

# **Orange and Rockland Utilities, Inc.**

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## **STRAY VOLTAGE TESTS AND FACILITY INSPECTIONS**

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**Report on the results of stray voltage tests and facility inspections  
for the year ended December 31, 2018**

**February 15, 2019**

**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"),<sup>1</sup> require electric utilities in New York State to stray voltage test their publicly accessible underground electric facilities annually, 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 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 2018.

## **II. Company Overview**

O&R is an investor-owned utility that provides electric service to approximately 232,000 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 211 distribution circuits with approximately 3,043 overhead circuit miles and 1,593 conductor miles of underground cable, nearly 455 transmission circuit miles, 44 distribution substations, 7 transmission substations, 5 transmission/distribution substations, 7 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.

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<sup>1</sup> 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.<sup>2</sup> 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.

➤ Stray Voltage Testing

During the annual period ended December 31, 2018, 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 one voltage findings  $\geq 1.0$  volt identified in 2018, on a street light. 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  $\geq 1.0$  volt.

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



There are 178,840 structures that comprise O&R's T&D system and 2,759 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, *e.g.*, 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 Order,<sup>3</sup> O&R was not required to perform mobile testing during the annual period ended December 31, 2018 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.

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<sup>3</sup> 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.

##### ➤ 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 178,840 structures that comprise O&R’s T&D system and 2,759 street lights and traffic signals. The Company facilities are broken down into the following four main categories:
- Distribution Overhead – There are 139,022 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 32,908 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 – There are 2,759 metallic street light poles and traffic signals within O&R’s service territory. 469 of the 2,759 are Company-owned street lights. 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 69 substation fences and approximately 6,841 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, 2018. 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**

**178,840 Total O&R Transmission and Distribution Structures**

Inspection Year	Number of Transmission and Distribution Structures Inspected in 2018	% of Transmission and Distribution Structures Inspected in 2018	Cumulative % of Transmission and Distribution Structures Inspected During 5-Year Cycle 2015 – 2019
2018	32,377	17.8%	87.1%

**139,022 Total Overhead Distribution Structures**

<b>Inspection Year</b>	<b>Number of Overhead Distribution Structures Inspected in 2018</b>	<b>% of Overhead Distribution Structures Inspected in 2018</b>	<b>Cumulative % of Overhead Distribution Structures Inspected During 5-Year Cycle 2015 – 2019</b>
2018	22,015	15.8%	78.2%

**6,910 Total Overhead Transmission Structures**

<b>Inspection Year</b>	<b>Number of Overhead Transmission Structures Inspected in 2018</b>	<b>% of Overhead Transmission Structures Inspected in 2018</b>	<b>Cumulative % of Transmission Structures Inspected During 5-Year Cycle 2015 – 2019</b>
2018	6,910	100.0%	100.0%

**32,908 Total Underground Structures and Pad-Mounted Transformers**

<b>Inspection Year</b>	<b>Number of Underground Facilities and Pad-Mounted Transformers Inspected in 2018</b>	<b>% of Underground Facilities and Pad-Mounted Transformers Inspected in 2018</b>	<b>Cumulative % of Underground Facilities and Pad-Mounted Transformers Inspected During 5-Year Cycle 2015 – 2019</b>
2018	3,452	10.5%	63.2%

**469 Total O&R Street Lights**

<b>Inspection Year</b>	<b>Number of Street Lights Inspected in 2018</b>	<b>% of Street Lights Inspected in 2018</b>	<b>Cumulative % of Street lights inspected during 5-Year Cycle 2015 – 2019</b>
2018	0	0	0

*\*Company-owned street lights were not due for inspection in 2018.*

## 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 its street lights and traffic signals within the service territory. Publicly 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 178,840 electrical structures that comprise O&R's T&D system and 2,759 non-Company owned equipment, 32,377 T&D structures were visited and/or stray voltage tested, as part of the Company's stray voltage-testing program for 2018. O&R stray voltage tested its transmission system in 2016. Pursuant to the Safety Standards, the Company is required to perform stray voltage testing again in 2021.

The chart below describes all Findings  $\geq 1.0$  volt identified and mitigated.<sup>4</sup>

<i>Structure Type</i>	<i>Cause of Voltage</i>	<i>Voltages Found <math>\geq 1</math> Volt</i>
Streetlight	Bad Ground	1

The Company identified one finding  $\geq 1$  volt on a streetlight. The Company immediately safeguarded this streetlight and permanently mitigated it the same day.

<sup>4</sup> 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 2018 and determined that the predominant cause of stray voltage findings was bad streetlight grounds. 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 one stray voltage finding referred to above, the Company identified no nearby structures with stray voltage.

**IX. Inspections Results and Analysis**

Of the 178,840 electrical structures that comprise O&R’s T&D system, O&R inspected 32,377 structures during 2018. The charts below summarize the results of these inspections.

**Overhead Distribution Structures**

***Table of Locations with Deficiencies***

<b>Locations Inspected</b>	<b>*Locations w/ Deficiencies</b>	<b>% Locations w/ Deficiencies</b>
22,015	700	3.2%

***Breakdown of Deficiencies***

<b>Level Rating</b>	<b>Number of Deficiencies</b>	<b>% Deficiencies Found</b>
1	15	2.1%
2	190	27.2%
3	495	70.7%
<b>Total</b>	<b>700</b>	<b>100</b>

**Overhead Transmission Structures**

***Table of Locations with Deficiencies***

<b>Locations Inspected</b>	<b>*Locations w/ Deficiencies</b>	<b>% Locations w/ Deficiencies</b>
6,910	70	1%

***Breakdown of Deficiencies***

<b>Level Rating</b>	<b>Number of Deficiencies</b>	<b>% Deficiencies Found</b>
Level 1	0	0%
Level 2	0	0%
Level 3	70	100%
<b>Total</b>	<b>70</b>	<b>100%</b>

**Underground Facilities and Pad-mounted Transformers**

***Table of Locations with Deficiencies***

<b>Locations Inspected</b>	<b>*Locations w/ Deficiencies</b>	<b>% Locations w/ Deficiencies</b>
3,452	26	0.75%

***Breakdown of Deficiencies***

<b>Level Rating</b>	<b>Number of Deficiencies</b>	<b>% Deficiencies Found</b>
Level 1	15	57.7%
Level 2	2	7.7%
Level 3	9	34.6%
<b>Total</b>	<b>26</b>	<b>100%</b>

**Streetlights**

***Table of Locations with Deficiencies***

<b>Locations Inspected</b>	<b>Locations w/ Deficiencies</b>	<b>% Locations w/ Deficiencies</b>
0	0	0%

***Breakdown of Deficiencies***

<b>Level Rating</b>	<b>Number of Deficiencies</b>	<b>% Deficiencies Found</b>
Level 1	0	0%
Level 2	0	0%
Level 3	0	0%
<b>Total</b>	<b>0</b>	<b>0%</b>

➤ **Level 1 Conditions**

In 2018, O&R visually inspected 32,377 structures and identified 30 Level 1 conditions. The Level 1 conditions O&R identified on the overhead distribution system were primarily 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, Off base >3", and hand holes with damaged covers. O&R identified no Level 1 conditions on the Company's transmission system.



➤ Level 2 Conditions

In 2018, O&R identified 192 Level 2 conditions on the T&D system. The majority of the Level 2 conditions on the overhead distribution system are broken cross arms, neutrals off pin, and vines. The two Level 2 conditions on the underground distribution system are unsecured hand hole covers.

➤ Level 3 Conditions

In 2018, O&R identified 574 Level 3 conditions on the T&D system. O&R identified 70 Level 3 conditions on the transmission system and 504 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 Level 3 conditions identified on the overhead distribution system, the majority are anchors and guy wire conditions, grounding conditions and conductor conditions. 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. The analysis will be updated in 2020 at the completion of the next five-year cycle.

**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 use of Company resources in an efficient manner.

The O&R Electric QA Program also includes a Corrective Action Documentation and Trending procedure.<sup>5</sup> 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 Electric QA Program are independent from the Electric Operations and Electric

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<sup>5</sup> Details on the O&R Electric QA Program and the Corrective Action Documentation were set forth in the Company's February 18, 2005 filing with the Commission in Case 04-M-0159.

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 2018. 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.

#### 2018 Quality Assurance and Quality Control Results

The Company’s Electric QA Program selectively sampled and retested 736 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, as noted in the table below.

#### *736 Structures Sampled*

<b>Category</b>	<b>Number of Structures Sampled</b>	<b>Percentage of Sample Size</b>
Overhead Distribution	317	43%
Underground Distribution	210	28.5%
Street Lights/Traffic Signals	209	28.5%
<b>Total</b>	<b>736</b>	<b>100%</b>

Of the 736 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 2018, O&R received 24 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 24 incidents that were reported to O&R, eight cases were substantiated and 16 incidents proved to be unsubstantiated. Of the eight substantiated cases, four were attributable to O&R system equipment and four were attributable to customer/other utility equipment.

The 16 unsubstantiated cases were a result of faulty customer-owned equipment/wiring or no trouble found upon arrival.

➤ 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**

<b>Orange &amp; Rockland Utilities, Inc. Data as of 12/31/18</b>	<b>2018 Total System Units</b>	<b>2018 System Units Tested</b>	<b>Percent Completed</b>	<b>Units with Voltage Found (&gt;= 1.0v)</b>	<b>Percent of Units Tested with Voltage (&gt;= 1.0v)</b>	<b>*Units Classified as Inaccessible /Not In Field</b>
<b>****Overhead Distribution Facilities</b>	133,498	21,728	16.3%	0	0%	192
<b>Underground Distribution Facilities</b>	32,908	3,471	10.5%	0	0%	44
<b>Street Lights / Traffic Signals</b>	2,759	2,714	100%	1	0.03%	45
<b>**Substation Fences</b>	0	0	0	0	0%	0
<b>**Transmission Facilities</b>	0	0	0	0	0%	0
<b>TOTAL</b>	169,165	27,913	<b>***16.5%</b>	1	0.004%	281

*\* Structures classified as inaccessible/Not in Field are defined on page 4 of this Report. Facilities that are inaccessible are not considered in determination of whether the target has been achieved.*

*\*\* Substation fences and transmission structures were stray voltage tested in 2016. Stray voltage testing is required to be performed again in 2021. This lowered the total % completed for 2018.*

*\*\*\*2018 Annual testing goal requirement is 95% of annual target (20% of Total System Units). 16.5% represents what was tested out of the complete structure count of 169,165. The actual 2018 target structure count was 28,494. O&R tested 27,913 structures or at 98% of the annual target.*

*\*\*\*\*133,498 to test but 139,022 to inspect (page 8). 5,524 fiberglass and pre-wired wood deducted since we do not test these.*

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

**Appendix 3**

**Summary of Shock Reports from the Public**

	Quarterly Update	Yearly Total
<b>I. Total Shock Calls Received:</b>	<b>9</b>	<b>24</b>
<b>Unsubstantiated</b>	7	16
<b>Normally Energized Equipment</b>	2	8
<b>Stray Voltage:</b>		
Person	2	6
Animal	0	2
<b>II. Injuries Sustained/Medical Attention Received:</b>	<b>1</b>	<b>2</b>
Person	0	1
Animal	1	1
<b>III. Stray Voltage Source:</b>	<b>2</b>	<b>8</b>
<b>Utility Responsibility (Total)</b>	<b>1</b>	<b>4</b>
Overhead Distribution System	1	4
Underground Distribution System	0	0
Transmission System	0	0
<b>Other Utility/Gov't Agency (Total)</b>	<b>0</b>	<b>1</b>
Streetlight	0	1
Other (Total)	0	0
<b>Customer Responsibility (Total)</b>	<b>1</b>	<b>3</b>
<b>IV. Stray Voltage Range:</b>	<b>2</b>	<b>8</b>
1.0V to 4.4V	0	0
4.5V to 24.9V	0	0
25V and above	0	0
Unknown	2	8

**Appendix 4**

**Distribution**

Orange & Rockland Utilities Inc.															
Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Distribution															
Overhead Facilities															
Priority Level	2014			2015			2016			2017			2018		
	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	0	195	0	2	100	0	0	409	0	0	49	0	0	136	0
Repaired in Time Frame	0	195	0	2	99	0	0	408	0	0	48	0	0	0	0
Repaired - Overdue	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	136	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grounding System</b>															
Number of Deficiencies	0	0	129	0	0	271	0	0	856	0	0	141	0	0	191
Repaired in Time Frame	0	0	101	0	0	193	0	0	64	0	0	6	0	0	0
Repaired - Overdue	0	0	28	0	0	77	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	792	0	0	135	0	0	191
Not Repaired - Overdue	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
<b>Anchors/Guy Wire</b>															
Number of Deficiencies	0	0	1637	1	0	135	0	0	113	0	0	92	0	0	53
Repaired in Time Frame	0	0	1635	1	0	135	0	0	109	0	0	59	0	0	0
Repaired - Overdue	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	4	0	0	33	0	0	53
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Cross Arm/Bracing</b>															
Number of Deficiencies	2	0	0	0	4	69	2	59	11	0	66	6	0	29	0
Repaired in Time Frame	2	0	0	0	4	69	2	58	1	0	60	0	0	14	0
Repaired - Overdue	0	0	0	0	0	0	0	1	0	0	6	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	10	0	0	6	0	15	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Riser</b>															
Number of Deficiencies	0	0	1	0	0	1	0	0	14	0	0	14	0	0	16
Repaired in Time Frame	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	13	0	0	14	0	0	16
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Orange & Rockland Utilities Inc.**

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

**Overhead Facilities**

Priority Level	2014			2015			2016			2017			2018		
	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
	Within Repair Expected 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	1	0	14	19	0	172	12	0	172	18	0	171	3	0	69
Repaired in Time Frame	1	0	14	18	0	171	11	0	119	18	0	72	3	0	1
Repaired - Overdue	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	53	0	0	99	0	0	68
Not Repaired - Overdue	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

**Secondary Wire**

Number of Deficiencies	0	0	35	0	0	3	0	0	16	0	2	21	0	1	4
Repaired in Time Frame	0	0	35	0	0	3	0	0	2	0	1	6	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	14	0	0	15	0	1	4
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Neutral**

Number of Deficiencies	0	0	0	0	1	0	0	5	0	0	16	0	0	11	0
Repaired in Time Frame	0	0	0	0	1	0	0	5	0	0	16	0	0	11	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Insulators**

Number of Deficiencies	1	0	0	7	0	0	10	0	0	5	0	0	2	0	0
Repaired in Time Frame	1	0	0	7	0	0	9	0	0	5	0	0	2	0	0
Repaired - Overdue	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



**Orange & Rockland Utilities Inc.**

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

<b>Overhead Facilities</b>															
	2014			2015			2016			2017			2018		
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	4	0	0	2	0	0	1	0	0	1	0	0	0	0	0
Repaired in Time Frame	4	0	0	2	0	0	1	0	0	1	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Cutouts</b>															
Number of Deficiencies	0	0	0	2	1	0	2	0	0	1	0	0	0	0	0
Repaired in Time Frame	0	0	0	2	1	0	2	0	0	1	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Lightning Arrestors</b>															
Number of Deficiencies	5	0	0	31	0	0	37	0	0	41	0	0	8	0	0
Repaired in Time Frame	5	0	0	29	0	0	32	0	0	41	0	0	8	0	0
Repaired - Overdue	0	0	0	2	0	0	5	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Other Equipment</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Miscellaneous</b>															
<b>Trimming Related</b>															
Number of Deficiencies	1	6	10	10	2	11	5	3	5	15	23	52	2	13	159
Repaired in Time Frame	1	6	10	10	2	11	5	3	5	15	22	33	2	1	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	19	0	12	159
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>* Other</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Overhead Facilities Total</b>															
<b>Total</b>															
Number of Deficiencies	14	201	1826	74	108	662	69	476	1187	82	156	497	15	190	492
Repaired in Time Frame	14	201	1796	71	107	583	62	474	301	82	147	176	15	26	1
Repaired - Overdue	0	0	30	3	1	77	7	2	0	0	9	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	886	0	0	321	0	164	491	
Not Repaired - Overdue	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0

\* Other deficiencies include:

\* Not Repaired Overdue: Waiting on capital improvement work to complete.

# Transmission

Orange & Rockland Utilities Inc.

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

### Transmission Facilities

Priority Level	2014			2015			2016			2017			2018		
	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
	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	0	0	10	0	0	4	0	0	4	0	0	7	0	0	3
Repaired in Time Frame	0	0	0	0	0	3	0	0	2	0	0	0	0	0	0
Repaired - Overdue	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	2	0	0	7	0	0	3
Not Repaired - Overdue	0	0	5	0	0	1	0	0	0	0	0	0	0	0	0

#### Poles

Number of Deficiencies	0	0	35	0	0	61	0	0	51	0	0	14	0	0	14
Repaired in Time Frame	0	0	25	0	0	31	0	0	20	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	29	0	0	14	0	0	14
Not Repaired - Overdue	0	0	10	0	0	30	0	0	0	0	0	0	0	0	0

#### Anchors/Guy Wire

Number of Deficiencies	0	0	7	0	1	11	0	0	11	0	0	5	0	0	4
Repaired in Time Frame	0	0	0	0	1	4	0	0	1	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	6	0	0	5	0	0	4
Not Repaired - Overdue	0	0	7	0	0	7	0	0	2	0	0	0	0	0	0

#### Crossarm/Brace

Number of Deficiencies	0	1	7	0	0	12	0	0	11	0	2	20	0	0	23
Repaired in Time Frame	0	1	4	0	0	6	0	0	6	0	0	2	0	0	0
Repaired - Overdue	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	5	0	0	18	0	0	23
Not Repaired - Overdue	0	0	2	0	0	6	0	0	0	0	2	0	0	0	0

#### Grounding System

Number of Deficiencies	0	0	41	0	0	51	0	0	65	1	0	30	0	1	30
Repaired in Time Frame	0	0	33	0	0	36	0	0	52	0	0	0	0	0	0
Repaired - Overdue	0	0	2	0	0	1	0	0	1	1	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	7	0	0	30	0	1	30
Not Repaired - Overdue	0	0	6	0	0	14	0	0	5	0	0	0	0	0	0

### Conductors

#### Cable

Number of Deficiencies	0	0	4	0	0	2	0	0	1	0	0	3	0	0	2
Repaired in Time Frame	0	0	4	0	0	1	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	1	0	0	3	0	0	2
Not Repaired - Overdue	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0

#### Static/Neutral

Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

#### Insulators

Number of Deficiencies	0	0	7	0	0	10	0	0	10	0	0	8	0	0	7
Repaired in Time Frame	0	0	3	0	0	5	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	9	0	0	8	0	0	7
Not Repaired - Overdue	0	0	4	0	0	5	0	0	1	0	0	0	0	0	0

<b>Miscellaneous</b>															
<b>Right of Way Condition</b>															
Number of Deficiencies	0	0	24	0	1	11	0	0	5	0	0	28	0	0	16
Repaired in Time Frame	0	0	19	0	0	6	0	0	1	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	4	0	0	28	0	0	16
Not Repaired - Overdue	0	0	5	0	1	5	0	0	0	0	0	0	0	0	0
<b>* Other</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Transmission Facilities Total</b>															
<b>Total</b>															
Number of Deficiencies	0	1	135	0	2	162	0	0	158	1	2	115	0	1	99
Repaired in Time Frame	0	1	88	0	1	92	0	0	82	0	0	2	0	0	0
Repaired - Overdue	0	0	8	0	0	1	0	0	3	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	63	0	0	113	0	1	99
Not Repaired - Overdue	0	0	39	0	1	69	0	0	10	0	2	0	0	0	0

# Underground Facilities

## Orange & Rockland Utilities Inc.

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

Underground Facilities	2014			2015			2016			2017			2018			
	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	16	5	5	3	12	24	12	3	8	17	2	19	5	2	9	
Repaired in Time Frame	16	5	5	3	12	24	12	3	1	17	2	5	5	1	2	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Not Due	0	0	0	0	0	0	0	0	7	0	0	14	0	1	7	
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Damaged Structure</b>																
Number of Deficiencies	16	0	0	1	0	0	3	0	0	1	0	0	1	0	0	
Repaired in Time Frame	16	0	0	1	0	0	3	0	0	1	0	0	1	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Congested Structure</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Damaged Equipment</b>																
Number of Deficiencies	0	0	0	0	0	0	1	0	0	8	0	0	1	0	0	
Repaired in Time Frame	0	0	0	0	0	0	1	0	0	8	0	0	1	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Conductors</b>																
<b>Primary Cable</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Secondary Cable</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Neutral Cable</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Racking Needed</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Miscellaneous															
<b>* Other</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Underground Facilities Total															
<b>Underground Facilities Total</b>															
Number of Deficiencies	33	5	5	4	12	24	16	3	8	26	2	19	7	2	9
Repaired in Time Frame	32	5	5	4	12	24	16	3	1	26	2	5	7	1	2
Repaired - Overdue	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	7	0	0	14	0	1	7
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

# Pad Mount Transformers

Orange & Rockland Utilities Inc.

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

Pad Mount Transformers	2014			2015			2016			2017			2018			
	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	0	0	0	11	0	0	2	0	0	3	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	11	0	0	2	0	0	3	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Damaged Equipment</b>																
Number of Deficiencies	6	0	0	9	0	0	2	0	0	0	0	0	2	0	0	
Repaired in Time Frame	6	0	0	9	0	0	2	0	0	0	0	0	2	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Cable Condition</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Oil Leak</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Off Pad</b>																
Number of Deficiencies	1	0	0	12	0	0	3	0	0	9	0	0	6	0	0	
Repaired in Time Frame	1	0	0	12	0	0	3	0	0	9	0	0	6	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Lock/Latch/Penta</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Miscellaneous</b>																
<b>* Other</b>																
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Pad Mount Total</b>																
<b>Total</b>																
Number of Deficiencies	7	0	0	32	0	0	7	0	0	27	0	0	8	0	0	
Repaired in Time Frame	7	0	0	32	0	0	7	0	0	27	0	0	8	0	0	
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

# Streetlights

Orange & Rockland Utilities Inc.

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

Streetlight Facilities															
Priority Level	2014			2015			2016			2017			2018		
	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
	Within Repair Expected 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Handhole/Service Box</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Service/Internal Wiring</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Access Cover</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Miscellaneous</b>															
<b>* Other</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Streetlight Total</b>															
<b>Total</b>															
Number of Deficiencies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired in Time Frame	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Not Due	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Not Repaired - Overdue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

# Level IV

Orange & Rockland Utilities Inc.										
Summary of Deficiencies and Repair Activity Resulting from the Inspection Process - Level IV Conditions										
Level IV Facilities	2014		2015		2016		2017		2018	
	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>Poles</b>										
Pole Condition	2147	49	909	30	2594	76	1748	29	1775	0
Grounding System	5267	182	3953	142	9654	329	3399	82	3793	6
Anchors/Guy Wire	2132	49	5053	158	8630	220	4471	108	3107	1
Cross Arm/Bracing	0	0	0	0	0	0	0	0	0	0
Riser	0	0	0	0	0	0	0	0	0	0
<b>Conductors</b>										
Primary Wire/Broken Ties	0	0	0	0	0	0	0	0	0	0
Secondary Wire	0	0	0	0	0	0	0	0	0	0
Neutral	0	0	0	0	0	0	0	0	0	0
Insulators	0	0	0	0	0	0	0	0	0	0
<b>Conductors</b>										
Transformers	0	0	0	0	0	0	0	0	0	0
Cutouts	0	0	0	0	0	0	0	0	0	0
Lightning Arrestors	0	0	0	0	0	0	0	0	0	0
Other Equipment	0	0	0	0	0	0	0	0	0	0
<b>Miscellaneous</b>										
Trimming Related	0	0	0	0	0	0	0	0	0	0
* Other	0	0	0	0	0	0	0	0	0	0
<b>Overhead Facilities Total</b>	<b>9546</b>	<b>280</b>	<b>9915</b>	<b>330</b>	<b>20878</b>	<b>625</b>	<b>9618</b>	<b>219</b>	<b>8675</b>	<b>7</b>
<b>Transmission Facilities</b>										
<b>Towers/Poles</b>										
Grounding System	22	10	11	3	6	2	7	0	3	0
Steel Towers	917	59	707	28	907	8	716	0	514	0
Poles	3719	439	1321	267	990	136	138	1	106	0
Anchors/Guy Wire	25	4	31	1	34	3	69	0	54	0
Crossarm/Brace	447	51	314	28	252	15	282	1	327	0
<b>Conductors</b>										
Cable	1	0	4	1	0	0	0	0	2	0
Static/Neutral	0	0	0	0	0	0	0	0	0	0
Insulators	2	0	2	0	0	0	2	0	2	0
<b>Miscellaneous</b>										
Right of Way Condition	582	149	144	47	152	17	162	0	203	0
* Other	0	0	0	0	0	0	0	0	0	0
<b>Transmission Facilities Total</b>	<b>5715</b>	<b>712</b>	<b>2534</b>	<b>375</b>	<b>2341</b>	<b>181</b>	<b>1376</b>	<b>2</b>	<b>1211</b>	<b>0</b>
<b>Underground Facilities</b>										
<b>Underground Structures</b>										
Damaged Cover	0	0	0	0	0	0	0	0	0	0
Damaged Structure	0	0	322	6	60	0	24	0	12	0
Congested Structure	0	0	0	0	0	0	0	0	0	0
Damaged Equipment	0	0	0	0	0	0	0	0	0	0
<b>Conductors</b>										
Primary Cable	0	0	0	0	0	0	0	0	0	0
Racking Needed	0	0	0	0	0	0	0	0	0	0
Secondary Cable	0	0	0	0	0	0	0	0	0	0
Neutral Cable	0	0	0	0	0	0	0	0	0	0
<b>Miscellaneous</b>										
* Other	4	0	4	0	0	0	4	0	0	0
<b>Underground Facilities Total</b>	<b>4</b>	<b>0</b>	<b>326</b>	<b>6</b>	<b>60</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>12</b>	<b>0</b>



**Pad Mount Transformers**

<b>Pad Mount Transformers</b>										
Damaged Structure	0	0	322	6	60	0	24	0	12	0
Damaged Equipment	0	0	0	0	0	0	0	0	0	0
Cable Condition	0	0	0	0	0	0	0	0	0	0
Oil Leak	0	0	0	0	0	0	0	0	0	0
Off Pad	0	0	0	0	0	0	0	0	0	0
Lock/Latch/Penta	0	0	0	0	0	0	0	0	0	0
<b>Miscellaneous</b>										
* Other	0	0	0	0	0	0	0	0	0	0
<b>Pad Mount Transformer Total</b>	0	0	322	6	60	0	24	0	12	0

**Streetlights**

<b>Streetlights</b>										
Base/Standard/Light	0	0	0	0	0	0	0	0	0	0
Handhole/Service Box	0	0	0	0	0	0	0	0	0	0
Service/Internal Wiring	0	0	0	0	0	0	0	0	0	0
Access Cover	0	0	0	0	0	0	0	0	0	0
<b>Miscellaneous</b>										
* Other	0	0	0	0	0	0	0	0	0	0
<b>Streetlight Total</b>	0	0	0	0	0	0	0	0	0	0

**Total Level IV Conditions**

<b>Total Overall Total</b>	15265	992	13097	717	28339	806	11046	221	9910	7
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# Summary

Orange & Rockland Utilities Inc.						
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
2014	I Within 1 week	54	53	1	0	0
	II Within 1 year	207	207	0	0	0
	III Within 3 years	1963	1889	35	0	39
	IV N/A	9547	0	0	0	0
2015	I Within 1 week	110	106	4	0	0
	II Within 1 year	122	120	1	0	1
	III Within 3 years	850	699	80	0	71
	IV N/A	10077	0	0	0	0
2016	I Within 1 week	92	85	7	0	0
	II Within 1 year	479	477	2	0	0
	III Within 3 years	1347	386	3	948	10
	IV N/A	20908	0	0	0	0
2017	I Within 1 week	121	120	1	0	0
	II Within 1 year	180	149	9	0	2
	III Within 3 years	631	185	0	446	0
	IV N/A	9631	0	0	0	0
2018	I Within 1 week	30	30	0	0	0
	II Within 1 year	193	27	0	166	0
	III Within 3 years	600	3	0	597	0
	IV N/A	8681	0	0	0	0

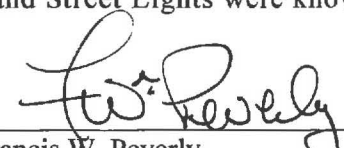
**Exhibit 1**

**CERTIFICATION**  
**STRAY VOLTAGE TESTING**

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

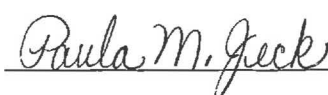
Francis W. Peverly, on this 15<sup>th</sup> day of February 2019, certifies as follows:

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, 2018 (“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 15<sup>th</sup> day of February, 2019

Notary Public:

  
\_\_\_\_\_

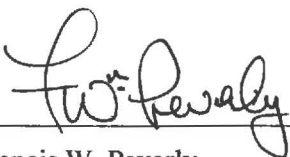
PAULA M. JECK  
Notary Public, State of New York  
No. 01JE6366925  
Qualified in Westchester County  
My Commission Expires November 6, 2021

**CERTIFICATION**  
**FACILITY INSPECTIONS**

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

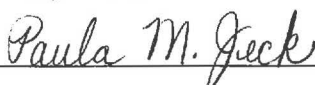
Francis W. Peverly, on this 15<sup>th</sup> day of February 2019, certifies as follows:

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, 2018 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 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 Facility 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 15<sup>th</sup> day of February, 2019

Notary Public:

  
\_\_\_\_\_

PAULA M. JECK  
Notary Public, State of New York  
No. 01JE6366925  
Qualified in Westchester County  
My Commission Expires November 6, 2021

PAULA M. JECK  
Notary Public, State of New York  
No. 01JE6366925  
Qualified in Westchester County  
My Commission Expires November 6, 2021