

Orange and Rockland Utilities, Inc.

STRAY VOLTAGE TESTS AND FACILITY INSPECTIONS

**Report on the results of stray voltage tests and facility inspections
for the year ended December 31, 2016**

**February 15, 2017
Pearl River, New York**

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I. Background

The New York State Public Service Commission's ("PSC" or "Commission") Electric Safety Standards issued on January 5, 2005 (with subsequent revisions issued on July 21, 2005, December 15, 2008, March 22, 2013 and January 13, 2015) ("Safety Standards")¹, require electric utilities in New York State to annually stray voltage test their publicly accessible underground electric facilities, including but not limited to, manholes, service boxes, and transformer vaults. Stray voltage testing shall be conducted on the exposed surfaces of the facilities. Annual stray voltage testing shall also be conducted on Company and non-Company owned, publically accessible, metallic street light and traffic signal poles located in public thoroughfares in the Company's service territory. The Safety Standards also require the Company to stray voltage test overhead distribution facilities, underground residential distribution facilities, overhead and underground transmission facilities, and substation fences concurrently with the facility five year inspections required by the Safety Standards.

This Stray Voltage Tests and Facility Inspections Report ("Report") describes the stray voltage detection program and equipment inspection program Orange and Rockland Utilities, Inc. ("O&R" or the "Company") conducted in 2016.

II. Company Overview

O&R is an investor-owned utility that provides electric service to approximately 226,600 customers in a service area of approximately 1,000 square miles within Rockland County and parts of Orange and Sullivan Counties, New York. The Company operates an electric transmission and distribution ("T&D") system that includes 212 distribution circuits with approximately 3,033 overhead circuit miles and 1,593 conductor miles of underground cable, nearly 454 transmission circuit miles, 43 distribution substations, 0 distribution switchyards, 7 transmission substations, 5 transmission/distribution substations, 6 transition structures located in 5 transition yards and 5 transmission switchyards. The Company also owns the transmission interconnections to 6 substations for single industrial customers.

III. Stray Voltage Testing Program

➤ Testing personnel

O&R conducted separate stray voltage test programs for its transmission system and its distribution system. Non-Company labor (i.e., contractors), selected through O&R's bid selection process was used to perform the test work associated with each program.

¹ Case 04-M-0159 – *Proceeding on Motion of the Commission to Examine the Safety of Electric Transmission and Distribution Systems*, Order Instituting Safety Standards (issued January 5, 2005), Order on Petitions for Rehearing and Waiver (issued July 21, 2005), Order Adopting Changes to Electric Safety Standards (issued December 15, 2008), Order Adopting Changes to Electric Safety Standards (issued March 22, 2013), and Order Granting a Petition to Modify Electric Safety Standards (issued January 13, 2015).

➤ Equipment

To test for stray voltage, the contractor's inspectors used HD Electric Company LV-S-5 Direct Contact Low Voltage Detectors. This HD device is an independently certified low voltage AC test probe.² These probes were used to detect AC voltage on publicly accessible, conductive equipment or apparatus.

➤ Training

O&R trains the contractor personnel on the contact voltage testing and program requirements. The participants include the contractor's planners, field supervisors and administrative staff assigned to O&R's project. Subsequently, the contractor is required to train new personnel. Prior to the start of annual testing, all contractor personnel are required to attend a one day refresher course, conducted by the Company. The initial two day training program and refresher course include a review of:

- The Safety Standards;
- Company policies and procedures;
- Personal protective equipment;
- Scope of the work for stray voltage testing;
- Completing the testing form;
- Data entry process; and
- Hand-held devices and laptop requirements (increases data entry efficiency).

➤ Stray Voltage Testing

During the annual period ended December 31, 2016, O&R conducted stray voltage testing of its publicly accessible underground electric facilities, including but not limited to, manholes, service boxes, and transformer vaults. Stray voltage testing was conducted on the exposed surfaces of the facilities. Annual stray voltage testing was also conducted on Company and non-Company owned, publically accessible, metallic street light and traffic signal poles located in public thoroughfares in the Company's service territory. In addition, the Company performed stray voltage tests on its overhead distribution facilities and underground residential distribution facilities, concurrently with the facility five year inspections required by the Safety Standards.

In accordance with the Safety Standards, O&R:

- a. Immediately safeguarded and /or mitigated the sixteen voltage findings ≥ 1.0 volt identified in 2016, thirteen on the overhead distribution system and three on street lights. Permanent repairs were made within 45 days; and,
- b. Tested all publicly accessible structures and sidewalks within a 30 foot radius of the electric facility where there was a stray voltage finding ≥ 1.0 volt.

² The HD device is certified to detect AC voltage within a range of 5 volts to 600 volts.

There are 176,524 structures that comprise O&R's T&D system and 2,035 non-Company owned metallic street light and traffic signal poles. Among the Company-owned structures, there are structures that did not require stray voltage testing for one or more of the following reasons:

- Wood poles that have no attached appurtenances capable of conducting electricity;
- Wood poles with electrically conductive appurtenances that are not accessible to the public (pre-wired wood);
- The facility is enclosed in fiberglass (non-conductive materials);
- The facility is de-energized; and/or
- The facility is deemed inaccessible to the public.

Inaccessible facilities include:

- a. Locked Gate/Fence – Poles behind locked gates and fences that are not accessible to the public, i.e., facilities located in fenced areas owned by other utilities, such as, water companies.
- b. Dangerous Grades – Poles located on cliffs and other dangerous grades 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.
- c. Company Property – Poles located on Company property, such as substations, are accessible only to Company personnel and authorized contractors.
- d. Vaults - Structures located inside buildings. These structures are accessible only to Company and building maintenance personnel.
- e. Limited Access Highway Facilities – Structures located on highways, exit and entrance highway ramps. The performance of stray voltage testing would constitute an unacceptable risk to the employee.

In accordance with the Commission's June 23, 2011 Order³, O&R was not required to perform mobile testing during the annual period ended December 31, 2016 because there is no city with a population of at least 50,000 located in the Company's service area and the Company does not have an underground network system where mobile testing is effective.

³ Case 10-E-0271 - *Proceeding on Motion of the Commission to Examine the Mobile Testing Requirements of the Safety Standards*, Order Requiring Additional Mobile Stray Voltage Testing (issued June 23, 2011)

IV. Facility Visual Inspection Program

O&R conducted the majority of the visual inspections in conjunction with its stray voltage testing program. Separate visual inspections were performed on its fiberglass and de-energized facilities. Contractors performed the majority of the stray voltage tests and visual inspections.

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

O&R visually inspects its distribution system on a five-year cycle, as prescribed by the Safety Standards and inspects its transmission system annually.

➤ Training

O&R trains the contractor personnel on the visual inspection program requirements. The participants include the contractor's planners, field supervisors and administrative staff assigned to O&R's project. Subsequently, the contractor is required to train new personnel. Prior to the start of annual testing, all contractor personnel are required to attend a one day refresher course. The initial two day training program and refresher course include a review of:

- The Safety Standards;
- Company policies and procedures;
- Personal protective equipment;
- Scope of the work for visual inspections;
- Completing the visual inspection form;
- Data entry process; and
- Hand-held devices and laptop requirements (increases data entry efficiency).

➤ Inspection Findings

In accordance with the Safety Standards, O&R classifies defects found on inspection by 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 represents a threat to safety and/or reliability should a failure occur prior to repair.

- Level III – Repair within three years. A Level III deficiency does not present immediate safety or operational concerns and would likely have minimum impact on the safe and reliable delivery of power if it does fail prior to repair.
- Level IV – Condition found but repairs not needed at this time. Level IV is used to track atypical conditions that do not require repair within a five year timeframe. This level should be used for future monitoring purposes and planning proactive maintenance activities.

Appendix 4, Summary of Deficiencies and Repair Activity Resulting from the Inspection Process, to this Report contains the following information:

- Deficiencies found;
- Permanent repair actions taken by year;
- Whether the repair was completed within the required timeframe; and
- The number of deficiencies awaiting repair.

The information is provided on an annual basis by priority level and by equipment groupings.

V. Program Facilities

- Structure Categories – There are 176,524 structures that comprise O&R’s T&D system and 2,035 non-Company owned street lights and traffic signals. The Company facilities are broken down into the following four main categories:
- Distribution Overhead – There are 137,274 distribution pole structures in O&R’s service territory. Twenty percent of the distribution overhead facilities are included in both the stray voltage and inspection programs. The stray voltage testing criteria include all publicly accessible utility-owned or joint-use wooden poles with utility electrical facilities located on public thoroughfares or 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.
- Underground Facilities – There are 31,948 underground facilities in O&R’s service territory. Twenty percent of the facilities are included in both the stray voltage (with the exception of fiberglass hand hole covers) and inspection programs. The stray voltage testing criteria includes subsurface structures and above ground structures. Included in the above ground structures are pad mount transformers and switchgear enclosures. All subsurface structures include electric utility manhole covers, submersible transformer covers and electric utility metal hand hole covers.
- Street Lights and Traffic Signals – Of the 2,553 metallic street light poles and traffic signals within O&R’s service territory, 469 are Company-owned street lights. The remaining street lights and traffic signals are owned by municipalities. All metallic

street light and traffic signal poles are included in O&R's annual stray voltage testing program. The Company-owned streetlights are included in the facility inspection program. Privately owned street lighting is not included in the stray voltage testing program, as per the Safety Standards. The stray voltage testing criteria includes all metallic street light poles, traffic signals, and pedestrian crosswalk signals located on publicly accessible thoroughfares. The large majority of street lights in O&R's service area are mounted on wooden poles, and do not require stray voltage testing because their electrically conductive surfaces are not accessible to the public. All stray voltage testing of street lights is performed at night while the fixtures are energized.

- Substation Fences and Transmission Structures – There are 68 substation fences and approximately 6,765 individual poles and towers that comprise O&R's overhead transmission system. Transmission structures support circuit voltages of 34.5 kilovolts and greater. Transmission poles with distribution under build are included in this transmission category. O&R inspects its transmission system annually. Stray voltage testing was performed on all transmission structures and substation fences in 2016. The stray voltage testing criteria includes all structures, guys, and down leads attached to the structures. As per the Safety Standards, stray voltage testing is required to be performed again in 2021.

VI. Annual Performance Targets

O&R performed the required stray voltage testing and facility inspections in accordance with the requirements and performance mechanism targets set forth in the Safety Standards.

In compliance with the Safety Standards, O&R has met the annual performance target for stray voltage testing for the annual period ended December 31, 2016. The structures tested and testing results are set forth in Appendix 1, Stray Voltage Testing Summary, of this Report.

The results are summarized in the tables set forth below.

Inspection Performance Summary

176,524 Total O&R Transmission and Distribution Structures

Inspection Year	Number of Transmission and Distribution Structures Inspected in 2016	% of Transmission and Distribution Structures Inspected in 2016	Cumulative % of Transmission and Distribution Structures Inspected During 5-Year Cycle 2015 – 2019
2016	44,309	25%	50%

137,274 Total Overhead Distribution Structures

Inspection Year	Number of Overhead Distribution Structures Inspected in 2016	% of Overhead Distribution Structures Inspected in 2016	Cumulative % of Overhead Distribution Structures Inspected During 5-Year Cycle 2015 – 2019
2016	32,332	24%	45%

6,833 Total Overhead Transmission Structures

Inspection Year	Number of Overhead Transmission Structures Inspected in 2016	% of Overhead Transmission Structures Inspected in 2016	Cumulative % of Transmission Structures Inspected During 5-Year Cycle 2015 – 2019
2016	6,833 ⁴	100%	100%

31,948 Total Underground Structures and Pad-Mounted Transformers

Inspection Year	Number of Underground Facilities and Pad-Mounted Transformers Inspected in 2016	% of Underground Facilities and Pad-Mounted Transformers Inspected in 2016	Cumulative % of Underground Facilities and Pad-Mounted Transformers Inspected During 5-Year Cycle 2015 – 2019
2016	4,675	15%	36%

469 Total O&R Street Lights

Inspection Year	Number of Street Lights Inspected in 2016	% of Street Lights Inspected in 2016	Cumulative % of Street lights inspected during 5-Year Cycle 2015 – 2019
2016	0	0	0

**Note: Of the 2,504 street lights and traffic signals, 2,035 are non-Company owned structures and do not require inspection. Company-owned street lights were not due for inspection in 2016.*

⁴ The total includes 68 substation fences.

VII. Certifications

Pursuant to Section 7 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 street lights and traffic signals within the service territory. Publically accessible overhead distribution facilities, underground residential facilities were tested concurrently with the facility inspection required in Section 4 of the Electric Safety Standards, as referred to in the body of this 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

- Of the 176,524 electrical structures that comprise O&R's T&D system and 2,035 non-Company owned equipment, 46,344 distribution and transmission structures were visited and/or stray voltage tested, as part of its stray voltage-testing program for 2016. O&R stray voltage tested its transmission system in 2016. Pursuant to the Safety Standards, stray voltage testing is required to be performed again in 2021.

The chart below describes all Findings ≥ 1.0 volt identified and mitigated.⁵

<i>Structure Type</i>	<i>Cause of Voltage</i>	<i>Voltages Found ≥ 1 Volt</i>
Distribution Poles - Ground	Broken Ground	5
Distribution Poles - Ground	Defective Capacitor Bank	1
Distribution Poles - Goab/Other	Broken Ground	1
Distribution Poles - Guy	Defective Ground	5
Distribution Poles - Guy	Defective Neutral Rack	1
Streetlight	Deteriorating Grounds	3

Sixteen voltage findings ≥ 1 volt were identified on the overhead distribution system. All voltage findings were immediately safeguarded and permanently mitigated the same day.

⁵ Section 1(f) of the Safety Standards defines a Finding as “[a]ny 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 “[v]oltage 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.”

O&R analyzed the testing results of 2016 and determined that the predominant causes of stray voltage findings were insufficient bonding on ground and guy wires. O&R continues its quality assurance and control measures by conducting field audits to verify that the system is built to engineering standards.

In accordance with the Safety Standards, when O&R identified a stray voltage finding on the electric facility during stray voltage testing, the Company stray voltage tested all publicly accessible structures and sidewalks within a minimum 30 foot radius of the electric facility. Regarding the eight stray voltage findings referred to above, the Company identified no nearby structures with voltage.

IX. Inspections Results and Analysis

Of the 176,524 electrical structures that comprise O&R’s T&D system, 43,840 structures were inspected during 2016. The charts below summarize the results of these inspections.

Overhead Distribution Structures

Table of Locations with Deficiencies

Locations Inspected	*Locations w/ Deficiencies	% Locations w/ Deficiencies
32,332	1,908	6%

Breakdown of Deficiencies

Level Rating	Number of Deficiencies	% Deficiencies Found
1	69	4%
2	605	31%
3	1,234	65%
Total	1,908	100%

Overhead Transmission Structures

Table of Locations with Deficiencies

Locations Inspected	*Locations w/ Deficiencies	% Locations w/ Deficiencies
6,833	150	2.2%

Breakdown of Deficiencies

Level Rating	Number of Deficiencies	% Deficiencies Found
Level 1	0	0%
Level 2	0	0%
Level 3	150	100%
Total	150	100%

Underground Facilities and Pad-mounted Transformers

Table of Locations with Deficiencies

Locations Inspected	*Locations w/ Deficiencies	% Locations w/ Deficiencies
4,675	34	<1%

Breakdown of Deficiencies

Level Rating	Number of Deficiencies	% Deficiencies Found
Level 1	23	68%
Level 2	3	8%
Level 3	8	24%
Total	34	100%

Streetlights

Table of Locations with Deficiencies

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

Breakdown of Deficiencies

Level Rating	Number of Deficiencies	% Deficiencies Found
Level 1	0	0%
Level 2	0	0%
Level 3	0	0%
Total	0	0%

**Note: Number of locations with deficiencies is less than the number of deficiencies because there is more than one deficiency at a location.*

➤ **Level I Conditions**

In 2016, O&R visually inspected 43,840 structures and identified 92 Level 1 conditions. The Level 1 conditions O&R identified on the overhead distribution system were blown lightning arrestors, floating primary wires, tree limbs on the primary wire and cracked insulators. The Level 1 conditions O&R identified on the underground distribution system were primarily damaged and/or leaking pad mount transformers and hand holes with damaged covers. O&R identified no Level 1 conditions on the Company's transmission system.

➤ Level 2 Conditions

In 2016, O&R identified 608 Level 2 conditions on the T&D system. The majority of the Level 2 conditions on the overhead distribution system are rungs on poles located below 8'-0", cracked cross arms and secondary wire off the pin. The majority of the Level 2 conditions on the underground distribution system are unsecured hand hole covers and damaged and/or shifted pad mounts.

➤ Level 3 Conditions

In 2016, O&R identified 1,392 Level 3 conditions on the T&D system. O&R identified 150 Level 3 conditions on the transmission system and 1,242 conditions on the distribution system. The majority of Level 3 conditions on the transmission system are wood pole deficiencies, and grounding system conditions. The remaining conditions are related to anchors/guy wires, cross arms, right of way conditions and, insect/woodpecker damage. Of the 1,234 Level 3 conditions identified on the overhead distribution system, the majority are anchors and guy wire conditions, grounding conditions and conductor conditions. The majority of the Level 3 conditions on the underground distribution system are unsecured hand hole covers.

In an effort to reduce the Level 2 and Level 3 conditions, O&R continues to improve its quality assurance and control so that new construction is built to specification and the National Electrical Safety Code compliance. O&R's distribution line upgrades, capital improvements, defective pole replacement program and transmission and distribution system repair program (completing repairs on conditions identified during the inspection cycles) have resulted in an approximate 31% reduction in Level 2 and 3 conditions identified during the 2010 -2014 inspection cycle from the number of Level 2 and 3 conditions identified during 2005 through 2009.

X. Quality Assurance and Control

O&R's Quality Assurance and Compliance Department is responsible for the implementation of the Company's Electric Quality Assurance Program ("Electric QA Program"). In addition to verifying compliance with the requirements of the Safety Standards, the Company's Electric QA Program is designed to promote the health and safety of the public, the reliable and economical operation of the Company's electric system, compliance with applicable electric codes and regulations, and utilization of Company resources in an efficient manner.

The O&R Electric QA Program also includes a Corrective Action Documentation and Trending procedure.⁶ The purpose of this procedure is to define the process by which Quality Assurance and Compliance maintains a corrective action database and trends discrepancies identified by the Electric QA Program. O&R personnel implementing the

⁶ Details on the O&R Electric QA Program and the Corrective Action Documentation were included with the Company's February 18, 2005 filing with the Commission in Case 04-M-0159.

Electric QA Program are independent from the Electric Operations and Electric Engineering Groups and the Company personnel responsible for the implementation of the Stray Voltage Testing and Visual Inspection Programs.

Quality Assurance (“QA”) personnel conducted a review of the Stray Voltage Testing and Visual Inspection programs during 2016. QA performed stray voltage testing and visual inspection on a selective sample of previously tested and inspected Company and municipal streetlights, overhead and underground distribution facilities to verify testing and inspection of equipment and the accuracy of data and records. QA conducted announced and unannounced field observations of field personnel to verify that tests were performed on all required structures. QA found the testing and inspections effectively performed and producing results consistent with the Electric QA Programs’ objectives.

2016 Quality Assurance and Quality Control Results

The Company’s Electric QA Program selectively sampled and retested 848 distribution structures. This statistically significant sample size exceeds the 500 units required by the latest version of ANSI Z1.4 (MIL-STD-105D) for the determination of a normal sample size for a unit population of 35,001 - 150,000. The sample selection was distributed across the various structure types.

848 Structures Sampled

Category	Number of Structures Sampled	Percentage of Sample Size
Overhead Distribution	315	38%
Underground Distribution	352	41%
Street Lights/Traffic Signals	181	21%
Total	848	100%

Of the 848 structures selected, QA identified no stray voltage conditions during retesting and the re-inspections verified the visual inspection results reported by the contractor.

XI. Other Pertinent Information

➤ Reports from the Public

As set forth in Appendix 3 to this Report, during 2016, O&R received 14 reports from customers regarding a stray voltage or shock hazard. In compliance with the Safety Standards, O&R responded, investigated and mitigated positive findings of shock incidents reported by the public.

Of the 14 incidents that were reported to O&R, 9 cases were substantiated and 5 incidents proved to be unsubstantiated. Of the 9 substantiated cases, 4 were

attributable to O&R system equipment, 1 was attributable to another utility, and 4 were due to non-Company equipment.

The 5 unsubstantiated cases were a result of faulty customer-owned equipment/wiring or no trouble found upon arrival.

➤ Stray Voltage Initiatives

O&R has worked and communicated with the Department of Public Service Commission Staff on issues attendant with the implementation of the Safety Standards. O&R continues to participate in joint meetings with the other New York utilities and Department of Public Service Commission Staff to seek best practices, employ lessons learned, and promote a high degree of consistency in the implementation of the Safety Standards requirements.

➤ Temporary Repairs

In accordance with the Safety Standards, when a temporary repair is located during inspection or performed by the Company, the Company exercised its best efforts to make a permanent repair of the facility within 90 days. Identified temporary repairs that remain on the system for more than 90 days are generally due to extraordinary circumstances, e.g., storms that require extensive repair activity, equipment outage not available, or customer work required.

Appendix 1

Stray Voltage Testing Summary

Orange & Rockland Utilities, Inc. Data as of 12/31/16	2016 Total System Units	2016 System Units Tested	Percent Completed	Units with Voltage Found (>= 1.0v)	Percent of Units Tested with Voltage (>= 1.0v)	*Units Classified as Inaccessible /Not Found
Overhead Distribution Facilities	137,274	32,071	23%	13	0.01%	1,509
Underground Distribution Facilities	31,948	3,102	10%	0	0.00%	405
Street Lights / Traffic Signals	2,553	2,504	100%	3	0.12%	49
**Substation Fences	68	68	100%	0	0.00%	0
**Transmission Facilities	6,765	6,765	100%	0	0.00%	0
TOTAL	178,608	44,510	25%	16	0.01%	1,963

** Structures classified as inaccessible are defined on page 4, of this Report.*

*** Substation fences and transmission structures were stray voltage tested in 2016. As per the Safety Standards, stray voltage testing is required to be performed again in 2021.*

Appendix 2

Summary of Energized Objects

	Initial Readings				Readings after Mitigation		
	1-4.4 V	4.5-24.9 V	> 25 V	Totals	< 1 V	1 V-4.4 V	>4.5 V
Distribution Facilities							
Pole							
Ground	3	3		6	6		
Guy	6			6	6		
Riser							
Other		1		1	1		
Underground Facilities							
Service Box							
Manhole							
Padmount Switchgear							
Padmount Transformer							
Vault – Cover/Door							
Pedestal							
Other							
Street Lights / Traffic Signals							
Metal Street Light Pole	1	2		3	3		
Traffic Signal Pole							
Pedestrian Crossing Pole							
Traffic Control Box							
Other							
Substation Fences							
Fence							
Other							
Transmission (Total)							
Lattice Tower							
Pole							
Ground							
Guy							
Other							
Miscellaneous Facilities							
Sidewalk							
Gate/Fence/Awning							
Control Box							
Scaffolding							
Bus Shelter							
Fire Hydrant							
Phone Booth							
Control Box							
Water Pipe							
Riser							
Other							

Appendix 3

Summary of Shock Reports from the Public

	Quarterly Update	Yearly Total
I. Total Shock Calls Received:	0	14
Unsubstantiated	0	5
Normally Energized Equipment	0	9
Stray Voltage:		
Person	0	8
Animal	0	1
II. Injuries Sustained/Medical Attention Received:	0	4
Person	0	3
Animal	0	1
III. Stray Voltage Source:	0	9
Utility Responsibility (Total)	0	4
Overhead Distribution System	0	3
Underground Distribution System	0	1
Transmission System	0	0
Other Utility/Gov't Agency (Total)	0	1
Streetlight	0	0
Other (Total)	0	1
Customer Responsibility (Total)	0	4
IV. Stray Voltage Range:	0	9
1.0V to 4.4V	0	0
4.5V to 24.9V	0	0
25V and above	0	0
Unknown	0	9

Appendix 4

Distribution

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Overhead Facilities	2012			2013			2014			2015			2016		
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
Poles															
Pole Condition															
Number of Deficiencies	-	853	-	-	244	-	-	195	-	3	100	-	-	480	-
Repaired in Time Frame		773			226			195		3	99			184	
Repaired - Overdue		80			18						1				
Not Repaired - Not Due														296	
Not Repaired - Overdue															
Grounding System															
Number of Deficiencies	-	-	75	-	-	132	-	-	136	-	-	315	-	-	856
Repaired in Time Frame			75			132			88			129			8
Repaired - Overdue															
Not Repaired - Not Due								48				186			848
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Overhead Facilities	2012			2013			2014			2015			2016		
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
Poles															
Anchors/Guy Wires															
Number of Deficiencies	-	-	175	-	-	469	-	-	1,681	1	-	146	-	-	123
Repaired in Time Frame			175			468			1,615	1		17			2
Repaired - Overdue						1									
Not Repaired- Not Due									66			129			121
Not Repaired- Overdue															
Cross Arm/Bracing															
Number of Deficiencies	-	2	1	-	2	-	2	-	-	-	4	77	2	73	4
Repaired in Time Frame		2	1		2		2				4	46	2	38	
Repaired - Overdue															
Not Repaired - Not Due												31		35	4
Not Repaired - Overdue															
Riser															
Number of Deficiencies	-	-	-	-	-	-	-	-	1	-	-	40			14
Repaired in Time Frame									1			1			1
Repaired - Overdue															
Not Repaired- Not Due												39			13
Not Repaired- Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Overhead Facilities	2012			2013			2014			2015			2016		
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
Conductors															
Primary Wire/Broken Ties															
Number of Deficiencies	-	-	36	5	-	75	1	-	14	19	-	182	12		215
Repaired in Time Frame			36	3		75	1		14	18		132	11		7
Repaired - Overdue				2						1			1		
Not Repaired - Not Due															208
Not Repaired - Overdue															
Secondary Wire															
Number of Deficiencies	-	1	1	-	1	3	-	-	39	-	-	62	-	43	16
Repaired in Time Frame		1	1		1	3			35			1			
Repaired - Overdue															
Not Repaired - Not Due									4			61		43	16
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Overhead Facilities	2012			2013			2014			2015			2016		
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
Conductors															
Neutral															
Number of Deficiencies	-	-	-	-	1	1	-	-	-	-	1	-	-	6	-
Repaired in Time Frame					1	1					1			4	
Repaired - Overdue															
Not Repaired - Not Due														2	
Not Repaired - Overdue															
Insulators															
Number of Deficiencies	-	-	-	2	-	-	1	-	-	7	-	-	10	-	-
Repaired in Time Frame				2			1			7			9		
Repaired - Overdue													1		
Not Repaired - Not Due															
Not Repaired - Overdue															
Pole Equipment															
Transformers															
Number of Deficiencies	5	-	-	-	-	-	4	-	-	2	-	-	1	-	-
Repaired in Time Frame	5						4			2			1		
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Overhead Facilities	2012			2013			2014			2015			2016		
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
Pole Equipment															
Cutouts															
Number of Deficiencies	-	-	-	1	-	-	-	-	-	2	1	-	2	-	-
Repaired in Timeframe				1						2	1		2		
Repaired – Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Lightning Arrestors															
Number of Deficiencies	-	-	-	4	-	-	5	-	-	31	-	-	37	-	-
Repaired in Time Frame				4			5			29			32		
Repaired - Overdue										2			5		
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Overhead Facilities	2012			2013			2014			2015			2016		
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
Pole Equipment															
Other Equipment															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Overhead Facilities	2012			2013			2014			2015			2016		
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
Miscellaneous															
Trimming Related															
Number of Deficiencies	-	6	4	1	14	5	1	6	16	10	2	14	5	3	6
Repaired in Time Frame		6	4	1	11	5	1	6	8	10	2		5	3	
Repaired - Overdue					3										
Not Repaired - Not Due									8			14			6
Not Repaired - Overdue															
Other															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-			
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Overhead Facilities	2012			2013			2014			2015			2016		
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	Withi n 1 week	Within 1 year	Within 3 years
Overhead Facilities Total															
Total															
Number of Deficiencies	5	862	292	13	262	685	14	201	1887	75	108	836	69	605	1234
Repaired in Time Frame	5	782	292	11	241	684	14	201	1761	72	107	326	62	229	18
Repaired - Overdue		80		2	21	1				3	1		7		
Not Repaired - Not Due									126			510		376	1216
Not Repaired - Overdue															

Transmission

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Transmission Facilities	2012			2013			2014			2015			2016		
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
Towers / Poles															
Steel Towers															
Number of Deficiencies	-	-	-	-	-	-	-	-	11	-	-	5	-	-	6
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due									11			5			6
Not Repaired - Overdue															
Poles															
Number of Deficiencies	-	-	26	-	5	85	-	-	30	-	-	46	-	-	43
Repaired in Time Frame			16		4	69			16			13			6
Repaired - Overdue			3		1										
Not Repaired - Not Due									14			33			37
Not Repaired - Overdue			7			16									

Orange and Rockland Utilities, Inc.

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

As of 12/31/16	2012			2013			2014			2015			2016			
	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	
Towers / Poles																
Anchors/Guy Wire																
Number of Deficiencies	-	-	2	-	-	1	-	-	6	-	1	9	-	-	6	
Repaired in Time Frame			2			1					1	3				
Repaired - Overdue																
Not Repaired - Not Due									6			6			6	
Not Repaired - Overdue																
Cross Arm/Brace																
Number of Deficiencies	-	-	2	-	1	5	-	1	8	-	-	16	-	-	20	
Repaired in Time Frame			1			2		1	4			3				
Repaired - Overdue					1											
Not Repaired - Not Due									4			13			20	
Not Repaired - Overdue			1			3										
Grounding System																
Number of Deficiencies	-	-	18	-	-	14	-	-	37	-	-	42	-	-	56	
Repaired in Time Frame			9			12			24			23			29	
Repaired - Overdue			4													
Not Repaired - Not Due									13			19			27	
Not Repaired - Overdue			5			2										

Orange and Rockland Utilities, Inc.

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

As of 12/31/16	2012			2013			2014			2015			2016			
	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	
Conductors																
Cable																
Number of Deficiencies	-	-	-	-	-	-	-	-	4	-	-	1	-	-	1	
Repaired in Time Frame									3							
Repaired - Overdue																
Not Repaired - Not Due									1			1			1	
Not Repaired - Overdue																
Static/Neutral																
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Repaired in Time Frame																
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Transmission Facilities	2012			2013			2014			2015			2016		
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
Conductors															
Insulators															
Number of Deficiencies	-	-	3	-	-	2	-	-	7	-	-	9	-	-	10
Repaired in Time Frame			2			2			3			4			
Repaired - Overdue			1												
Not Repaired - Not Due									4			5			10
Not Repaired - Overdue															
Miscellaneous															
Right of Way Condition															
Number of Deficiencies	-	-	3	-	-	12	-	-	23	-	-	9	-	-	8
Repaired in Time Frame						11			10			6			
Repaired - Overdue															
Not Repaired - Not Due									13			3			8
Not Repaired - Overdue			3			1									
Other															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16	2012			2013			2014			2015			2016		
Transmission Facilities	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
Transmission Facilities Total															
Total															
Number of Deficiencies	-	-	54	-	6	119	-	1	126	-	1	137	-	-	150
Repaired in Time Frame			30		4	97		1	60		1	52			35
Repaired - Overdue			8		2										
Not Repaired - Not Due									66			85			115
⁷ Not Repaired - Overdue			16			22									

⁷ The overdue repairs are scheduled to be completed in conjunction with capital projects and scheduled facility outages by year end 2017.

Underground

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Underground Facilities	2012			2013			2014			2015			2016		
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
Underground Structures															
Damaged Cover															
Number of Deficiencies	3	3	4	66	30	100	16	5	5	2	12	24	11	3	8
Repaired in Time Frame	3	3	4	65	30	100	16	5	5	2	12	19	11	3	1
Repaired - Overdue				1											
Not Repaired - Not Due												5			7
Not Repaired - Overdue															
Damaged Structure															
Number of Deficiencies	4	-	-	116	-	-	16	-	-	1	-	-	2	-	-
Repaired in Time Frame	4			116			16			1			2		
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Underground Facilities	2012			2013			2014			2015			2016		
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
Underground Structures															
Congested Structure															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Damaged Equipment															
Number of Deficiencies	3	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Repaired in Time Frame	3												1		
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16	2012			2013			2014			2015			2016			
	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	
Conductors																
Primary Cable																
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Repaired in Time Frame																
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																
Secondary Cable																
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Repaired in Time Frame																
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																
Neutral Cable																
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Repaired in Time Frame																
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Underground Facilities	2012			2013			2014			2015			2016		
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
Conductors															
Racking Needed															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Miscellaneous															
Other															
Number of Deficiencies		-	-	-	-	-	-	-	-	-	-	-	2	-	-
Repaired in Time Frame													2		
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Underground Facilities Total															
Total															
Number of Deficiencies	10	3	4	182	30	100	32	5	5	3	12	24	16	3	8
Repaired in Time Frame	10	3	4	181	30	100	32	5	5	3	12	19	16	3	1
Repaired - Overdue				1											
Not Repaired - Not Due												5			7
Not Repaired - Overdue															

Pad Mount Transformers

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Pad Mount Transformers	2012			2013			2014			2015			2016		
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
Pad Mount Transformers															
Damaged Structure															
Number of Deficiencies	14	-	-	1	-	-	-	-	-	11	-	-	2	-	-
Repaired in Time Frame	14			1						11			2		
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Damaged Equipment															
Number of Deficiencies	12	-	-	1	-	-	6	-	-	10	-	-	2	-	-
Repaired in Time Frame	12			1			6			10			2		
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Pad Mount Transformers	2012			2013			2014			2015			2016		
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
Pad Mount Transformers															
Cable Condition															
Number of Deficiencies	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame	5														
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Oil Leak															
Number of Deficiencies	71	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame	71														
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16																
Pad Mount Transformers	2012			2013			2014			2015			2016			
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	With in 3 year *	Within 1 week	Within 1 year	Within 3 years	
Pad Mount Transformers																
Off Pad																
Number of Deficiencies	42	-	-	-	-	-	1	-	-	12	-	-	3	-	-	
Repaired in Time Frame	42						1			12			3			
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																
Lock/Latch/Pen																
Number of Deficiencies	44	-	1	-	-	-	-	-	-	-	-	-	-	-	-	
-Repaired in Time Frame	44		1													
Repaired - Overdue																
Not Repaired - Not Due																
Not Repaired - Overdue																

Orange and Rockland Utilities, Inc.

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

As of 12/31/16																	
Pad Mount Transformers																	
			2012			2013			2014			2015			2016		
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	
Miscellaneous																	
Other																	
Number of Deficiencies		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Repaired in Time Frame																	
Repaired - Overdue																	
Not Repaired - Not Due																	
Not Repaired - Overdue																	
Pad Mount Transformer Total																	
Total																	
Number of Deficiencies		188	-	1	2	-	-	7	-	-	33	-	4	7	-	-	
Repaired in Time Frame		188		1	2			7			33			7			
Repaired - Overdue																	
Not Repaired - Not Due													4				
Not Repaired - Overdue																	

Street Lights

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Streetlights	2012			2013			2014			2015			2016		
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
Street Light															
Base/Light															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Handhole/Box															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Service Internal Wiring															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Orange and Rockland Utilities, Inc.

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

As of 12/31/16															
Streetlights	2012			2013			2014			2015			2016		
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
Street Light															
Access Cover															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Miscellaneous															
Other															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															
Street Light Total															
Total															
Number of Deficiencies	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repaired in Time Frame															
Repaired - Overdue															
Not Repaired - Not Due															
Not Repaired - Overdue															

Level IV Conditions

Orange and Rockland Utilities, Inc.

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

As of 12/31/16											
Level IV Conditions	2012	2012	2013	2013	2014	2014	2015	2015	2016	2016	
	Number of Conditions Found	Number of Conditions Repaired	Number of Conditions Found	Number of Conditions Repaired	Number of Conditions Found	Number of Conditions Repaired	Number of Conditions Found	Number of Conditions Repaired	Number of Conditions Found	Number of Conditions Repaired	
Overhead Facilities											
Pole Condition											
Pole Condition	1,166	40	992	24	2,147	45	909	17	2,594	18	
Grounding System	2,118	141	2,724	151	5,267	156	3,953	103	9,654	85	
Anchors/Guy Wire	3,794	231	2,180	115	2,132	45	5,053	109	8,630	35	
Cross Arm/Bracing											
Riser											
Conductors											
Primary Wire/Broken Ties											
Secondary Wire											
Neutral											
Insulators											
Pole Equip											
Transformers											
Cutouts											
Lightning Arrestors											
Other Equipment											
Miscellaneous											
Trimming Related											
Other											
Overhead Facilities Total	7,078	412	5,896	290	9,546	246	9,915	229	20,878	138	

Orange and Rockland Utilities, Inc.

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

As of 12/31/16										
Level IV Conditions	2012	2012	2013	2013	2014	2014	2015	2015	2016	2016
	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
Transmission Facilities										
Towers/Poles										
Steel Towers	637	16	480	15	910	16	704	16	903	0
Poles	2,996	326	2,032	321	3,706	302	1,270	172	938	47
Grounding System	13	6	135	24	22	9	11	3	6	
Anchors/Guy Wire	27		23	3	24	1	31		34	1
Crossarm/Brace	384	77	194	60	447	30	310	10	244	2
Conductors										
Cable			2		1		4			
Static/Neutral										
Insulators	2				2		2			
Miscellaneous										
Right of Way Condition	262	45	468	88	579	97	144	41	147	
Other										
Transmission Facilities Total	4,321	470	3,334	511	5,691	455	2,476	242	2,272	50

Orange and Rockland Utilities, Inc.

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

As of 12/31/16											
Level IV Conditions	2012	2012	2013	2013	2014	2014	2015	2015	2016	2016	
	Number of	Number of	Number of	Number of	Number of	Number of	Number of	Number of	Number of	Number of	Number of
	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions	Conditions
	Found	Repaired	Found	Repaired	Found	Repaired	Found	Repaired	Found	Repaired	
Underground Structures											
Underground Structures											
Damaged Cover											
Damaged Structure			1				7	1			
Congested Structure											
Damaged Equipment											
Conductors											
Primary Cables											
Secondary Cable											
Neutral Cable											
Racking Needed											
Miscellaneous											
Other	1		5		1		1				
Underground Structures Total	1		6	-	1	-	8	1			
Pad Mount Transformers											
Pad Mount Transformers											
Damaged Structure	29		3				154		30		
Damaged Equipment											
Cable Condition											
Oil Leak											
Off Pad											
Lock/Latch/Penta											
Miscellaneous											
Other											
Pad Mount Transformer Total	29		3	-	-	-	154		30		

Orange and Rockland Utilities, Inc.

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

As of 12/31/16										
Level IV Conditions	2012	2012	2013	2013	2014	2014	2015	2015	2016	2016
	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
Streetlights										
Street Light										
Base/Standard/Light										
Handhole/Service Box										
Service/Internal Wiring										
Access Cover										
Miscellaneous										
Other										
Street Light Total	-	-	-	-	-	-	-	-	-	-
Total Level IV Conditions										
Overall Total	11,429	882	2,222	224	15,238	701	12,552	172	23,180	188

Summary

Orange and Rockland Utilities, Inc.

Summary of Deficiencies and Repair Activity Resulting from the Inspection Process

As of 12/31/16							
Year	Priority Level	Repair Expected	Deficiencies Found (Total)	Repaired In Time Frame	Repaired - Overdue	Not Repaired - Not Due	*Not Repaired - Overdue
2012	I	Within 1 week	203	203	-	-	-
	II	Within 1 year	865	785	80	-	-
	III	Within 3 years	351	327	8	-	16
	IV	N/A	11,429	882	-	-	-
2013	I	Within 1 week	197	194	3	-	-
	II	Within 1 year	298	275	23	-	-
	III	Within 3 years	904	881	1	-	22
	IV	N/A	9,239	801	-	-	-
2014	I	Within 1 week	53	53	-	-	-
	II	Within 1 year	207	207	-	-	-
	III	Within 3 years	2,018	1,826	-	192	-
	IV	N/A	15,238	701	-	-	-
2015	I	Within 1 week	111	108	3	-	-
	II	Within 1 year	121	120	1	-	-
	III	Within 3 years	997	397	-	604	-
	IV	N/A	12,545	472	-	-	-
2016	I	Within 1 week	92	85	7	-	-
	II	Within 1 year	608	232	-	376	-
	III	Within 3 years	1,392	54	-	1,338	-
	IV	N/A	23,180	188	-	-	-

**Note: O&R plans to complete the overdue repairs in conjunction with capital projects and scheduled facility outages by year end 2017.*

Exhibit 1

CERTIFICATION
STRAY VOLTAGE TESTING

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

Francis W. Peverly, on this 7th day of February 2017, certifies as follows:

1. I am the Vice President, Operations of Orange and Rockland Utilities, Inc. (“the Company”), and in that capacity, I make this Certification for the annual period ending December 31, 2016 (“annual period”) based on my knowledge of the testing program adopted by the Company in accordance with the Public Service Commission’s Orders issued and effective January 5, 2005, July 21, 2005, December 15, 2008, March 22, 2013 and January 8, 2015 in Case 04-M-0159 (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 publicly accessible metallic street light and traffic signal poles located in public thoroughfares in the Company’s service territory (“Street Lights”), and (ii) publicly accessible electric facilities owned by the Company (“Facilities”) in conjunction with the facility five year inspections, as identified through a good faith effort by the Company, for stray voltage (“Stray Voltage Testing Program”).
3. 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 annual period. Except for untested structures that are identified as inaccessible in the Company’s Annual Report, submitted herewith, the Company is unaware of any Facilities or Street Lights that were not tested during the annual period.
4. 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 Street Lights 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 Street Lights were known to exist or reasonably expected to be found.



Francis W. Peverly

Sworn to before me this 7th day of February, 2017

Notary Public: Joann E. Dagele

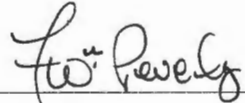
JOANN E. DAGELE
Notary Public, State of New York
No. 01045005650
Qualified in Orange County
Commission Expires 4/20/ 2018

CERTIFICATION
FACILITY INSPECTIONS

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

Francis W. Peverly, on this 7th day of February 2017, certifies as follows:

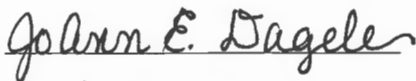
1. I am the Vice President, Operations of Orange and Rockland Utilities, Inc. (“the Company”), and in that capacity I make this Certification for the annual period ending December 31, 2016 based on my knowledge of the inspection program adopted by the Company in accordance the Public Service Commission’s Orders issued and effective January 5, 2005, July 21, 2005, December 15, 2008, March 22, 2013 and January 13, 2015 in Case 04-M-0159 (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 on a five-year inspection cycle all of its electric facilities (“Facilities”), as identified through a good faith effort by the Company, in accordance with the requirements of the Orders (the “Facility Inspection Program”).
3. I hereby certify that, to the best of my knowledge, information and belief, the Company has implemented and completed its Stray Voltage Visual Inspection Program for the annual period. Except for structures that are identified as inaccessible in the Company’s Annual Report, submitted herewith, the Company is unaware of any Facilities or Street Lights that were not inspected during the annual period.



Francis W. Peverly

Sworn to before me this 7th day of February, 2017

Notary Public:



JOANN E. DAGELE
Notary Public, State of New York
No. 01DA6005650
Qualified in Orange County
Commission Expires 4/20/ 2018