 week	445	404	41	0	0
	II Within 1 year	1,195	1096	99	0	0
	III Within 3 years	1,604	978	0	626	0
	IV N/A	3,781	1,457	n/a	2,324	n/a
<b>2011</b>						
	I Within 1 week	178	152	26	0	0
	II Within 1 year	1,397	1,045	128	0	224
	III Within 3 years	2,170	558	0	1,612	0
	IV N/A	4,228	847	n/a	3,381	n/a
<b>2012</b>						
	I Within 1 week	171	119	46	0	6
	II Within 1 year	2,556	175	0	2,381	0
	III Within 3 years	13,390	176	0	13,214	0
	IV N/A	28,914	734	n/a	28,180	n/a
<b>2013</b>						
	I Within 1 week					
	II Within 1 year					
	III Within 3 years					
	IV N/A					







## Appendix 6 Inspection Summary 2010 - 2014

	Total System Units	2010 Units Completed	2011 Units Completed	2012 Units Completed	2013 Units Completed	2014 Units Completed	2010 - 2014 Units Completed	2010 - 2014 Percent Completed
Distribution - Unique Inspections	820,049	168,098	173,214	177,732	0	0	519,044	63%
Distribution - Total Inspections	820,049	168,098	356,607	681,256	0	0	1,205,961	147%
Underground Facilities - Unique	49,758	11,488	6,706	6,691	0	0	24,885	50%
Underground Facilities - Total	49,758	11,488	6,706	6,691	0	0	24,885	50%
Street Light / Traffic Sig - Unique	5,412	1,970	848	1,191	0	0	4,009	74%
Street Light / Traffic Sig - Total	5,412	1,970	848	1,191	0	0	4,009	74%
Substations - Unique	519	519	0	0	0	0	519	100%
Substations - Total	519	519	519	519	0	0	1,557	300%
Transmission - Unique Inspections	76,841	20,143	13,869	13,299	0	0	47,311	62%
Transmission - Total Inspsctions	76,841	20,143	28,342	243,084	0	0	291,569	379%
<b>Grand Total - Unique Inspections</b>	<b>952,579</b>	<b>202,218</b>	<b>194,637</b>	<b>198,913</b>	<b>0</b>	<b>0</b>	<b>595,768</b>	<b>62.5%</b>

**Exhibit 1**

**CERTIFICATION**  
**[STRAY VOLTAGE TESTING]**

STATE OF NEW YORK            )  
  ) ss.:  
COUNTY OF Monroe         )

Mary Smith on this (11)<sup>th</sup> day of February 2013 certifies as follows:

1. I am the Vice President, Asset Management and Planning for New York State Electric & Gas (the “Company”), and in that capacity I make this Certification for the annual period ending December 31<sup>st</sup>, 2012 based on my knowledge of the testing program adopted by the Company in accordance the Public Service Commission’s Orders issued and effective January 5, July 21, 2005, and December 15, 2008 in Case 04-M-0159 and July 21, 2010 in Case 10-E-0271 (collectively the “Orders”), including the Quality Assurance Program filed by the Company with the Commission.
  
2. In accordance with the requirements of the Orders, the Company developed a program designed to test (i) all of the publicly accessible electric facilities owned by the Company (“Facilities”) and (ii) all streetlights located in public thoroughfares in the Company’s service territory (“Streetlights”), as identified through a good faith effort by

the Company, for stray voltage (the “Stray Voltage Testing Program”).

3. I am responsible for overseeing the Company’s Stray Voltage Testing Program and in that capacity I have monitored the Company’s Stray Voltage Testing Program during the twelve months ended December 31<sup>st</sup>, 2012 (the “Twelve-Month Period”).
4. I hereby certify that, to the best of my knowledge, information and belief, the Company has implemented and completed its Stray Voltage Testing program for the Twelve Month Period. Except for untested structures that are identified as temporarily inaccessible in the Company’s Annual Report, submitted herewith, the Company is unaware of any Facilities or Streetlights that were not tested during the Twelve-Month Period.
5. I make this certification subject to the condition and acknowledgment that it is reasonably possible that, notwithstanding the Company’s good faith implementation and completion of the Stray Voltage Testing Program, there may be Facilities and Streetlights that, inadvertently, may not have been tested or were not discovered or known after reasonable review of Company records and reasonable visual inspection of the areas of the service territory where Facilities

and Streetlights were known to exist or reasonably expected  
to be found.



Sworn to before me this <sup>11<sup>th</sup></sup><xx> day of February, 2013

Notary Public:



**ANNA M. SABERS**  
Notary Public, State of New York  
No. 01SA6072590  
Qualified in Monroe County  
Commission Expires April 08, 20 14

**CERTIFICATION**  
**[FACILITY INSPECTIONS]**

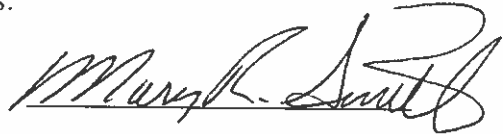
STATE OF NEW YORK                    )  
  ) ss.:  
COUNTY OF Monroe                 )

Mary Smith, on this 15th day of February 2013, certifies as follows:

1. I am the Vice President, Asset Management and Planning for New York State Electric & Gas (the “Company”), and in that capacity I make this Certification for the annual period ending December 31<sup>st</sup>, 2012 based on my knowledge of the inspection program adopted by the Company in accordance the Public Service Commission’s Orders issued and effective January 5, July 21, 2005, and December 15, 2008 in Case 04-M-0159 and July 21, 2010 in Case 10-E-0271 (collectively the “Orders”), including the Quality Assurance Program filed by the Company with the Commission.
2. The Company has an inspection program that is designed to inspect all of its electric facilities on a five-year inspection cycle, as identified through a good faith effort by the Company (“Facilities”), in accordance with the requirements of the Orders (the “Facility Inspection Program”).
3. I am responsible for overseeing the Company’s Facility Inspection Program and in that capacity I have monitored the

program during the twelve months ended December 31<sup>st</sup>,  
2012 (the "Twelve-Month Period").

4. I hereby certify that, to the best of my knowledge,  
information and belief, the Company has implemented and  
completed its Facility Inspection Program to inspect  
approximately 20 % of its Facilities during calendar year  
2012, in order to comply with the five-year inspection cycle  
required under the Orders.



Sworn to before me this 15 day of February, 2013

Notary Public:



**ANNA M. SABERS**  
Notary Public, State of New York  
No. 01SA6072590  
Qualified in Monroe County  
Commission Expires April 08, 20 14



## Rochester Gas and Electric Corporation

# STRAY VOLTAGE TEST AND FACILITY INSPECTION PROGRAM

Report on the results of Stray Voltage Tests and  
Facility Inspections for the 12-month period ending  
on December 31, 2012



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## **I. Background**

The New York State Public Service Commission's ("PSC" or "Commission") Electric Safety Standards Order issued on January 5, 2005 (Case 04-M-0159), with subsequent revisions issued on July 21, 2005, December 15, 2008, and July 21, 2010 (Case 10-E-0271), (collectively referred to herein as the "Safety Standards" or "Order"), require electric utilities in New York State, including Rochester Gas and Electric ("RG&E" or the "Company") to test annually all of their publicly accessible transmission and distribution facilities for stray voltage and to inspect their electric facilities every five years.

This report describes Rochester Gas and Electric Stray Voltage Detection Program and Equipment Inspection Program conducted in 2012.

## **II. Company Overview**

RG&E is located in upstate New York and serves approximately 355,324 electric customers. RG&E covers an area of about 2,700 square miles and serves a primarily rural area composed of 1 large city and 80 villages.

RG&E's electric delivery infrastructure consists of 170 substations, approximately 43,214 underground facilities and 513 streetlight/traffic signal facilities. This system includes an estimated 211,298 distribution structures and 19,767 transmission structures.

## **III. Stray Voltage Testing Program**

During the period ending December 31, 2012, RG&E conducted stray voltage testing of all its publicly accessible transmission and distribution facilities that are capable of conducting electricity, and all Company and non-Company owned metallic streetlights and traffic signals. The Company also tested all publicly accessible third party facilities in close proximity to RG&E's system components identified with elevated voltage.

In addition, and in compliance with the Order, RG&E:

- a. Immediately safeguarded and/or mitigated all voltage findings  $\geq 1.0$  volt. In instances where the stray voltage finding was determined to be caused by customer-owned equipment, the area was immediately made safe and the customer or responsible party associated with the premises was notified of the unsafe condition and the need for the customer to arrange for a permanent repair. Voltage findings determined to be caused by a utility-owned facility were immediately safeguarded and/or mitigated. All permanent repairs were made within 45 days.
- b. Tested all publicly accessible structures and sidewalks within a 30 foot radius of the electric facility or streetlight where there was a stray voltage finding  $\geq 1.0$  volt.

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

Of the 298,538 facilities visited, 81,571 did not require stray voltage testing because these are wood poles that have no attached appurtenances capable of conducting electricity; their electrically conductive appurtenances are not accessible to the public (pre-wired wood); the facilities are enclosed in fiberglass (non-conductive materials); and/or de-energized facilities.

#### Structures Inaccessible to the Public

There are several types of Inaccessible structures as described below. Of the 298,538 facilities visited, 453 were deemed Inaccessible to the public. If the contractor could not reach the structure to perform a test, it was identified as “Inaccessible” and all other pertinent data was collected in the field. Contractors made every attempt to locate and test all structures. Inaccessible structures include:

- a. Private Property – The structure was not tested if it was located on private property and was inaccessible due to walls, fences or barriers such as a locked gate, if excavation or bush/tree removal was required, or if there was unauthorized construction around the structure.
- b. RG&E Property – Structure located on Company property, such as substations, are accessible only to Company personnel and authorized contractors.
- c. Buried / Paved Over – The structure was not tested if it had been covered over with dirt, pavement, or other foreign objects that would prohibit public access and prevent testing the structure. Contractors noted the structure ID on the issued maps and turned them in to Maintenance Engineering for verification with the Maps and Records Department. If Maps and Records confirmed that the structure does exist, company and contractor crews followed up and attempted to locate, uncover, and test the structure. If the structure could not be found, it was then considered removed from the field, and revisions to mapping were generated.
- d. Inside Building – If a tester identified a structure as being inside a building, RG&E personnel verified that the structure was actually inside the building. If the RG&E personnel verified that the structure was accessible to the public, a test was performed. Typically, customer owned equipment that is inside a building is in a locked equipment room that is accessible to authorized personnel only.
- e. Limited Access Highways – Structures located on highways, exit and entrance highway ramps. The performance of stray voltage testing would constitute an unacceptable risk to the employee.
- f. Dangerous Terrain – Poles located on cliffs and other dangerous terrain are generally inaccessible to Company personnel and are approached only under urgent circumstances. The performance of stray voltage testing would constitute an unacceptable risk to the employee.

#### **IV. Facility Inspection Program**

The Safety Standards require RG&E to visually inspect approximately 20% of its facilities annually, resulting in 100% inspection of its electric facilities every five years.

The objective of all inspections is to conduct a careful and critical examination of an electric facility by a qualified individual to determine the condition of the facility and the potential to cause, or lead to safety hazards, or adverse effects on reliability.

Inspections conducted during routine maintenance and other work not directly related to the inspection program 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 the Electric Safety Standards.

In accordance with the Safety Standards, RG&E 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.

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 shall be used for future monitoring purposes and planning proactive maintenance activities.

In accordance with the PSC requirements, 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. Temporary repairs that remain on the system for more than 90 days are due to extraordinary circumstances, i.e. storms, and require extensive repair activity. The Company puts forth best efforts to conduct permanent repairs in the field, and only construct a temporary repair if/when absolutely necessary. For cycle year 2012, RG&E has no temporary repair exceptions to report.

## V. Company Facilities

### Structure Categories

RG&E has approximately 216,514 individual facilities that require testing for the presence of stray voltage. These facilities are broken down into four main categories including:

Distribution Overhead – There are approximately 131,540 distribution pole structures that require testing for the presence of stray voltage in RG&E’s territory. The testing criteria include all utility-owned or joint use wooden poles with utility electrical facilities located on both public thoroughfares and customer property, including backyards or alleys. Stray 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. Distribution overhead facilities are included in both the stray voltage and inspection programs.

Underground Facilities – There are 44,378 underground facilities that require testing for the presence of stray voltage that comprise RG&E’s system. The testing criteria are comprised of subsurface structures, including above ground pad-mounted structures. Included in the underground facilities are padmount switchgear cases, padmount transformer cases, electric utility manhole covers, submersible transformer covers, electric utility handhole covers, network vaults and grates. These facilities are included in both the stray voltage and facility inspection programs.

Street lights and Traffic Signals – There are approximately 11,875 metallic street lights and approximately 11,581 traffic signals within RG&E’s service territory that require stray voltage testing. This total includes all conductive street lights owned by RG&E with the balance of the equipment owned by various municipalities. The testing criterion includes all metallic streetlights, traffic signals, and pedestrian crosswalk signals located on publicly accessible thoroughfares. All stray voltage testing of street lights is performed at night while the fixtures are energized. Area and street lighting that is privately owned is not included in the stray voltage testing program, as per the Order’s requirements. All Company-owned streetlights are included in the facility inspection program.

Transmission Structures – There are 16,971 individual poles/towers that require testing for the presence of stray voltage that comprise RG&E’s transmission system. The testing criteria are comprised of all structures, guys, and down leads attached to the structures. Transmission structures support circuit voltages of 34.5 kilovolts and greater. Transmission poles as described above, with distribution under-build, are included in this transmission category. All transmission structures are included in both the stray voltage and facility inspection programs.

Substations – There are a total of 170 substation fences in RG&E’s territory that require annual testing for the presence of stray voltage.

**VI. Annual Performance Targets**

RG&E performed the required stray voltage testing and facilities inspections in accordance with the requirements set forth in the Order.

In compliance with the Safety Standards, RG&E has met the annual performance target for stray voltage testing of 100% of electric facilities and streetlights for the period ending December 31, 2012.

In addition, in compliance with the Safety Standards, RG&E has met the third year annual performance target for inspection of 20% of its electric facilities and the cumulative inspection target of 60% of its facilities for the period ending December 31, 2012.

The results are summarized in the table below.

*Facility Inspection Program Results*

<b>Category</b>	<b>RG&amp;E Inspection Target</b>	<b>Actual Cumulative Inspected as of 2012</b>
Overhead Distribution	60%	62%
Overhead Transmission	60%	57%
Underground	60%	65%
Streetlight	60%	100%

## 5-Year Inspection Performance Summary

### Overhead Distribution Facilities

Inspection Year	Number of Overhead Distribution Structures Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	39,325	19%
2011	46,760	41%
2012	46,061	62%
2013		
2014		

### Overhead Transmission Facilities

Inspection Year	Number of Overhead Transmission Facilities Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	6,570	33%
2011	2,804	47%
2012	1,927	57%
2013		
2014		

### Underground Facilities

Inspection Year	Number of Underground Facilities Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	4,227	18%
2011	6,175	44%
2012	4,691	63%
2013		
2014		

### Pad-mount Facilities

Inspection Year	Number of Underground Facilities Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	3,760	19%
2011	4,658	43%
2012	4,688	68%
2013		
2014		

Streetlights

Inspection Year	Number of Streetlights Inspected	% of Overall System Inspected (Cumulative in Five Year Cycle 2010-2014)
2010	1,347	21%
2011	0*	100%
2012	0*	100%
2013		
2014		

\* In 2010 RG&E sold all its city streetlights to the City of Rochester and retains ownership of 513 streetlights outside city boundaries; inspections due next in 2015.

**VII. Certifications**

Pursuant to Section 7 of Appendix A of the Safety Standards, the president or officer of each utility with direct responsibility for overseeing stray voltage testing and facility inspections shall provide an annual certification to the Commission that the utility has, to the best of his or her knowledge, exercised due diligence in carrying out a plan, including quality assurance, that is designed to meet the stray voltage testing and inspection requirements, and that the utility has:

- Tested all of its publicly accessible electric facilities and street lights, as referred to in the body of the February 15 Report, and
- Inspected the requisite number of electric facilities.

The certifications are attached as Exhibit 1 of this report.

**VIII. Analysis of Causes of Findings and Stray Voltage**

All New York State utilities perform an inventory on all findings and report on the number of these findings each year. Section 1(f) of the December 15, 2008 Order 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 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.” A Summary of Energized Objects for the manual program can be found in Appendix 2 of this report.

Generally, there are two types of reported findings; a confirmed voltage reading greater than or equal to 1 volt measured using a volt meter and 500 ohm shunt resistor which is the result of an abnormal power system condition, and a confirmed voltage reading greater than or equal to 1 volt measured using a volt meter and 500 ohm shunt resistor which results from the normal delivery and/or use of electricity. Utilities are required to



report on all findings, regardless of whether or not the voltage is abnormal or normal to operating conditions. The detection rate for all findings in 2012 as shown in Appendix 1 is .056%. Inclusion of these normal occurring voltages in the total findings can result in the perception that there are more potentially hazardous voltage findings than actually exist. Upon excluding these normal occurring voltages illustrates a detection rate of .013% which more accurately represents confirmed abnormalities across our total system.

Causes of these findings include, but are not limited to, naturally occurring neutral to earth voltages (as part of a multi-grounded WYE power system); poor soil grounding conditions; load imbalance between phases; long low voltage single phase circuit spurs with high current loads; and/or proximity to transmission lines. Attempts to mitigate these conditions include a high cost, and there is no guarantee of resolution.

True hazardous voltages have been identified and mitigated through the stray voltage testing program. These voltages resulted from a variety of conditions including: deterioration of conductors; age of equipment; exposure to the elements; and various customer related issues. Through the efforts of the stray voltage testing program, RG&E has been able to repair these issues and mitigate the danger associated with the elevated voltage.

Some distinction needs to be made between these two classes of findings: findings due to potentially hazardous Stray Voltage, and findings normal to the operating system.

The following table contains a breakdown of the causes of Stray Voltage findings identified through the 2012 manual testing effort:

<i>Structure Type</i>	<i>Cause of Stray Voltage</i>	<i>Stray Voltages Found</i>
Streetlights	Defective Neutral Connection – Light Pole	1
Streetlights	Owned by Other Municipality	4
Streetlights	Defective Neutral – Traffic Signal Pole	2
Streetlights	Defective Neutral – Underground Cable	1
Distribution	Guy Wire	3
Distribution	Grounds and Ground Rods	10
Distribution	Customer Owned Equipment	1
		<b>22</b>

In accordance with the PSC requirements; when a finding is discovered on an electric facility or streetlight during stray voltage testing, the Company is obligated to perform stray voltage testing on all publicly accessible structures and sidewalks within a minimum 30 foot radius of the electric facility or streetlight. In this year's testing cycle 22 findings due to potentially hazardous stray voltages were found. A total of 2 additional objects were tested as a result of testing within a 30 foot radius. Of the 2 objects tested, one was a riser on a distribution pole on a circuit currently under re-design to be rebuilt, and the other was a guy wire on a transmission pole and was deemed to be caused by induction and does not pose a danger to public safety.

**IX. Analysis of Inspection Results**

*Overhead Distribution Structures*

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
46,061	3,951	8.58%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	16	.41%
2	190	4.81%
3	1,064	26.88%
4	2,681	67.68%
Total:	3,951	100%

*Overhead Transmission Facilities*

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
1,927	185	9.60%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	0	0%
2	15	8.11%
3	71	38.38%
4	99	53.51%
Total:	185	100%

Underground Facilities

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
4,568	115	2.52%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	3	2.61%
2	74	64.35%
3	32	26.96%
4	6	5.22%
Total:	115	100%

Pad-mounts

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
4,691	375	8.00%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	6	1.60%
2	21	5.60%
3	173	46.13%
4	175	46.67%
Total:	375	100%

Streetlights

*Table of Locations with Deficiencies*

Locations Inspected	Locations w/ Deficiencies	% Locations w/ Deficiencies
0	0	0%

*Breakdown of Locations with Deficiencies*

Priority Rating	Number of Deficiencies	% Deficiencies Found
1	0	0%
2	0	0%
3	0	0%
4	0	0%
Total:	0	0%

In 2012, a total of 4,626 deficiencies were identified through scheduled inspections which represent a deficiency rate of about 8.09% of the total unique inspections performed.

New this year, RG&E outsourced the inspection effort after previously utilizing internal resources, and instituted a new inspection protocol. Overhead Distribution and Underground inspections were performed using a Distribution Line Inspection (“DLI”) Toughbook. The DLI Toughbooks are portable laptop computers with pre-loaded software that displays all assets to be inspected and includes pre-formatted inspection pick tables the inspectors will use to document individual inspections. The DLI Toughbook has built-in GPS equipment that displays its real-time position in relation to any company asset. Inspectors are required to document all inspections on the DLI Toughbook, and the data is uploaded into the Company work management system.

Each and every year since the commencement of the Safety Standards Order in 2005, RG&E has continually made improvements toward the administration of the Facility Inspection program. The results of these improvements have provided some additional benefits to the company.

The collection and management of data was centralized into a single program group to provide an effective way to communicate inspection progress and issues to and from field operations and inspectors. The asset data received has enhanced the quality of information we had in place identifying in more detail specific structure attributes giving us the ability to document accurate GPS locations in the field. Common training efforts were conducted among all field personnel through the centralized program group resulting in uniform standardized reporting of field conditions.

Other groups within the company have also capitalized on this information to assist them in their particular needs. Asset Management groups have used inspection information to assist them in trending analysis and preparation of targeted maintenance efforts such as pole treatment and replacement projects, and other equipment issues. Vegetation Management groups routinely use inspection information to look for potential trouble spots where out of cycle trimming may be necessary.

## **X. Stray Voltage Testing and Inspection QA/QC Programs**

### **Stray Voltage Testing QA/QC Program**

Throughout the stray voltage testing effort, the testing contractor submits their testing data to NYSEG in the form of batch files. These batch files are submitted for multiple QA/QC reviews. The first review that takes place is for data accuracy. Batch files are scanned to ensure formatting and proper data is populated in each of the required fields. If approved, the file is loaded into the production database and a copy forwarded to the Global Positioning System (GPS) QA/QC Team for the second review to check the data for positional accuracy and content. If the data is not acceptable, the contractor is notified

of such and the reasons for failure. The testing contractor remedies the problems and re-submits the file with corrections.

Following vendor batch file approval through the program administrator, the GPS QA/QC team loads the batch file into NYSEG/RGE GIS database, SDE. The QA/QC team uses the GIS application Arc Map to evaluate and certify the testing results. The data, GPS location, test results and time stamp are recorded at each structure on Trimble GeoXt handheld devices with sub-meter GPS capability during the field testing effort. This collection method has been extensively used and successfully tested by NYSEG/RGE as an effective means of monitoring progress and ensuring the stray voltage testing contractor is acquiring all test points and delivering complete and accurate results. Additionally, the GPS QA/QC team employs the use of high level satellite ortho photography to verify positional accuracy.

The methodologies deployed to conduct the QA/QC evaluation are as follows:

- Upon data load into SDE, the level of digitized data points is checked and recorded to insure that the number of points does not exceed the expected level based on satellite position, interference (i.e. buildings, vegetation) and equipment capabilities. This level is generally < 1%. Also, at this time a gross high level check is made looking for gross geographical errors that would indicate a batch file processing error by the vendor. If either of these conditions is not acceptable the “batch” is rejected.
- Following the initial checks above, the batch data is overlaid on top of the previous years’ data in Arc Map. All data is 100% evaluated against the prior testing effort plus some additional safeguards to be covered later. These methods have proven to be very effective in ensuring that all structures have been tested. The overall management of the process is through a grid system on which the field testing maps are based. As data accumulates throughout the year the grids are attributed to reflect their completeness based on structure type, i.e. Streetlights OK = Yes and so on.
- The next aspect of QA/QC effort is final certification by division. When we are notified by the vendor that a division is complete and all data has been submitted we initiate a final audit of the division. This is a final review of any missed structures and any new structures not tested. Any structures deemed “missed” are extracted into a shape-file (GIS database) and fed back to the vendor for follow up testing, thus completing a continuous feedback loop year to year to cover missed structures. At this time the QA/QC team does a high level grid check to make sure no map sheets were omitted.
- The additional safeguards mentioned above are as follows:
  - Duplicate testing of structures: The analysts are prompted to be aware of and flag any evidence of massive duplicate testing.
  - GPS time stamp anomalies: Analysts are aware to look for suspicious time intervals between structures, particularly on heavily digitized areas (i.e. 3 seconds between poles 300’ apart).

The QC team does a periodic review of the Stray Voltage data vs. The Corporate electrical distribution asset system called Smart-map. This evaluation allows us to

identify any new or previously missed structures which are extracted and sent back to the vendor for testing.

#### Random Quality Assurance

On an ongoing basis, RG&E performs many quality assurance measures to ensure testing data accuracy. These include, but are not limited to; investigations into inaccessible structures to determine the nature of inaccessibility, performance of individual testers, miscellaneous anomalies found in testing data, and checking circuit maps to ensure all structures have been visited. Problem testers are identified to the testing contractor and, if need be, removed from the testing effort. If needed, problem areas are retested in order to ensure testing accuracy. Any discrepancies found as a result of random data sampling checks like wrong town or street name and incorrect spellings are then corrected.

In addition to these measures, Field Coordinators conduct random field visits to ascertain that field contractors are performing tests on all required structures. During these visits, the Field Coordinator will observe testers performing their work to ensure they're doing it correctly and answer any questions about map reading, structure IDs, and location of structures. The Field Coordinator also performs follow up on randomly chosen completed maps to check that all structures are tested and recorded properly.

#### Inspection QA/QC Program

NYSEG's inspection program is administered through the Inspection Tracking System (ITS) Group. The ITS Group monitors all company assets in a central database to ensure all planned inspections for the current year are performed.

The ITS Group randomly selects a sample set of reported repaired deficiencies throughout each division. This sample set contains all information regarding the deficiency including the cause and the reported repair effort and is given to the QA/QC Coordinators to be field evaluated. RG&E performs field verifications in each of its four divisions to assess the reported results from inspectors. QA/QC Coordinators visit the specific asset and validate whether the reported repair work has been made. Independent results of the verification effort are compared to the original reporting to assess effectiveness.

In addition, the ITS Group develops a random sample of assets from each of the circuits inspected in the current year. Administered by a third party of QA/QC Coordinators who are qualified to perform utility inspections, they are deployed to perform independent field inspections on these random assets. Results of their findings are compared with results submitted by the field inspectors to assess effectiveness.

**XI. Other Pertinent Information**

RG&E Mobile Detection Program

Pursuant to the Public Service Commission’s *Order Requiring Additional Mobile Stray Voltage Testing* (“Order”), Case 10-E-0271- In the Matter of Examining the Mobile Testing Requirements of the Electric Safety Standards, issued and effective July 21, 2010; Rochester Gas and Electric (“RG&E”) performed 1 Mobile system scan in the City of Rochester between January 1, 2012 and December 31, 2012. RG&E contracted with Premier Utility Service, LLC (“Premier”), 100 Marcus Blvd, Suite 3, Hauppauge, NY to perform mobile stray voltage testing on all identified Rochester City streets for 2012.

Mobile Testing Procedure

Premier scanned city streets using the NARDA 8950/10 mobile contact voltage detector system and upon detecting an energized object stopped the vehicle to investigate, identify, measure, and properly document the finding in accordance to RG&E’s Stray Voltage Mobile Test Procedure.

In addition to the mobile detection services and technicians provided by Premier, RG&E provided a full time Field Coordinator who followed along independently collecting GPS coordinates of the nightly routes traveled. The GPS data was acquired to provide positional attributes to structures with detected voltages and to ensure all structures and streets reported by Premier were complete. The Field Coordinator collected data on all hot structures including all false positives, ensured all documented voltage reads were accurate, and all energized objects found to be energized at 4.5 volts or greater were immediately made safe and turned over to the appropriate owner for repair. The City of Rochester provided full time support from one electrician to immediately isolate and make safe all energized objects reading 4.5 volts or greater with a 500 ohm shunt resistor.

Mobile Testing Results

The mobile scan of the City of Rochester included approximately 27,102 testable structures. In total, Premier scanned approximately 495 street miles and the results for this effort are as follows:

<b>2012 Mobile Testing Summary of Events</b>		
Total Number of Events	113	
Below 4.5 Volts	108	95.6%
Greater or Equal to 4.5 And Less Than 25 Volts	4	3.5%
Greater or Equal to 25 And Less Than 100 Volts	1	0.9%
Greater or Equal to 100 Volts	0	0.0%

The table below categorizes all the low voltage findings into smaller voltage classes to illustrate the specific findings.

<b>Breakdown Of Voltages Below 4.5 Volts</b>		
Total Number of Events < 4.5 volts	108	
Less Than 1 Volt	91	84.3%
1-1.9 volts	15	13.9%
2-2.9 volts	1	0.9%
3-4.4 volts	1	0.9%


### Analysis

Final results of the mobile scan confirmed 113 energized objects with over 95% reading below 4.5 volts. Further analysis of findings with voltages less than 4.5 volts revealed over 84% sustaining voltages of less than 1 volt with a 500 ohm shunt resistor. All stray voltage findings greater or equal to 1 volt were immediately safeguarded and all finding greater or equal to 4.5 volts were immediately made safe to the public and turned over to the appropriate owner to execute permanent repair. All energized objects greater or equal to 1 volt have been turned over to the City of Rochester, the current owner of all Streetlights for further investigation and to conduct permanent repairs. A summary of energized objects can be found in Appendix A. There were a total of 15 objects tested as a result of having to test within a 30 foot radius of an energized object, and all objects measured 0 volts.

A summary of energized object for the mobile detection program can be found in Appendix 2(a).



## Appendix 1 Stray Voltage Testing Summary

	Total System Units	Units Completed	Percent Completed	Units with Voltage Found (>= 1.0v)	Percent of Units Tested with Voltage (>= 1.0v )	Units Classified as Inaccessible
Distribution Facilities	211,317	211,317	100%	40	0.019%	206
Underground Facilities	44,503	44,503	100%	0	0%	114
Street Lights / Traffic Signals	23,458	23,458	100%	8	0.034%	1
Substation Fences	170	170	100%	0	0%	0
Overhead Transmission	19,090	19,090	100%	120	0.629%	132
Underground Transmission	0					
<b>TOTAL</b>	298,538	298,538	100%	168	0.056%	453

## Appendix 2 Summary of Energized Objects (Manual Program)




	Initial Readings				Readings after Mitigation		
	1-4.4V	4.5-24.9V	>25V	Totals	< 1V	1-4.4V	>4.5V
<b>Distribution Facilities</b>	39	1	0	<b>40</b>	14	9	0
Pole				0			
Ground	14			14	2	5	
Guy	22			22	10	3	
Riser	1	1		2	1		
Other	2			2	1	1	
<b>Underground Facilities</b>	0	0	0	<b>0</b>	0	0	0
Manhole/ Pull box				0			
Manhole				0			
Padmount Switchgear				0			
Padmount Transformer				0			
Vault-Cover/Door				0			
Pedestal				0			
Other				0			
<b>Street Lights/Traffic Signals</b>	2	3	3	<b>8</b>	4	0	0
Metal Street Light Pole	2	3	3	8	4		
Traffic Signal Pole				0			
Pedestrian Crossing Pole				0			
Traffic Control Box				0			
Other				0			
<b>Substation Fences</b>	0	0	0	<b>0</b>	0	0	0
Fence				0			
Other				0			
<b>Transmission (Total)</b>	100	20	0	<b>120</b>	1	0	0
Lattice Tower				0			
Pole				0			
Ground	89	13		102	1		
Guy	11	7		18			
Other				0			
<b>Miscellaneous Facilities</b>	0	0	0	<b>2</b>	0	0	0
Sidewalk				0			
Gate/Fence/Awning				0			
Control Box				0			
Scaffolding				0			
Bus Shelter				0			
Fire Hydrant				0			
Phone Booth				0			
Water Pipe				0			
Riser	1			1			
Other		1		1			

## Appendix 2(a) Summary of Energized Objects (Mobile Program)

	Initial Readings				Readings after Mitigation		
	1- 4.4V	4.5- 24.9V	>25V	Totals	< 1V	1- 4.4V	>4.5V
<b>Distribution Facilities</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Pole				0			
Ground				0			
Guy				0			
Riser				0			
Other				0			
<b>Underground Facilities</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Service Box				0			
Manhole				0			
Padmount Switchgear				0			
Padmount Transformer				0			
Vault-Cover/Door				0			
Pedestal				0			
Other				0			
<b>Street Lights/Traffic Signals</b>	<b>17</b>	<b>4</b>	<b>1</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>
Metal Street Light Pole	15	4	1	20			
Traffic Signal Pole				0			
Pedestrian Crossing Pole				0			
Traffic Control Box	2			2			
Other				0			
<b>Substation Fences</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Fence				0			
Other				0			
<b>Transmission (Total)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Lattice Tower				0			
Pole				0			
Ground				0			
Guy				0			
Other				0			
<b>Miscellaneous Facilities</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Sidewalk				0			
Gate/Fence/Awning				0			
Control Box				0			
Scaffolding				0			
Bus Shelter				0			
Fire Hydrant				0			
Phone Booth				0			
Water Pipe (Cap)				0			
Riser				0			
Other				0			

### Appendix 3 Summary of Shock Reports from the Public

 Data collected as of December 31, 2012	Quarterly Update	Yearly Total
<b>I. Total Shock Calls Received:</b>	<b>3</b>	<b>13</b>
Unsubstantiated	3	5
Normally Energized Equipment	0	5
<b>Stray Voltage:</b>	<b>0</b>	<b>3</b>
Person	0	3
Animal	0	0
<b>II. Injuries Sustained/Medical Attention Received:</b>	<b>0</b>	<b>6</b>
Person	0	6
Animal	0	0
<b>III. Voltage Source:</b>	<b>0</b>	<b>3</b>
<b>Utility Responsibility</b>		
Issue with primary, joint, or transformer		
Secondary joint (Crab)		
SL service Line		
Abandoned SL service line		
Defective service line		
Abandoned service line		
OH Secondary		
OH Service		
OH Service neutral		
Pole		
Riser		
Other		2
<b>Customer Responsibility</b>		
Contractor damage		
Customer equipment/wiring		1
<b>Other Utility/Gov't Agency Responsibility</b>		
SL Base Connection		
SL Internal wiring or light fixture		
Overhead equipment		
<b>IV. Voltage Range:</b>	<b>0</b>	<b>3</b>
1.0V to 4.4V		
4.5V to 24.9V		
25V and above		
No Reading		3



## Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Distribution

Overhead Facilities	2009			2010			2011			2012			2013		
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
<b>Poles</b>															
<b>Pole Condition</b>															
Number of Deficiencies	-	16	44	-	5	9	0	8	11	1	5	18			
Repaired in Time Frame		15	39		5	9		8	11	1	4	9			
Repaired - Overdue		1	4												
Not Repaired - Not Due											1	9			
Not Repaired - Overdue			1												
<b>Grounding System</b>															
Number of Deficiencies	-	9	37	-	5	4	0	3	4	0	39	311			
Repaired in Time Frame		9	37		4	3		3	4		36	93			
Repaired - Overdue					1										
Not Repaired - Not Due						1					3	218			
Not Repaired - Overdue															
<b>Anchors/Guy Wire</b>															
Number of Deficiencies	-	6	15	-	4	13	0	18	9	1	4	200			
Repaired in Time Frame		6	14		3	12		18	9	1	2	122			
Repaired - Overdue			1		1										
Not Repaired - Not Due						1					2	78			
Not Repaired - Overdue															
<b>Riser</b>															
Number of Deficiencies	-	-	-	-	-	1	0	1	0	0	2	17			
Repaired in Time Frame						1					1	5			
Repaired - Overdue								1							
Not Repaired - Not Due											1	12			
Not Repaired - Overdue															
<b>Cross Arm/Bracing</b>															
Number of Deficiencies	-	8	38	-	13	12	3	17	8	0	0	27			
Repaired in Time Frame		8	37		9	12	2	17	8			9			
Repaired - Overdue			1		4		1								
Not Repaired - Not Due												18			
Not Repaired - Overdue															
<b>Conductors</b>															
<b>Primary Wire/Broken Ties</b>															
Number of Deficiencies	11	228	143	1	77	68	6	98	46	7	57	313			
Repaired in Time Frame	10	219	143	1	73	67	6	95	39	7	48	65			
Repaired - Overdue	1	9			4			3							
Not Repaired - Not Due						1			7		9	248			
Not Repaired - Overdue															
<b>Neutral</b>															
Number of Deficiencies	52	3	4	8	2	1	24	1	0	0	19	59			
Repaired in Time Frame	50	3	4	8	2	1	24	1			18	25			
Repaired - Overdue	2														
Not Repaired - Not Due											1	34			
Not Repaired - Overdue															
<b>Insulators</b>															
Number of Deficiencies	1	3	4	-	12	2	2	26	10	1	40	49			
Repaired in Time Frame	1	3	4		12	2	2	25	10	1	27	33			
Repaired - Overdue								1							
Not Repaired - Not Due											13	16			
Not Repaired - Overdue															



## Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Distribution

Overhead Facilities	2009			2010			2011			2012			2013		
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
<b>Pole Equipment</b>															
<b>Transformers</b>															
<i>Number of Deficiencies</i>	-	5	2	-	1	-	0	1	1	0	17	47			
Repaired in Time Frame		5	2		1			1	1		16	39			
Repaired - Overdue															
Not Repaired - Not Due											1	8			
Not Repaired - Overdue															
<b>Cutouts</b>															
<i>Number of Deficiencies</i>	1	19	6	2	15	3	0	2	2	0	1	5			
Repaired in Time Frame	1	19	6	2	15	3		2	1		1	4			
Repaired - Overdue															
Not Repaired - Not Due									1			1			
Not Repaired - Overdue															
<b>Lightning Arrestors</b>															
<i>Number of Deficiencies</i>	-	5	24	-	7	3	0	10	7	0	6	5			
Repaired in Time Frame		5	23		7	3		10	6		5	1			
Repaired - Overdue			1												
Not Repaired - Not Due									1		1	4			
Not Repaired - Overdue															
<b>Skypin/Skypin Bolt</b>															
<i>Number of Deficiencies</i>	1	10	5	-	7	3	0	2	2	0	0	0			
Repaired in Time Frame	1	10	5		7	3		2	2						
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
<b>Miscellaneous</b>															
<b>Trimming Related</b>															
<i>Number of Deficiencies</i>	1	22	52	4	24	3	0	0	0	5	0	1			
Repaired in Time Frame	1	22	52	3	23	3				4		1			
Repaired - Overdue				1	1					1					
Not Repaired - Not Due															
Not Repaired - Overdue															
<b>Other</b>															
<i>Number of Deficiencies</i>	1	33	64	6	51	30	2	14	6	1	0	12			
Repaired in Time Frame	1	33	64	6	48	30	1	11	6	1		5			
Repaired - Overdue					3		1								
Not Repaired - Not Due															7
Not Repaired - Overdue								3							
<b>Overhead Facilities Total</b>															
<b>Total</b>															
<i>Number of Deficiencies</i>	68	367	438	21	223	152	37	201	106	16	190	1,064			
Repaired in Time Frame	65	357	430	20	209	149	35	193	97	15	158	411			
Repaired - Overdue	3	10	7	1	14	-	2	5	-	1	-	-			
Not Repaired - Not Due	-	-	-	-	-	3	-	-	9	-	32	653			
Not Repaired - Overdue	-	-	1	-	-	-	-	3	-	-	-	-			





**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Transmission**

Transmission Facilities	2009			2010			2011			2012			2013			
	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	
<b>Miscellaneous</b>																
<b>Right of Way Condition</b>																
Number of Deficiencies	-	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame		64														
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																
<b>Other</b>																
Number of Deficiencies	-	304	76	-	5	19	-	3	2	-	-	3				
Repaired in Time Frame		303	69		5	6		3	2							
Repaired - Overdue		1	2													
Not Repaired - Not Due						13								3		
Not Repaired - Overdue			5													
<b>Transmission Facilities Total</b>																
<b>Total</b>																
Number of Deficiencies	-	441	196	-	7	65	-	32	45	-	15	71				
Repaired in Time Frame	-	437	184	-	7	43	-	32	42	-	1	1				
Repaired - Overdue	-	4	2	-	-	-	-	-	-	-	-	-				
Not Repaired - Not Due	-	-	-	-	-	22	-	-	3	-	14	70				
Not Repaired - Overdue	-	-	10	-	-	-	-	-	-	-	-	-				







**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Underground**

Underground Facilities	2009			2010			2011			2012			2013		
	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
Priority Level	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
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>Miscellaneous</b>															
<b>Other</b>															
Number of Deficiencies	-	-	-	-	1	7	1	8	3	1	11	6			
Repaired in Time Frame					1	4		4	1		1	4			
Repaired - Overdue							1	1							
Not Repaired - Not Due						3			2		10	2			
Not Repaired - Overdue								3		1					
<b>Underground Facilities Total</b>															
<b>Total</b>															
Number of Deficiencies	-	1	1	5	30	28	9	44	50	3	74	32			
Repaired in Time Frame	-	1	1	5	24	15	7	31	43	2	45	29			
Repaired - Overdue	-	-	-	-	5	-	2	3	-	-	-	-			
Not Repaired - Not Due	-	-	-	-	-	13	-	-	7	-	29	3			
Not Repaired - Overdue	-	-	-	-	1	-	-	10	-	1	-	-			



## Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Padmounts

Pad Mount Transformers	2009			2010			2011			2012			2013		
	Priority Level			Priority Level			Priority Level			Priority Level			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
<b>Pad Mount Transformers</b>															
<b>Damaged Structure</b>															
Number of Deficiencies	2	262	112	1	44	24	1	52	26	1	3	13			
Repaired in Time Frame	2	200	103		31	10		40	15	1	1	6			
Repaired - Overdue		62	7	1	13		1	9							
Not Repaired - Not Due						14			11		2	7			
Not Repaired - Overdue			2					3							
<b>Damaged Equipment</b>															
Number of Deficiencies	1	5	3	-	1	-	-	38	13	-	4	-			
Repaired in Time Frame		4	3		1			33	8						
Repaired - Overdue	1	1						3							
Not Repaired - Not Due									5		4				
Not Repaired - Overdue								2							
<b>Cable Condition</b>															
Number of Deficiencies	1	-	-	-	-	-	2	3	-	1	-	-			
Repaired in Time Frame															
Repaired - Overdue	1						2	1		1					
Not Repaired - Not Due															
Not Repaired - Overdue								2							
<b>Oil Leak</b>															
Number of Deficiencies	2	24	16	-	12	2	-	11	1	2	12	19			
Repaired in Time Frame	1	10	8		7			4		1	1	1			
Repaired - Overdue	1	14	4		4			6		1					
Not Repaired - Not Due						2			1		11	18			
Not Repaired - Overdue			4		1			1							
<b>Off Pad</b>															
Number of Deficiencies	-	24	11	-	4	9	-	-	-	1	-	1			
Repaired in Time Frame		14	10		3	6				1		1			
Repaired - Overdue		10	1		1										
Not Repaired - Not Due						3									
Not Repaired - Overdue															
<b>Lock/Latch/Penta</b>															
Number of Deficiencies	-	32	226	4	52	23	1	19	5	-	-	5			
Repaired in Time Frame		19	211	1	30	19	1	15	2			2			
Repaired - Overdue		13	11	3	22			4							
Not Repaired - Not Due						4			3			3			
Not Repaired - Overdue			4												
<b>Miscellaneous</b>															
<b>Other</b>															
Number of Deficiencies	2	64	393	-	68	54	-	6	7	1	2	135			
Repaired in Time Frame	2	10	345		38	45		6	4	1		96			
Repaired - Overdue		54	38		30										
Not Repaired - Not Due						9			3		2	39			
Not Repaired - Overdue			10												
<b>Pad Mount Total</b>															
<b>Total</b>															
Number of Deficiencies	8	411	761	5	181	112	4	129	52	6	21	173			
Repaired in Time Frame	5	257	680	1	110	80	1	98	29	4	2	106			
Repaired - Overdue	3	154	61	4	70	-	3	23	-	2	-	-			
Not Repaired - Not Due	-	-	-	-	-	32	-	-	23	-	19	67			
Not Repaired - Overdue	-	-	20	-	1	-	-	8	-	-	-	-			





## Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Level IV Conditions

Overhead Facilities	2009		2010		2011		2012		2013	
	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
<b>Overhead Facilities</b>										
<b>Pole Condition</b>										
Pole Condition			2		8		30			
Grounding System			24	5	2		8			
Anchors/Guy Wire			8		19		299	3		
Riser			2				11			
Cross Arm/Bracing					3		11			
<b>Conductors</b>										
Primary Wire/Broken Ties			2		4		59	1		
Neutral							11			
Insulators					1		37	4		
<b>Pole Equipment</b>										
Transformers							44			
Cutouts							59	1		
Lightning Arrestors							1			
Other Equipment					1					
<b>Miscellaneous</b>										
Trimming Related			34	1	129		328	3		
Other			3	1	6		1,783	20		
<b>Overhead Facilities Total</b>	0	0	75	7	173		2,681	32		
<b>Transmission Facilities</b>										
<b>Towers/Poles</b>										
Steel Towers										
Poles	222	4					4			
Anchors/Guy Wire	94	1					23			
Crossarm/Brace	108		2	2	1		2			
Grounding System	4						6			
<b>Conductors</b>										
Cable	3									
Static/Neutral			2	1	26					
Insulators	252		2	2	8					
<b>Miscellaneous</b>										
Right of Way Condition	78									
Other	426		3	1	15		64			
<b>Transmission Facilities Total</b>	1,187	5	9	6	50		99	0		



**Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Level IV Conditions**

Overhead Facilities	2009		2010		2011		2012		2013	
	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
<b>Underground Facilities</b>										
<b>Underground Structures</b>										
Damaged Cover			9		4					
Damaged Structure			31				3			
Congested Structure										
Damaged Equipment			10							
<b>Conductors</b>										
Primary Cable	1		12							
Secondary Cable			1							
Neutral Cable										
Racking Needed			8							
<b>Miscellaneous</b>										
Other			6	1			3			
<b>Underground Facilities Total</b>	<b>1</b>	<b>0</b>	<b>77</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>6</b>	<b>0</b>		
<b>Pad Mount Transformers</b>										
<b>Pad Mount Structures</b>										
Damaged Structure			168		2		38			
Damaged Equipment					1		5	1		
Damaged Cable										
Oil Leak							19			
Off Pad			1				1			
Lock/Latch/Penta	241	1	270	1			4	1		
<b>Miscellaneous</b>										
Other	4		145	2	62		108	6		
<b>Pad Mount Transformer Total</b>	<b>245</b>	<b>1</b>	<b>584</b>	<b>3</b>	<b>65</b>	<b>0</b>	<b>175</b>	<b>8</b>		
<b>Streetlights</b>										
<b>Streetlight</b>										
Base/Standard/Light										
Handhole/Service Box										
Service/Internal Wiring										
Access Cover										
<b>Miscellaneous</b>										
Other			8							
<b>Streetlight Total</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		
<b>Total Level IV Conditions</b>										
<b>Overall Total</b>	<b>1,433</b>	<b>6</b>	<b>753</b>	<b>17</b>	<b>292</b>	<b>0</b>	<b>2,961</b>	<b>40</b>		



## 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
<b>2009</b>	I	Within 1 week	76	70	6	0	0
	II	Within 1 year	1,220	1052	168	0	0
	III	Within 3 years	1,396	1,295	70	0	31
	IV	N/A	1,433	6	n/a	1,427	n/a
<b>2010</b>	I	Within 1 week	31	26	5	0	0
	II	Within 1 year	441	350	89	0	2
	III	Within 3 years	358	288	0	70	0
	IV	N/A	753	17	n/a	736	n/a
<b>2011</b>	I	Within 1 week	50	43	7	0	0
	II	Within 1 year	406	354	31	0	21
	III	Within 3 years	253	211	0	42	0
	IV	N/A	292	0	n/a	292	n/a
<b>2012</b>	I	Within 1 week	25	21	3	0	1
	II	Within 1 year	300	206	0	94	0
	III	Within 3 years	1,340	547	0	793	0
	IV	N/A	2,961	40	n/a	2,921	n/a
<b>2013</b>	I	Within 1 week					
	II	Within 1 year					
	III	Within 3 years					
	IV	N/A					







## Appendix 6 Inspection Summary 2010 - 2014

	Total System Units	2010 Units Completed	2011 Units Completed	2012 Units Completed	2013 Units Completed	2014 Units Completed	2010 - 2014 Units Completed	2010 - 2014 Percent Completed
Distribution - Unique Inspections	211,298	39,155	46,760	46,061	0	0	131,976	62%
Distribution - Total Inspections	211,298	39,155	239,770	191,019	0	0	469,944	222%
Underground Facilities - Unique	23,816	4,227	6,175	4,568	0	0	14,970	63%
Underground Facilities - Total	23,816	4,227	6,175	4,568	0	0	14,970	63%
URD - Unique Inspections	19,398	3,760	4,658	4,691	0	0	13,109	68%
URD -Total Inspections	19,398	3,760	4,658	4,691	0	0	13,109	68%
Street Light / Traffic Sig - Unique	513	513	0	0	0	0	513	100%
Street Light / Traffic Sig - Total	513	1,347	0	0	0	0	1,347	263%
Substations - Unique	170	170	0	0	0	0	170	100%
Substations - Total	170	170	170	170	0	0	510	300%
Transmission - Unique Inspections	19,767	6,570	2,804	1,927	0	0	11,301	57%
Transmission - Total Inspsctions	19,767	6,570	20,837	19,960	0	0	47,367	240%
<b>Grand Total - Unique Inspections</b>	<b>274,962</b>	<b>54,395</b>	<b>60,397</b>	<b>57,247</b>	<b>0</b>	<b>0</b>	<b>172,039</b>	<b>62.6%</b>

**Exhibit 1**

**CERTIFICATION**  
**[STRAY VOLTAGE TESTING]**

STATE OF NEW YORK                    )  
  ) ss.:  
COUNTY OF Monroe                 )

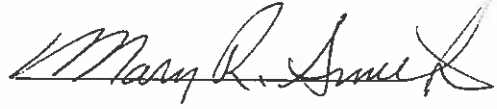
Mary Smith on this ( 11 )<sup>th</sup> day of February 2013 certifies as follows:

1. I am the Vice President, Asset Management and Planning for Rochester Gas and Electric (the “Company”), and in that capacity I make this Certification for the annual period ending December 31<sup>st</sup>, 2012 based on my knowledge of the testing program adopted by the Company in accordance the Public Service Commission’s Orders issued and effective January 5, July 21, 2005, and December 15, 2008 in Case 04-M-0159 and July 21, 2010 in Case 10-E-0271 (collectively the “Orders”), including the Quality Assurance Program filed by the Company with the Commission.
  
2. In accordance with the requirements of the Orders, the Company developed a program designed to test (i) all of the publicly accessible electric facilities owned by the Company (“Facilities”) and (ii) all streetlights located in public thoroughfares in the Company’s service territory (“Streetlights”), as identified through a good faith effort by

the Company, for stray voltage (the “Stray Voltage Testing Program”).

3. I am responsible for overseeing the Company’s Stray Voltage Testing Program and in that capacity I have monitored the Company’s Stray Voltage Testing Program during the twelve months ended December 31<sup>st</sup>, 2012 (the “Twelve-Month Period”).
4. I hereby certify that, to the best of my knowledge, information and belief, the Company has implemented and completed its Stray Voltage Testing program for the Twelve Month Period. Except for untested structures that are identified as temporarily inaccessible in the Company’s Annual Report, submitted herewith, the Company is unaware of any Facilities or Streetlights that were not tested during the Twelve-Month Period.
5. I make this certification subject to the condition and acknowledgment that it is reasonably possible that, notwithstanding the Company’s good faith implementation and completion of the Stray Voltage Testing Program, there may be Facilities and Streetlights that, inadvertently, may not have been tested or were not discovered or known after reasonable review of Company records and reasonable visual inspection of the areas of the service territory where Facilities

and Streetlights were known to exist or reasonably expected  
to be found.



Sworn to before me this 11<sup>th</sup> day of February, 2013

Notary Public: 

**ANNA M. SABERS**  
Notary Public, State of New York  
No. 013A6072590  
Qualified in Monroe County  
Commission Expires April 08, 20 14

**CERTIFICATION**  
**[FACILITY INSPECTIONS]**

STATE OF NEW YORK                    )  
  ) ss.:  
COUNTY OF Monroe                )

Mary Smith, on this (//<sup>th</sup>) day of February 2013, certifies as follows:

1. I am the Vice President, Asset Management and Planning for Rochester Gas and Electric (the “Company”), and in that capacity I make this Certification for the annual period ending December 31<sup>st</sup>, 2012 based on my knowledge of the inspection program adopted by the Company in accordance the Public Service Commission’s Orders issued and effective January 5, July 21, 2005, and December 15, 2008 in Case 04-M-0159 and July 21, 2010 in Case 10-E-0271 (collectively the “Orders”), including the Quality Assurance Program filed by the Company with the Commission.
2. The Company has an inspection program that is designed to inspect all of its electric facilities on a five-year inspection cycle, as identified through a good faith effort by the Company (“Facilities”), in accordance with the requirements of the Orders (the “Facility Inspection Program”).
3. I am responsible for overseeing the Company’s Facility Inspection Program and in that capacity I have monitored the

program during the twelve months ended December 31<sup>st</sup>,  
2012 (the "Twelve-Month Period").

4. I hereby certify that, to the best of my knowledge,  
information and belief, the Company has implemented and  
completed its Facility Inspection Program to inspect  
approximately 20 % of its Facilities during calendar year  
2012, in order to comply with the five-year inspection cycle  
required under the Orders.



Sworn to before me this 17<sup>th</sup> day of February, 2013

Notary Public: 

**ANNA M. SABERS**  
Notary Public, State of New York  
No. 01SA6072590  
Qualified in Monroe County  
Commission Expires April 08, 20 14