STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

Interoffice Memorandum

May 30, 2013

TO: THE COMMISSION

FROM: OFFICE OF ELECTRIC, GAS, AND WATER

SUBJECT: Case 13-E-0096 - 2012 Compliance Report on Stray Voltage Testing and Inspections as Required by the Electric Safety Standards.

RECOMMENDATION: This item is for information only and reports on the status of compliance with the Commission's Electric Safety Standards.

SUMMARY

On January 5, 2005 the Commission established Electric Safety Standards to safeguard the public from exposure to stray voltage and to identify and eliminate potentially harmful conditions before serious safety hazards and/or reliability deficiencies develop.[1] To accomplish this goal, electric utilities are required to annually test all of their publicly-accessible electric facilities for stray voltage and to inspect all of their electric facilities at least once every five years. The utilities are also required to annually test streetlights[2] along public thoroughfares for stray voltage, regardless of ownership. Stray voltage testing is generally a manual process performed using handheld devices (manual testing). The Commission also requires that 12 mobile surveys be performed in

[1] Case 04-M-0159, Proceeding on Motion of the Commission to Examine the Safety of Electric Transmission and Distribution Systems, Order Instituting Electric Safety Standards (issued January 5, 2005).

[2] The term "streetlights" includes streetlights owned by electric utilities and municipalities located on, along, or adjacent to public thoroughfares and areas, and traffic signal poles and devices; it does not include privately-owned fixtures, such as those located in private parking lots.

New York City;[3] two mobile surveys be completed in Buffalo; and one each in Yonkers, White Plains, Albany, Niagara Falls, Rochester, and New Rochelle.[4] In areas served predominantly by underground facilities, it is also acceptable for utilities to use mobile testing instead of manual testing. Consolidated Edison Company of New York, Inc. (Con Edison), Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), and Rochester Gas and Electric Corporation (RGE) all utilized mobile testing as a means of compliance and did not perform manual testing in the areas where mobile testing was ordered.

Manual stray voltage testing was performed on approximately 4 million utility facilities statewide in 2012, with 1,893 stray voltage findings identified. Of the total stray voltage findings, 462 (25%) were at voltage levels of 4.5 V or higher.[5] Findings attributed to streetlights accounted for 309 (67%) of the conditions at voltage levels of 4.5 V or higher.

In 2012, there were 185 calls from customers reporting shock incidents that resulted in confirmed cases of stray voltage, constituting a 27% reduction from 2011; 68 were caused by problems with utility facilities and 117 were traced to faulty customer equipment or wiring.

Although the number of findings has been declining over the last several years, stray voltage attributed to streetlights continues to be a major concern, particularly in Con Edison's service territory and in Buffalo. As stated earlier, Con Edison completes 12 mobile surveys in the New York City area on an annual basis. To address this issue in Buffalo, as part of its 2012 rate case filing, National Grid proposed and has begun to

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[3] Con Edison completed twelve mobile surveys of its underground network distribution system, which includes areas in Manhattan, the Bronx, Queens, and Brooklyn

[4] Case 04-M-0159, supra, and Case 06-M-1467, Orange and Rockland Utilities, Inc., Order Adopting Changes to Electric Safety Standards (issued December 15, 2008) and Case 10-E-0271, In the Matter of Examining the Mobile Testing Requirement of the Electric Safety Standards, Order Requiring Additional Mobile Stray Voltage Testing (issued July 21, 2010).

[5] As a result of the revision to the lower detection threshold, readings below 4.5V are now considered low voltage in nature.

implement a comprehensive street light program to proactively replace antiquated cable and ductwork that serve the street lighting system throughout the entire city of Buffalo. Staff believes that by addressing the root cause of the problem, this effort by National Grid will result in continued improvement in the rate of findings going forward. The Company will file an annual update plan on these efforts and Staff will monitor and evaluate the effectiveness and efficiency of the program going forward.

The Electric Safety Standards also require that each utility visually inspect[6] 20% of its electric facilities per year and repair the deficiencies found during the inspection process within appropriate time frames as set forth in the Safety Standards. The standards also require all facilities to be inspected within five years. Calendar year 2012 marked the third year of the second five year inspection cycle. Statewide, approximately 22% of the facilities were inspected in 2012, resulting in the identification of 146,278 deficiencies by the investor-owned utilities, of which 5,331 required repairs within one week.

BACKGROUND

On January 5, 2005 the Commission adopted Electric Safety Standards that established proactive steps to ensure the safety of the public from stray voltage and the reliability of the electric system in the State of New York. The Electric Safety Standards include: (1) annual stray voltage testing of electric facilities and streetlights accessible to the public, using certified voltage detection devices; (2) inspection of utility electric facilities on a minimum of a five-year cycle; (3) recordkeeping, certification, quality assurance and reporting requirements; and (4) adoption of the National Electric Safety Code as the minimum standard governing utility construction, maintenance, and operations.

[6] An inspection requires a qualified and trained individual to evaluate and examine the entire structure to determine its condition and the potential for it to cause or lead to safety hazards or adversely affect reliability. Unlike stray voltage testing, this task requires opening access covers and entering underground facilities, such as manholes.

In December 2008, the Commission adopted several revisions to the Safety Standards. The major changes with respect to stray voltage testing involved the addition of a definition of a stray voltage finding,[7] along with a requirement to mitigate all such findings, enhanced testing protocols for locations where voltage findings are encountered, and a revision from 8 V to 6 V as the lower threshold of the range for stray voltage testing equipment. Additionally, the 2008 Order amended requirements for utility inspections to include a common grading system for rating substandard conditions during facility inspections with defined repair guidelines.

In 2008, Con Edison filed a formal petition with the Commission seeking approval to use mobile detection in lieu of manual testing to comply with the testing requirements of the Electric Safety Standards in areas where the mobile testing can be performed. As part of the revisions to the Electric Safety Standards, Con Edison's petition requests were adopted and mobile testing was permitted as an alternative means of compliance.

In March 2013 the Commission again adopted several substantive revisions to the Standards. Most notably the frequency of stray voltage testing on the overhead, transmission, pad mount transformers, and underground residential distribution (URD) was modified. Rather than being required on an annual basis, the Commission required testing on a five year cycle, same as the existing inspection cycle requirements. This resulted from a joint petition filed with the Commission by the New York State utilities identifying the low number of stray voltage findings on these facilities compared to the efforts and expenditures devoted to those testing efforts by the utilities without being warranted by additional safety concerns. The annual stray voltage testing requirements remain in effect for street lights and underground facilities across the State. In addition, the requirement for an internal inspection for underground residential distribution (URD) transformers was eliminated. This determination was based on the facts that the efforts to complete an internal inspection on URD transformers provided little to no additional

[7] Any confirmed voltage reading on an electric facility or streetlight greater than or equal to 1V measured using a volt meter and a 500 ohm shunt resistor.

safety benefits over the external visual inspection based on the number of results identified since the Safety Standards were implemented. Both of these modifications to the Safety Standards provide for a more streamlined and efficient testing and inspection program by the utilities, without reducing the level of safety to the people of New York. The March 2013 modifications to the Safety Standards go into effect starting in 2013 and do not have any impact or bearing on the 2012 results being provide here as part of this report.

STRAY VOLTAGE TESTING

Table 1 lists the number of stray voltage findings of 1 V or above in 2012 resulting from manual testing, by facility type.[8] Stray voltage testing was performed on approximately four million transmission and distribution facilities across the State. The table also contains the 2011 data for comparison.

Table 1: Stray Voltage Findings from Manual Testing by Facility Type

2012 Test Cycle					
Company	**Streetlights**	**Underground Distribution**	**Overhead Distribution**	**Transmission**	**Total Findings**
Con Edison	216	0	4	0	220
National Grid	160	1	200	125	486
NYSEG	16	1	190	451	658
RGE	8	0	40	120	168
Central Hudson	0	2	339	0	341
Orange & Rockland	0	0	17	1	18
Municipal Electric Companies	0	0	2	0	2
Total	400	4	792	697	1,893
2011 Test Cycle					
Company	**Streetlights**	**Underground Distribution**	**Overhead Distribution**	**Transmission**	**Total Findings**
Con Edison	265	21	18	0	304
National Grid	175	5	263	116	559
NYSEG	33	0	199	61	293
RGE	4	0	26	99	129
Central Hudson	6	8	483	0	497
Orange & Rockland	3	1	20	0	24
Municipal Electric Companies	0	0	32	0	32
Total	486	34	1,041	276	1,837

[8] These findings do not include instances of stray voltage discovered by company personnel as part of their routine work or instances found by other means, such as customer reports. This data also does not include instances of stray voltage discovered by mobile detection.

In Table 1, NYSEG showed a considerable increase in the number of stray voltage findings on its Transmission system; however, when questioned about this anomaly by Staff, the Company stated it could not identify a specific reason for the increase in findings but further pointed out that the majority of the findings were less than 4.5 volts and small in nature.

Table 2: Stray Voltage Findings from Manual Testing Greater Than 4.5 V[9]

2012 Test Cycle					
Company	**Streetlights**	**Underground Distribution**	**Overhead Distribution**	**Transmission**	**Total Findings**
Con Edison	191	9	15	0	215
National Grid	101	0	23	8	132
NYSEG	11	0	28	33	72
RGE	6	0	2	20	28
Central Hudson	0	0	6	0	6
Orange & Rockland	0	0	6	1	7
Municipal Electric Companies	0	0	2	0	2
Total	309	9	82	62	462
2011 Test Cycle					
Company	**Streetlights**	**Underground Distribution**	**Overhead Distribution**	**Transmission**	**Total Findings**
Con Edison	192	14	13	0	219
National Grid	88	0	32	9	129
NYSEG	29	0	40	4	73
RGE	2	0	4	15	21
Central Hudson	3	1	17	0	21
Orange & Rockland	2	0	10	0	12
Municipal Electric Companies	0	0	5	0	5
Total	316	15	121	28	480

Overall, the manual stray voltage testing results and findings reported in 2012 were similar to those of 2011. With the manual stray voltage testing requirements changing from every year to every five years in 2013, the annual numbers will lessen in comparison to previous years. Based on the historical results and the majority of the

findings being below 4.5 volts, however, the testing efforts going forward will provide an effective and efficient testing program by the utilities, without reducing the level of safety to the people of New York.

Mobile Detection Program

Since the Commission Order in Case 07-M-0523,[9] Con Edison has been required to complete 12 system scans on an annual basis. In June 2011, the Commission ordered two surveys in Buffalo and one each in Yonkers, White Plains, Albany, Niagara Falls, Rochester, and New Rochelle. The vast majority of the stray voltage findings are low voltage in nature (1.0-4.4V) and attributed to Street Lights/Traffic Signals, followed by Non-Utility Facilities, as was the case in previous years. The results of the scans completed in 2012 are summarized in Tables 3, 4, and 5 below.

Table 3: Findings by Con Edison Utilizing Mobile Detection - Test Cycle (New York City)

City	Facility	1.0-4.4V	4.5-24.9V	>25V	Total
2012 Test Cycle					
New York City	Distribution	2	0	1	3
(12 scans)	Underground	210	95	10	315
	Street Lights/Traffic Signals	1,134	466	258	1,858
	Non-Utility Facilities	2,716	1,317	272	4,305
Total		4,062	1,878	541	6,481
2011 Test Cycle					
New York City	Distribution	6	1	0	7
(12 scans)	Underground	311	113	26	450
	Street Lights/Traffic Signals	1,333	585	320	2,238
	Non-Utility Facilities	3,573	1,545	368	5,486
Total		5,223	2,244	714	8,181

Table 3 shows the results from Con Edison's 12 New York City scans. Mobile scans were also completed in its other territories (Yonkers, White Plains, and New Rochelle) required by the Safety Standards in 2012. The rate of findings in New

[9] Consolidated Edison Company of New York, Inc., Order Establishing Rates for Electric Service (issued March 25, 2008).

York City and the other areas tested by Con Edison continues a steady decline from the initial mobile surveys. Staff is encouraged by this trend and expects similar results in future years.

Table 4: Findings by National Grid Utilizing Mobile Detection - Test Cycle (Buffalo)

City	Facility	1.0-4.4V	4.5-24.9V	>25V	Total
2012 Test Cycle					
Buffalo	Distribution	0	0	0	0
(scan 1)	Underground	0	0	0	0
	Street Lights/Traffic Signals	220	63	19	302
	Non-Utility Facilities	10	3	1	14
	Subtotal	230	66	20	316
Buffalo	Distribution	0	0	0	0
(scan 2)	Underground	0	0	0	0
	Street Lights/Traffic Signals	184	55	4	243
	Non-Utility Facilities	15	2	0	17
	Subtotal	199	57	4	260
Total		429	123	24	576
2011 Test Cycle					
Buffalo	Distribution	0	0	0	0
(scan 1)	Underground	0	0	0	0
	Street Lights/Traffic Signals	556	118	12	686
	Non-Utility Facilities	17	6	5	28
	Subtotal	573	124	17	714
Buffalo	Distribution	0	0	0	0
(scan 2)	Underground	0	0	0	0
	Street Lights/Traffic Signals	463	80	7	550
	Non-Utility Facilities	12	3	1	16
	Subtotal	475	83	8	566
Total		1048	207	25	1280

As shown in Table 4, the rate of findings with respect to National Grid in the City of Buffalo, identified as a problem area in previous surveys, continues a steady decline from the initial survey in 2009. National Grid has implement a comprehensive street light program to proactively replace antiquated cable and ductwork that serve the street lighting system throughout the entire city of Buffalo. Staff believes that by

addressing the root cause of the problem, this effort by National Grid will result in continued improvement in the rate of findings going forward. The Company will file an annual update plan on these efforts and Staff will monitor and evaluate the effectiveness and efficiency of the program going forward.

Table 5: Findings by RGE Utilizing Mobile Detection – Test Cycle (Rochester)

City	Facility	1.0-4.4V	4.5-24.9V	>25V	Total
2012 Test Cycle					
Rochester	Distribution	0	0	0	0
	Underground	0	0	0	0
	Street Lights/Traffic Signals	17	4	1	22
	Non-Utility Facilities	0	0	0	0
Total		17	4	1	22
2011 Test Cycle					
Rochester	Distribution	0	0	0	0
	Underground	1	3	0	4
	Street Lights/Traffic Signals	304	25	9	338
	Non-Utility Facilities	17	11	1	29
Total		322	39	10	37

As shown in Table 5, findings in the City of Rochester experienced a decline from 2011 to 2012, which can be ascribed to the fact that testing was performed during ideal weather conditions during the fall of 2012. Additionally, RGE employed a new contractor that used a certified, but different testing device in 2012. Staff discussed the 2012 results with RGE and determined that the Company's and its contractors' efforts were acceptable; however, the Company needed to further define its mobile stray voltage testing requirements and procedures for future testing efforts. Staff will monitor the Company's development of appropriate stray voltage testing requirements and procedures.

SHOCK REPORTS

In addition to testing programs, the utilities are made aware of potential stray voltage locations from reports by the public. Utilities are required to respond to and investigate all shock reports received, including reports involving domestic animals, regardless of whether or not injuries are involved. Table 6 provides a summary for 2012 and 2011 of the electric shock reports received by the utilities where investigation yielded actual voltage findings. The table also classifies the shock reports based on the source of the stray voltage. Investigations of shock reports where the cause of the voltage was determined to be the responsibility of the utility are classified as company responsibility. Customer responsibility issues include shock incidents that are caused by non-utility facilities or the improper use of customer-owned equipment.

It should be noted that the number of shock reports attributed to utility facilities has remained relatively flat over the last several years, however, in 2012 there was an overall 25% drop in reported shock incidents from 2011. With only 68 shock incidents reported that were found to be the utility's responsibility, it is the lowest number of shock incidents since 2009. National Grid and Con Edison are still reporting the highest number of shock incidents among the electric utilities. Our analysis indicates that many of these calls can be traced to individuals contacting normally energized equipment while performing maintenance work on their homes or businesses.

Table 6: Summary of Shock Reports

2012			
Company	**Shock Reports**	**Company Responsibility**	**Customer Responsibility**
Con Edison	54	15	39
National Grid	71	29	42
NYSEG	12	6	6
RGE	3	2	1
Central Hudson	22	4	18
Orange & Rockland	22	12	10
Municipal Electric Companies	1		1
Total	185	68	117
2011			
Company	**Shock Reports**	**Company Responsibility**	**Customer Responsibility**
Con Edison	79	27	52
National Grid	119	41	78
NYSEG	25	10	15
RGE	3	0	3
Central Hudson	18	5	13
Orange & Rockland	10	7	3
Municipal Electric Companies	2	0	2
Total	256	90	166

INSPECTIONS OF ELECTRIC FACILITIES

The inspection process involves visual inspection of electric facilities to identify any damage that may cause hazardous conditions or reliability concerns. Inspections are performed by a combination of company employees and contractors, all of whom first receive training including instruction on the common grading system. If an inspection reveals a deficiency, the safety standards require utilities to make all repairs necessary to eliminate the deficiency based upon its severity:

- Level I discoveries must be fixed within one week of discovery,
- Level II discoveries must be fixed within one year of discovery,
- Level III discoveries must be fixed within three years of discovery, and
- Level IV conditions do not require repair but are identified to be monitored.

The Safety Standards also require a detailed reporting system that captures deficiencies by equipment type (poles, transformers, cable), priority level, whether actions have been taken, and the timeliness of the repair activities in relation to the assigned priority level.

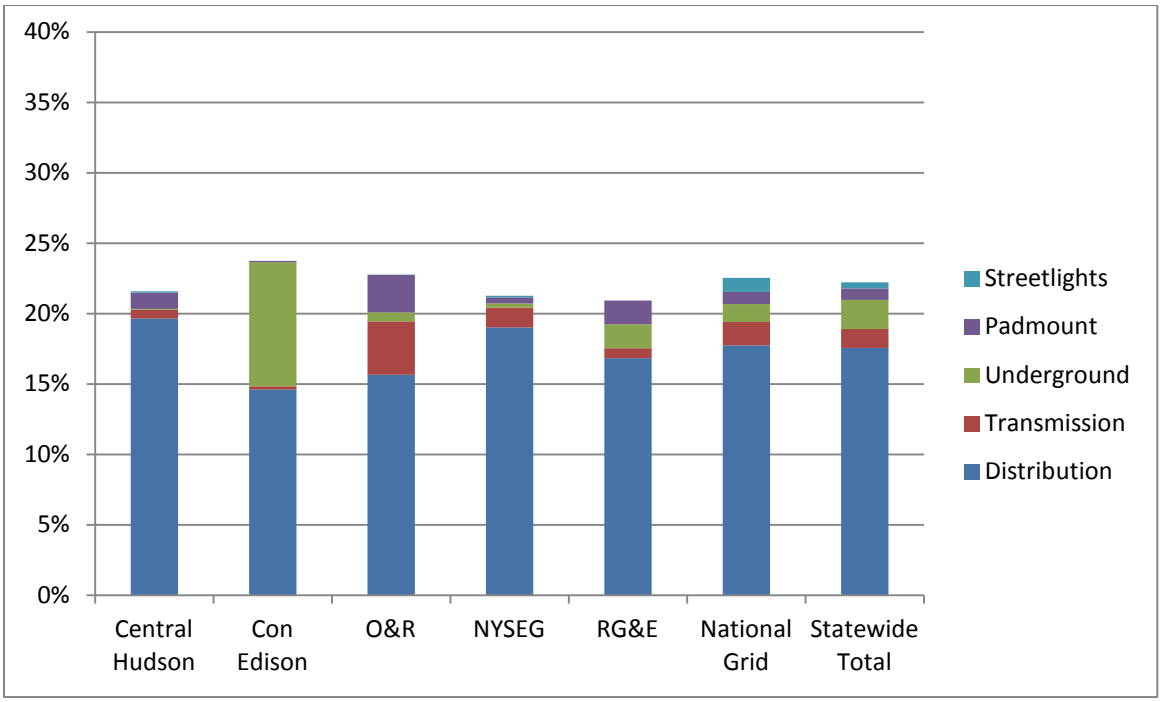
Inspections

The Electric Safety Standards require utilities to complete inspections on 20% of their total facilities each year, so that 100% of a utility's transmission and distribution facilities will be inspected at least once every five years.

Statewide, the investor-owned utilities inspected approximately 22% of their electric facilities in 2012. Approximately 644,000 inspections were performed on the overhead distribution system; the bulk of which were completed by National Grid and NYSEG (approximately 267,000 and 178,000 respectively). Con Edison, Central Hudson, RGE, and Orange & Rockland completed approximately 81,000, 46,000, 46,000, and 27,000 inspections on their overhead distribution facilities, respectively.

Figure 1 shows the percentage of visual inspections completed for each of the investor-owned utilities by facility type. All utilities met or exceeded the 20% inspection target during the 2012 cycle. Both Central Hudson and Orange & Rockland are well ahead of targeted expectations having completed inspections on 78% and 75% of its facilities after the third full year of the five year cycle.

Figure 1: Percentage of Visual Inspections Completed
Investor-Owned Utilities (Third Year of Five-Year Cycle)



Although statewide the Companies are meeting our overall expectations, we are concerned again this year with the percentage of inspections completed on underground distribution facilities by Con Edison. In January of 2013, Con Edison filed a request for a six month extension on its five year inspection program, identifying Superstorm Sandy as the reason for falling behind and not being able to complete its inspections by the end of 2015. Based on the facts presented and analysis of the data, the Commission granted an extension of three months instead of six months to Con Edison at the April 2013 session. This extension allows the Company to make up the time lost during Superstorm Sandy, while requiring the Company to complete 100% of its system inspections by March 31, 2016. Although the Company's inspection rate nearly doubled from 2011 to 2012, Con Edison's cumulative inspection rate for underground facilities continues to be more than 10% below what is expected for this category in the third year of this five year cycle, to comply with the Safety Standards. This is similar to Con Edison's performance in the first five year cycle as required by the Safety Standards in which Con Edison had to accelerate underground inspection activities and associated

expenditures in the last two years of the cycle to complete 100% of its facilities within the required five years. Staff will continue to monitor this area of concern with Con Edison.

Inspection Findings

In 2012 inspections were performed on approximately 816,000 facilities across the State. Inspections performed in 2011 totaled approximately 806,000. Table 7 provides a summary of deficiencies for 2012 and 2011 by company and facility type. As shown in the table, there were across the board increases in the number of deficiencies in all inspection categories, yielding a total increase of 37%. This trend was manifested most significantly in OH distribution, which accounted for a 35% increase in deficiency findings.

Table 7: Deficiencies by Facility Type Found by Investor Owned Utilities[10]

2012 Inspection Cycle						
Company	**Underground**	**Distribution**	**Transmission**	**Pad Mount**	**Street Lights**	**Total**
Con Edison	49,615	9,304	126	n/a	n/a	59,045
National Grid	1,934	57,327	3,881	340	547	64,029
NYSEG	549	14,748	799	534	21	16,651
RGE	109	1,270	86	200	0	1,665
Central Hudson	28	1,568	92	100	0	1,788
Orange & Rockland	17	2,797	98	188	0	3,100
Total	52,252	87,014	5,082	1,362	568	146,278
2011 Inspection Cycle						
Company	**Underground**	**Distribution**	**Transmission**	**Pad Mount**	**Street Lights**	**Total**
Con Edison	26,082	8,335	299	n/a	n/a	34,716
National Grid	2,193	43,351	2,938	1,411	733	50,626
NYSEG	15	2,896	662	196	2	3,771
RGE	98	315	77	176	0	666
Central Hudson	14	2,146	70	62	0	2,292
Orange & Rockland	31	703	332	52	0	1,118
Total	28,433	57,746	4,378	1,897	735	93,189

An examination of the data in Table 7 indicates a marked increase in deficiencies attributed to Distribution facilities for National Grid and NYSEG in 2012 as compared with 2011. With respect to National Grid, the increase was primarily driven by an internal assessment of the inspection program that led to greater awareness of grounding and bonding issues and identifying pole conditions in the field. For NYSEG the implementation of a new data acquisition system that itemizes individual deficiencies rather than attributing multiple conditions to a single facility was the major cause of the increase. The Company also reports that in 2012 it began using a contractor for all

[10] In Table 7, deficiencies for Con Edison's Pad Mount category are included in the totals for Underground facilities.

inspection functions, which it asserts results in a more comprehensive and consistent evaluation through increased training.

Table 8: Summary of Deficiencies by Severity Level Found by Investor Owned Utilities

2012 Inspection Cycle						
Level	**Underground**	**Distribution**	**Transmission**	**Pad Mount**	**Street Lights**	**Total**
I	4,467	580	23	261	0	5,331
II	43,060	36,628	756	335	552	81,331
III	4,725	49,806	4,303	766	16	59,616
Total	52,252	87,014	5,082	1,362	568	146,278
2011 Inspection Cycle						
Level	**Underground**	**Distribution**	**Transmission**	**Pad Mount**	**Street Lights**	**Total**
I	16,204	603	41	122	1	16,971
II	8,509	27,524	561	549	720	37,863
III	3,720	29,619	3,776	1,226	14	38,355
Total	28,433	57,746	4,378	1,897	735	93,189

Table 8 lists the number of deficiencies found in 2012 by severity level and facility type. The table also contains the 2011 information for comparison. A Level I deficiency is a safety hazard or poses an immediate threat to the delivery of power; Level I deficiencies could include limbs on the primary wire, oil leaks, or the conductor lying directly on a cross arm. In 2012, the investor-owned utilities reported finding 5,331 Level I deficiencies. A comparison of the Level I deficiencies showed that among the electric utilities Con Edison had the biggest impact on the number of deficiencies found in 2012. The decrease in the number of Level I conditions can be attributed to a change in categorization for two types of repairs prevalent on the system: Improperly Sealed Cable Ends and Unsealed Ducts. Prior to 2012, Con Edison typically classified these repairs as Level I, a decision driven more by the company attempting to gain efficiencies when affecting the repairs than by the severity of the condition. After discussion with Staff the company agreed to categorize these deficiencies as Level II going forward to more accurately capture the data in the context of the standards.

The investor-owned utilities identified 81,331 Level II deficiencies in 2012,

a significant increase from 2011. This increase can be attributed to the change in categorization by Con Edison as explained above. Examples of Level II deficiencies include damaged underground covers, damaged cross arms, rotted or seriously damaged poles.

As can be seen from Table 8, the number of Level III deficiencies increased by 35% from 2011. This increase was driven mainly by a significant increase in deficiencies noted in Overhead Distribution for NYSEG and National Grid, explained in more detail above.

In 2012, the municipal electric companies reported a combined total of 360 deficiencies. This is a 70% reduction from the 1423 deficiencies reported in 2011, continuing the decline from 2010. All of the deficiencies were classified as part of the overhead distribution system.

Repairs

In general, the utilities maintain an acceptable level of response to Level I deficiencies. The repair must be considered a permanent repair to be removed from the Level I priority list. In 2012, the utilities reported repairing more than 99% of Level I deficiencies; 98% were repaired within the one week time requirement, improvements over the 2012 rates of 97.6% and 95.6%, respectively. Remaining Level I deficiencies awaiting repair were made safe.

Statewide, the investor-owned utilities reported repairing 22% of Level II and 11% of Level III deficiencies found in 2012. For deficiencies found in 2012, 24% of Level II and 8% of Level III deficiencies were repaired with repair timeframes beginning as of the date of initial discovery. For example, if a Level III deficiency was found on December 31, 2012, the company would have until December 30, 2015 to complete the repair. As a result, the utilities have the opportunity to make Level II and Level III repairs before they are considered overdue. Table 9 lists the number of Level II and Level III repairs completed in 2012 and the number of repairs recorded as outstanding on December 31.

Table 9: Level II/III Repair Activity by Investor Owned Utilities

2012 Deficiency Findings				
	Level II		Level III	
Company	**Repaired**	**Outstanding**	**Repaired**	**Outstanding**
Con Edison	3,651	3,025	1,825	11,063
National Grid	6,846	28,518	1,418	26,765
NYSEG	175	2,381	176	13,214
RGE	206	94	547	793
Central Hudson	52	67	1,001	616
Orange & Rockland	4	890	12	1,988
Total	10,934	34,975	4,979	54,439
2011 Deficiency Findings				
	Level II		Level III	
Company	**Repaired**	**Outstanding**	**Repaired**	**Outstanding**
Con Edison	4,772	2,838	1,973	9,011
National Grid	3,016	25,049	647	21,424
NYSEG	179	1,253	172	1,991
RGE	192	198	123	107
Central Hudson	66	79	1,133	926
Orange & Rockland	22	201	83	742
Total	8,247	29,618	4,131	34,201

National Grid's performance with respect to repairs on Level II and Level III findings has improved from its 2011 levels. The Company completed repairs on 24% of its Level II conditions and 5% of its Level III conditions in 2012, up from 115 and 3% in 2011. We are encouraged that the Company is devoting additional time and resources to reduce backlog, but we will continue to monitor this area and expect continued gains. Staff has been in discussions with ORU on its Level III transmission repair backlog that accounts for the majority of the overdue repairs identified for the Company in Table 9. Due to its limited relatively small size, ORU inspects its transmission system every year, instead of the required once every five years. Due to outage scheduling and efficiency of workforce, however, the Company has approximately 1,700 Level III overdue transmission repairs that were originally identified in 2009. Since the initial identification of these deficiencies in 2009, the Company has continued to inspect them

every year to ensure they do not worsen or degrade. The Company has developed a preliminary plan to complete this backlog of repairs by 2016 which would save a considerable amount over that which it would need to spend to complete the repairs by the end of 2013 as required. Staff will continue to monitor and follow up on this issue with ORU to ensure the repair efforts continue in an effective and efficient manner without jeopardizing public safety or system reliability.

Table 10: Overdue Repairs for Investor Owned Utilities

2012 Overdue Repairs		
	Level I	
Company	**Repaired**	**Not Repaired**
Con Edison	222	44
National Grid	2	0
NYSEG	46	6
RGE	3	1
Central Hudson	0	0
Orange & Rockland	0	0
Total	273	45
2011 Overdue Repairs		
	Level I	
Company	**Repaired**	**Not Repaired**
Con Edison	266	444
National Grid	6	0
NYSEG	24	4
RGE	6	1
Central Hudson	1	0
Orange & Rockland	0	0
Total	303	449

Overall, we are pleased with the repair performance of the utilities, as the number of Not Repaired overdue conditions is small relative to the number of deficiencies identified, as can be seen in Table 10. It should also be noted that Con Edison is making a concerted effort to minimize their Not Repaired totals which is resulting in the dramatic drop from 2011 to 2012.

CERTIFICATION AND PERFORMANCE MECHANISM

To ensure the utilities maintain the necessary focus on the safety and reliability of their electric systems, the Electric Safety Standards require an officer of each company to annually certify the results of the testing and inspection programs. Each of the utilities provided signed statements certifying that it performed the requisite number of stray voltage tests and inspections in 2012.

The Electric Safety Standards also establish a performance mechanism to ensure compliance by utilities with the Electric Safety Standards. This mechanism includes two annual performance targets, one for stray voltage testing and one for facility inspections. Given the safety concerns associated with stray voltage, the target is set at 100% of all facilities that must be tested. The inspection target is set at 95% of the annual requirement. The performance mechanism does require all facilities to be inspected by the end of the fifth year of the cycle. Failure to meet a performance target will result in a negative 75 basis point revenue adjustment (total adjustments of 150 basis point maximum for failure to achieve both performance targets in one year). The 2012 performance results are summarized in Table 11 below. All utilities achieved the target levels prescribed, and as a result no revenue adjustments are applicable.

Table 11: Statewide Stray Voltage and Facility Inspection Target and Actual Performance

	Stray Voltage		Inspections	
Company	**Target**	**Actual**	**Target**	**Actual**
Con Edison	100%	100%	19%	24%
National Grid	100%	100%	19%	22%
NYSEG	100%	100%	19%	21%
RGE	100%	100%	19%	21%
Central Hudson	100%	100%	19%	21%
Orange & Rockland	100%	100%	19%	20%

COMPLIANCE MONITORING

To ensure proper compliance with the Electric Safety Standards, Staff maintained frequent contact with all the utilities, individually and collectively, over the

past six years. In early 2005, the investor-owned utilities formed a working group to collectively discuss issues related to stray voltage testing. The working group has proven to be an effective means to raise and resolve issues, identify best working practices, and establish a common understanding of the extent of stray voltage across the State. Since 2005 the discussions have evolved from addressing implementation issues, such as data collection, to focusing more on stray voltage mitigation efforts, alternative testing equipment, and repair activities. Staff actively participates in the working group sessions, which are held quarterly. These sessions have helped the utilities maintain an overall understanding of Staff's expectations and identify best working practices.

Electric Safety Standard compliance monitoring is also performed through field visits. The focus of the visits is to ensure that stray voltage testing, inspections, and the quality assurance programs are being completed properly. Specifically, Staff verifies that utilities located and tested required facilities for stray voltage. The field visits also enable Staff to monitor the quality assurance programs, and afford Staff the opportunity to randomly sample the utility's testing and inspection records to verify the accuracy of data collected by the utilities.

To further verify the accuracy of utility inspections, Staff also obtains inspection and Quality Assurance/Quality Control (QA/QC) data from the utility and performs a side-by-side comparison of the utility's results with data collected during Staff's inspections. Staff follows up with the Utilities by notifying them of any conditions which are noted in Staff's results, but not shown on utility data. The utility is then expected to appropriately reconcile the discrepancy, with Staff's continuing oversight.

CONCLUSION

All of the utilities are in compliance with the testing requirements of the Electric Safety Standards. Stray voltage testing was performed on approximately four million facilities across the state in 2012. All of the utilities are also in compliance with the inspection requirement for the third year of the second cycle; in total approximately 816,000 facilities were visually inspected in 2012. Since all of the requirements were met, no revenue adjustments should be imposed.

The requirements of the Electric Safety Standards have resulted in the identification of locations with stray voltage levels where mitigation was necessary to maintain public safety. The standards are an effective means to ensure the safe and reliable operation of the electric system. Stray voltage attributable to streetlights continues to be a major concern. Based on the results observed to date, stray voltage testing is needed to continue for these facilities to identify potentially unsafe conditions. Staff also encourages the utilities to continue their development of programs focused on known areas of concern, such as streetlights.

The inspection requirements have also resulted in the identification of numerous substandard conditions of the state's electric facilities. The majority of the serious deficiencies found in 2011 and 2012 have been permanently repaired. Overall, Staff is satisfied with the effort put forth by the utilities in repairing deficiencies. Repair efforts on Level II and Level III deficiencies will continue to be monitored to ensure repairs are made within the designated timeframes.

Respectfully submitted,

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