

STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

June 4, 2010

TO: THE COMMISSION

FROM: OFFICE OF ELECTRIC, GAS, AND WATER

SUBJECT: Case 10-E-0273 – 2009 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 streetlights² along public thoroughfares for stray voltage, regardless of ownership. This testing is generally a manual process performed using handheld devices (manual testing). In areas served predominantly by underground facilities, it is also acceptable for utilities to use mobile testing instead of manual testing. Based on this, in December 2008, the Commission amended the Electric Safety Standards to permit mobile testing as

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.

an alternative means of compliance.³ The Commission also ordered all electric utilities to complete an initial mobile stray voltage detection survey of their underground electric distribution systems, in appropriate areas of certain large cities,⁴ during calendar year 2009 to positively identify those areas that can be effectively surveyed using that technology. The results of that testing as well as recommendations on future testing requirements are addressed in a companion memo.

This memorandum will report on the utilities compliance with the safety standards. Except for Consolidated Edison Company of New York, Inc. (Con Edison), all utilities that were required to perform mobile testing in compliance with the Commission Order also completed manual testing in those areas. During calendar year 2009, Con Edison completed twelve mobile surveys of its underground network distribution system, which includes areas in Manhattan, the Bronx, Queens, and Brooklyn. In these areas Con Edison utilized mobile testing as a means of compliance and did not perform manual testing.

Manual stray voltage testing was performed on approximately 4 million facilities statewide in 2009, with 2,007 stray voltage findings identified; 1,963 were found by the investor-owned utilities⁵ and the remaining 44 were found by the municipal electric utilities. Of the total stray voltage findings, 873 (43%) were at voltage levels of 4.5 V or higher.⁶ Findings on streetlights accounted for 621 (71 %) of the conditions at voltage levels of 4.5 V or higher.

³ 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).

⁴ Incorporated cities with a population of at least 50,000 (based on the results of the 2000 census)

⁵ The investor-owned utilities consist of Con Edison, Central Hudson Gas & Electric Corporation (Central Hudson), New York State Electric & Gas Corporation (NYSEG), Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), Rochester Gas and Electric Corporation (RGE), and Orange and Rockland Utilities, Inc. (Orange & Rockland).

⁶ As a result of the revision to the lower detection threshold, readings below 4.5V are now considered low voltage in nature.

In 2009, there were 167 calls from customers reporting shock incidents that resulted in confirmed cases of stray voltage; 50 were caused by problems with utility facilities and 117 were traced to faulty customer equipment or wiring. The total of 167 in 2009 was significantly lower when compared to the 286 calls received in 2008.

Stray voltage found on streetlights continues to be a major concern, particularly in Con Edison's service territory, as demonstrated by the findings at levels greater than 4.5 V, as detailed in Table 4. Based on the results observed to date, stray voltage testing is needed to continue 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 Electric Safety Standards also require that each utility visually inspect⁷ at least 20% of its electric facilities per year and all facilities within 5 years. Calendar year 2009 marked the fifth year of this required inspection cycle and the first year under the revised standards regarding repair activities. As a result of the inspection program, all electric facilities owned by investors and regulated municipalities have been inspected. In 2009, the investor-owned utilities identified approximately 160,000 deficiencies.⁸ In addition to changes related to stray voltage, the December 2008 Order added requirements to repair and track activities taken in response to deficiencies found during the inspection process. All higher level deficiencies found in 2009 have been permanently repaired. The lower level deficiencies identified in 2009, whose repair timeframes are from one to three years, were either repaired (27%) or entered into work order systems for tracking and repair. In general, the visual inspection program has had a positive impact that raised the level of awareness of all involved.

⁷ An inspection requires a qualified 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.

⁸ Con Edison also identified and corrected approximately 256,000 conditions related to preventative maintenance work in 2009.

Through the experiences gained over the past five years, Staff and the investor-owned utilities have identified several areas for improvement. New reporting and recordkeeping requirements became effective with the 2009 inspection cycle. The effort put forth by the investor-owned utilities pertaining to reporting and recordkeeping has met Staff's expectations. Several municipal utilities, however, are having a more difficult time adjusting to the revised reporting and recordkeeping requirements. Consistent and accurate information is necessary to ensure compliance with the Electric Safety Standards. Therefore, we will continue to work with the municipal utilities to improve these practices. Adherence to defined classification levels during the next five-year cycle, and following the structured forms outlined in the Order, will generate manageable and comparable data in future inspection cycles.

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 enhancing 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 accessible to the public, using certified voltage detection devices; (2) inspections 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.

In December 2008, the Commission adopted several revisions to the Safety Standards. The revised standards became effective for the 2009 testing and inspection cycle. The major changes with respect to stray voltage testing involved the addition of a definition of a stray voltage finding,⁹ along with a requirement to mitigate all such findings, enhanced testing protocols for locations where voltage findings are encountered,

⁹ 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.

and a revision from 8 V to 6 V as the lower threshold of the range for stray voltage testing equipment. Clarification of reporting formats was also included to foster consistency in the manner in which data is cataloged and transmitted to Staff.

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 the past, utilities individually defined unique ranking systems, but by initiating a common grading system, it is easier to manage and compare submitted utility results. This grading system establishes expected timeframes for repairs based on the estimated amount of time that it would take for the equipment to fail and adversely affect public safety or the reliability of the utility system. These rankings correspond to the condition levels, which are described as follows: Level I discoveries must be fixed within one week, Level II discoveries must be fixed within one year, Level III occurrences must be fixed within three years of the initial discoveries, and Level IV which are conditions that do not require repair at this time but should be tracked for monitoring purposes. This Order also calls for temporary repairs to be made within 90 days (longer only if there are extraordinary circumstances, such as storms) and that these repairs are documented and entered into the utilities' tracking systems.

STRAY VOLTAGE TESTING

Table 1 lists the number of stray voltage findings of 1 V or above in 2009 resulting from manual testing, by facility type.¹⁰ Stray voltage testing was performed on approximately 4 million transmission and distribution facilities across the State. Table 2 contains the same information for the year 2008 for comparison. In these tables, Overhead Distribution includes substation facilities, and Transmission includes both overhead and underground facilities.

¹⁰ 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 performed by Con Edison (described in a subsequent section)

**Table 1: Stray Voltage Findings from Manual Testing by Facility Type
2009 Test Cycle**

Company	Streetlights	Underground Distribution	Overhead Distribution	Transmission	Total Findings
Con Edison	414	6	18	0	438
National Grid	350	3	178	39	570
NYSEG	24	0	163	69	256
RGE	62	1	55	139	257
Central Hudson	12	7	381	17	417
Orange & Rockland	1	1	23	0	25
Municipal Electric Utilities	6	5	33	0	44
Total	869	23	851	264	2007

**Table 2: Stray Voltage Findings from Manual Testing by Facility Type
2008 Test Cycle**

Company	Streetlights	Underground Distribution	Overhead Distribution	Transmission	Total Findings
Con Edison	495	5	7	0	507
National Grid	433	7	198	40	678
NYSEG	91	2	681	312	1086
RGE	75	0	70	135	280
Central Hudson	8	11	508	6	533
Orange & Rockland	1	1	31	0	33
Municipal Electric Companies	23	8	33	0	64
Total	1126	34	1528	493	3181

Note: In tables 2 and 3, Overhead Distribution includes substation facilities, and Transmission includes both overhead and underground facilities.

In 2009, stray voltage findings were obtained on 0.06% of total utility facilities tested. Individual detection rates for underground distribution, overhead distribution, and transmission are 0.007%, 0.019%, and 0.23%, respectively. The

municipal electric utilities identified 44 stray voltage findings related to overhead distribution facilities, which equates to a detection rate of 0.03%.

The rate of findings declined in all categories from 2008 to 2009, most notably in the areas of overhead distribution and transmission, which experienced reductions of approximately 45%. Of the 2,007 stray voltage conditions found via manual testing on transmission and distribution facilities, 1,134 were low voltage in nature (less than 4.5 V). Table 3 details the findings above 4.5 V.

**Table 3: Stray Voltage Findings from Manual Testing Greater Than 4.5 V
2009 Test Cycle**

Company	Streetlights	Underground Distribution	Overhead Distribution	Transmission	Total Findings
Con Edison	363	34	24	0	421
National Grid	209	2	47	3	261
NYSEG	17	0	33	21	71
RGE	21	1	10	49	81
Central Hudson	10	0	19	1	30
Orange & Rockland	1	1	3	0	5
Municipal Electric Companies	0	0	4	0	4
Totals	621	38	140	74	873

Supplemental Mobile Detection Program

In 2005, Con Edison purchased five mobile survey vehicles and began using mobile detection to test for stray voltage in addition to the manual testing required by the Electric Safety Standards, at that time. The company now has 15 mobile survey vehicles utilized for stray voltage testing. Con Edison completed one system scan in 2005, 1.5 scans in 2006, and 5.5 in 2007. Since the Commission order in Case 07-M-

0523,¹¹ the company has been required to complete 12 system scans on an annual basis. The results of the scans completed in 2009 are summarized in Table 4 below.

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 mentioned above, an amendment was included to permit mobile testing as an alternative means of compliance. In addition, the Commission directed all utilities to conduct mobile stray voltage system surveys in calendar year 2009 in areas of their territories containing underground distribution in incorporated cities with populations of 50,000 or more, based on the 2000 census.¹² The evaluation of these results is included in a companion item.

¹¹ Consolidated Edison Company of New York, Inc., Order Establishing Rates for Electric Service (issued March 25, 2008).

¹² The cities that were included under the requirements of the order were Buffalo, Syracuse, Utica, Albany, Schenectady, Niagara Falls (National Grid); Yonkers, White Plains, New Rochelle, Mount Vernon (Con Edison); and Rochester (Rochester Gas & Electric)

Table 4: Findings by Con Edison Utilizing Mobile Detection - 2009 Test Cycle

	1.0 - 4.4V	4.5V – 24.9V	>25 V	Totals
Distribution Facilities				
Pole	23	12	0	35
Ground	0	0	0	0
Guy	3	0	0	3
Riser	0	0	0	0
Other	0	0	0	0
Underground Facilities				
Service Box	3	0	0	3
Manhole	502	221	43	766
Padmount Switchgear	0	0	0	0
Padmount Transformer	0	0	0	0
Vault – Cover/Door	3	0	0	3
Pedestal	0	0	0	0
Other	0	0	0	0
Street Lights / Traffic Signals				
Metal Street Light Pole	1096	559	384	2039
Traffic Signal Pole	1751	416	63	2230
Control Box	42	17	0	59
Pedestrian Crossing Pole	47	11	1	59
Other	0	0	0	0
Substation Fences				
Fence	0	0	0	0
Other	0	0	0	0
Transmission (Total)				
Lattice Tower	0	0	0	0
Pole	0	0	0	0
Ground	0	0	0	0
Guy	0	0	0	0
Other	0	0	0	0
Miscellaneous Facilities				
Sidewalk	1438	694	174	2306
Gate/Fence/Awning	805	359	113	1277
Traffic Sign	0	0	0	0
Scaffolding	67	21	20	108
Bus Shelter	43	23	3	69
Fire Hydrant	129	30	3	162
Phone Booth	45	23	9	77
Traffic Control Box	0	0	0	0
Water Pipe	0	0	0	0
Riser	0	0	0	0
Other	802	287	90	1179

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, and regardless of whether or not injuries are involved. Tables 5 and 6 provide a summary for 2008 and 2009, of the electric shock reports received by the utilities where investigation yielded actual voltage findings. The tables also classify 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.

Table 5: Summary of Shock Reports in 2009

Company	2009 Shock Reports	Company Responsibility	Customer Responsibility
Con Edison	84	24	60
National Grid	124	38	86
NYSEG	8	0	8
Rochester Gas & Electric	9	2	7
Central Hudson	10	3	7
Orange & Rockland	16	7	9
Municipal Electric Utilities	0	0	0
Total	251	74	177

Table 6: Summary of Shock Reports in 2008

Company	2008 Shock Reports	Company Responsibility	Customer Responsibility
Con Edison	141	36	105
National Grid	124	48	76
NYSEG	2	2	0
Rochester Gas & Electric	0	0	0
Central Hudson	6	0	6
Orange & Rockland	13	7	6
Municipal Electric Utilities	0	0	0
Total	286	93	193

INSPECTIONS OF ELECTRIC FACILITIES

The original intent of the inspection component of the safety standards was to ensure that utilities were checking all transmission and distribution facilities for safety and reliability concerns on a routine basis. In addition to inspections, the standards now require utilities to repair and track activities taken in response to deficiencies found during the inspection process. Requiring inspection, repair, and tracking will promote the correction of non-critical deficiencies, and enhance the overall reliability of the State's electric system.

The Electric Safety Standards require utilities to complete inspections on at least 20% of their total facilities in each year, so that 100% of a utility's transmission and distribution facilities will be inspected at least once every five years. The 2009 inspections conclude the first five-year cycle and all utilities have met the 100% system-wide inspection requirement.

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

discussed above, this process also established expected timeframes for repair based upon the severity of the deficiency as follows:

- 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
- Level IV conditions do not require repair but are identified to be monitored

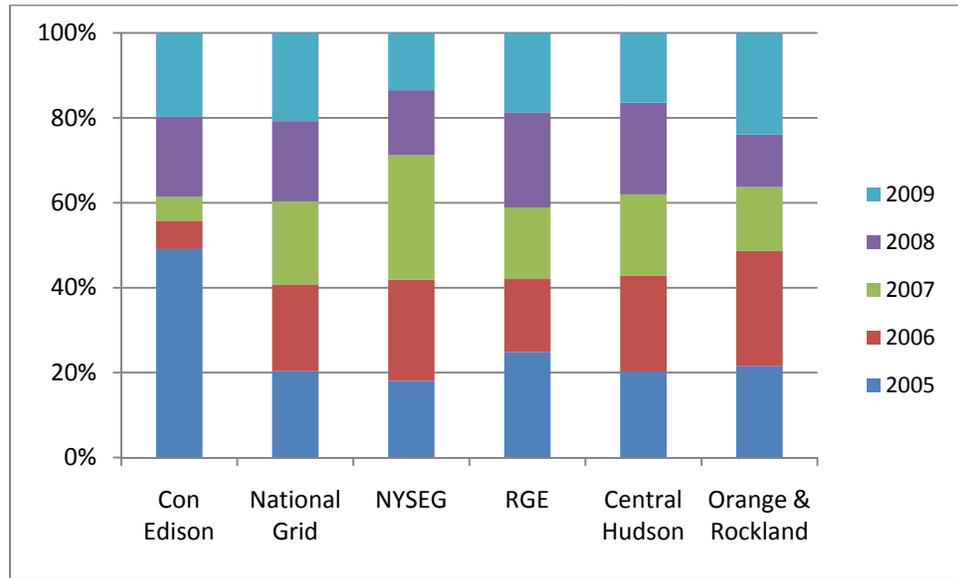
The Commission also adopted a detailed reporting system to capture deficiencies by equipment type (poles, transformers, cable), priority level, whether actions have been taken, and the timeliness of the repair activities in relation to the assigned priority level. In 2009, the investor-owned utilities made several strides to capture the data as required and integrate the inspection process with the repair process.

Inspections

All utilities achieved the overall targets for inspecting their facilities during the first five-year cycle. Figure 1 shows the annual and total percentage of visual inspections for each of the investor-owned utilities. Statewide all of the investor-owned electric facilities have been inspected at least once since 2005. Most investor-owned utilities performed complete inspections of their transmission systems multiple times during the first five-year cycle, given its importance.

National Grid, RGE, and Central Hudson had the most balanced inspection programs throughout the first five-year inspection cycle. Central Hudson saw opportunities for improvement and found a more efficient method of utilizing inspection teams. The Company changed its inspection philosophy from a less organized method of cycling through circuits in different areas to using geographic focused inspection teams.

**Figure 1: Percentage of Visual Inspections
Investor-Owned Utilities**



Although all Companies achieved the 100% target, the percent of inspections completed on underground facilities lagged behind the other classifications during the five-year cycle. Generally underground inspections are more time consuming and conducted by a smaller subset of workers compared to overhead inspections. Covers of underground facilities, and any water or debris within the structure, must be removed prior to the inspection taking place. Con Edison had the most difficulties achieving its underground inspection goals; however, it should be noted that the Company owns more than half of the State’s underground facilities. In 2006 and 2007, Con Edison inspected less than 10% of its underground system per year.¹³ The 2006 inspection cycle was significantly affected by the power outages in the Long Island City section of Queens. In order to fulfill its underground inspection requirements, Con Edison hired outside contractors to supplement its workforce during the 2008 and 2009 cycles. The contractors assisted the Company in completing approximately 90,000 and 66,000 underground inspections in each of the last two years, respectively. To avoid repeating

¹³ Con Edison met the overall 60% goal because it completed 100% of its overhead distribution inspections in 2005.

this situation, Con Edison plans to modify its inspection schedule for its 282,000 underground facilities over the next five-year cycle. The goal is to inspect 60,000 (21%) underground facilities in 2010; 50,000 (18%) in 2011; and 50,000 (18%) in 2012. The Company also plans to complete overhead distribution inspections at a steady pace, compared to its approach used in the first five-year cycle. Staff encourages other utilities to consider this more balanced program approach.

Finally, the completion of the first five-year cycle identified the importance of having an accurate account of system inventories. The electric infrastructure inventory varies over time, with poles and other equipment being added and removed continuously. Other factors, such as storms contribute to the difficulty of keeping an accurate inventory of facilities. As a result, utilities estimated facility inventories to calculate compliance. The use of estimated inventories, however, distorted records and skewed statistics. Over the first five-year cycle the Companies have taken steps to update inventory estimates. Staff believes improvement opportunities still exist to improve accuracy in counting inventories, such as, ensuring system changes are entered into GIS systems on a timely basis, and encourages utilities to take steps to do so.

Repairs

The newly established repair and reporting requirements became effective for the 2009 inspection cycle. In 2009, approximately 960¹⁴ Level I deficiencies were found by the investor-owned utilities. The utilities reported repairing 91% of the Level I deficiencies within the one week time requirement. Paper records were reviewed by the utilities to identify the root cause of the problems or events associated with the Level I deficiencies recorded as overdue repairs. The utilities determined that some of the deficiencies were made safe with temporary repairs within the one week time requirement and the permanent repairs were made within 90 days. Since the Safety Standards require utilities to make all repairs necessary to eliminate a deficiency, the

¹⁴ This number excludes approximately 256,000 conditions found by Con Edison which required preventative measures at the time of inspection. Examples include the installation of cable caps (138,885) and unsealed ducts (109,915).

repair must be considered a permanent repair to be removed from the Level I priority list. Clerical errors and data transfer errors accounted for 82% of the deficiencies recorded as overdue repairs. Some of these deficiencies were actually repaired within the one week timeframe and the overdue duration for all averaged less than 8 days. All Level I conditions have been permanently repaired.

In 2009, the investor-owned utilities have identified approximately 159,000 Level II and Level III (Level II/III) deficiencies. Overhead distribution facilities accounted for roughly 62% of all Level II/III deficiencies. National Grid has 73% of the statewide overhead distribution deficiencies; but, the Company also owns almost half of the State’s overhead distribution system. Underground facilities totaled approximately 31% of Level II/III deficiencies. Most were located in Con Edison (84%) territory. Con Edison owns approximately 56% of the State’s underground distribution facilities. Table 7 summarizes Level II/III deficiencies for all investor-owned utilities as of December 31, 2009.

**Table 7: Level II/III Deficiencies Found in 2009
By Investor-Owned Utilities**

	Distribution	Underground	Street Lights	Transmission	Total
Level II	21,669	40,486	319	1,007	63,481
Level III	76,290	8,123	4,115	7,082	95,610
Total	97,959	48,609	4,434	8,089	159,091

As previously mentioned, repair timeframes begin at the date of initial discovery. For example, if a Level II deficiency was found on October 31, 2009, the Company would have until October 30, 2010 to complete the repair. As a result, the utilities still have time to make repairs before they are considered overdue. Our analysis of repairs made thus far for deficiencies found in 2009, show National Grid and Orange & Rockland have not been as responsive in repairing Level II/III deficiencies when compared to the other utilities. Therefore, National Grid and Orange & Rockland need to increase their efforts in the coming months to ensure repairs are completed within the required timeframes.

To the extent practical, utilities should develop work packages to perform the repairs in an efficient manner. In addition, accomplishing future repairs activities could be affected by unexpected events such as winter storms. By properly planning for them in advance we expect, the utilities should be able to comply with the Commission's requirements despite experiencing unexpected events during the year.

Municipals

More than 38 cities, towns, and villages in New York State use electricity that comes from a regulated municipal operated utility. These municipal electric utilities own approximately 1.7% of the State's electric facilities and serve approximately 2% of the State's electric customers. Most municipal electric utilities are responsible for only the distribution of electricity to residents and do not own transmission facilities. All municipal utilities have met the five-year 100% system wide inspection requirement. Their smaller size made it possible for most municipal utilities to inspect their complete system multiple times during the first five-year cycle. Deficiencies in 2009 totaled 2.32% of the total municipal facilities and most were repaired when found.

As previously mentioned, the standards require utilities to track and report on activities. Several municipal utilities, however, are having a difficult time adjusting to the revised tracking and reporting requirements. Adherence to defined classification levels during the next five-year cycle, and following the structured forms outlined in the Order, will generate manageable and comparable data in future inspection cycles. Therefore, we will continue to work with the municipal utilities to improve these practices.

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 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 2009.

The Electric Safety Standards also establish a performance mechanism for the utilities to ensure compliance with the Electric Safety Standards. This mechanism includes two annual performance targets, one for stray voltage testing and one for facility inspections. Failure to meet a performance target would result in a 75 basis point revenue adjustment (total adjustments of 150 basis point maximum). As shown in Table 8, all of the utilities achieved the target levels prescribed, and as a result no revenue adjustments will be imposed.

Table 8: Statewide Stray Voltage and Facility Inspection Target and Actual Completions

Company	Stray Voltage		Facility Inspections	
	Target	Actual	5 th Year Composite	Actual
Con Edison	100%	100%	100%	100%
Orange & Rockland	100%	100%	100%	100%
National Grid	100%	100%	100%	100%
NYSEG	100%	100%	100%	100%
RGE	100%	100%	100%	100%
Central Hudson	100%	100%	100%	100%

COMPLIANCE MONITORING

To ensure proper compliance with the Electric Safety Standards, Staff has maintained frequent contact with all the utilities, individually and collectively, over the past five 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. The discussions have evolved over the years from addressing implementation issues, such as data collection, to focusing more on stray voltage mitigation efforts, and alternative testing equipment.

Staff actively participates in the working group sessions. Currently, group discussions are held quarterly. These activities have helped the utilities maintain an overall understanding of Staff’s expectations from the Electric Safety Standards and an

understanding of the extent of stray voltage in New York State. In addition to discussing issues related to the Order, the meetings have proven to be an effective means to raise and resolve issues, and identify best working practices.

Electric Safety Standard compliance monitoring is also ensured through field visits. The focus of the visits is to ensure that stray voltage testing, inspections, and the data collection process were being completed properly. Specifically, Staff verified that utilities located and tested required facilities for stray voltage. The field visits also monitor the quality assurance programs, which generally encompass random sampling of the testing and inspection records to verify the accuracy of data collected.

To verify utility inspection activities Staff performed its own inspections and accompanied the utilities during inspections in certain cases. Staff then obtained inspection and Quality Assurance/Quality Control (QA/QC) data and verified the results by performing a side-by-side comparison of the utility's results and data collected during Staff's inspections. Utilities were notified of any conditions which were noted in Staff's results but not shown on utility data.

Staff also used field visits to confirm that utility reported repairs have been completed. Staff obtained Company repair statements which described the repair activity and specified the completion date. Staff would then field verify these documents. Additionally, Staff used this opportunity to inspect all components of the surrounding equipment in relation to the verified facility and noted any substandard conditions. The additional check was to ensure that crews did not ignore other existing problems in this area and also to ensure that no new conditions developed since the date of the repairs.

Based on the 2008 changes to the standards, the utilities are integrating the process for inspections, quality assurance and work requests to perform repair activities, including enhanced recordkeeping. Staff will continue monitoring the utilities in an effort to ensure that inspections are properly performed and that repairs are made to the discovered substandard conditions in the required timeframe.

CONCLUSION

All of the utilities are in compliance with the testing requirements of the Electric Safety Standards. Stray voltage testing was performed on approximately 4 million facilities across the state in 2009. All of the utilities are also in compliance with the 100% inspection requirement, over the last five years; approximately 3.5 million facilities were visually inspected.

The requirements of the Electric Safety Standards have resulted in the identification of locations with sizable stray voltage levels where mitigation was necessary to maintain public safety. The standards remain an effective means to ensure the safe and reliable operation of the electric system. Stray voltage found on streetlights continues to be a major concern. Based on the results observed to date, stray voltage testing is needed to continue 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 requirements have also resulted in the identification of numerous substandard conditions on the state's electric facilities. The newly established repair and reporting requirements became effective for the 2009 inspection cycle. Overall, Staff is satisfied with the effort put forth by the utilities in repairing Level I deficiencies. Repair efforts on Level II and Level III deficiencies will be monitored to ensure repairs are made within the designated timeframes. Several opportunities for improvement still exist with respect to recordkeeping, and balancing inspections performed per year. Staff also encourages each utility to plan in advance for the influence from unexpected events such as winter storm damage or a power outage on inspection and repair programs.