

STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

Interoffice Memorandum

June 4, 2009

TO: THE COMMISSION

FROM: OFFICE OF ELECTRIC, GAS, AND WATER

SUBJECT: Case 04-M-0159 – Proceeding on Motion of the Commission to Examine the Safety of Electric Transmission and Distribution Systems

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 who owns them. This testing is generally a manual process performed using handheld devices (manual testing). Consolidated Edison Company of New York, Inc. (Con Edison),

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" means and includes utility and municipal electric-owned streetlights 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.

however, has also been using mobile surveys to supplement the manual testing program. The mobile detector is limited to use in regions served predominantly by underground facilities. It is able to detect the presence of electric fields that would lead to a finding of stray voltage on a variety of objects, not limited to utility facilities. During the period of December 1, 2007 through November 30, 2008, Con Edison completed nine mobile surveys of its underground distribution system³.

Manual stray voltage testing was performed on approximately 4 million facilities statewide in the 2008 inspection cycle⁴, with 3181 stray voltage findings identified; 3117 were found by the investor-owned utilities⁵ and the remaining 64 were found by the municipal electric utilities. Of the total stray voltage findings, 446 (14%) were at voltage levels of 8 V or higher⁶. Findings on streetlights accounted for 364 (82%) of the conditions at voltage levels of 8 V or higher.

In the 2008 testing cycle, there were 286 calls from customers reporting shock incidents that resulted in confirmed cases of stray voltage; 93 were caused by problems with utility facilities and 193 were traced to faulty customer equipment or wiring. The totals in 2008 were similar to the 2007 total of 294 calls, with 88 traced to utility facilities and 206 due to problems on customer equipment.

³ Three additional surveys were completed prior to April 1, 2009 to comply with the Commission order in Case 07-E-0523 - Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc., for Electric Service, Order Establishing Rates for Electric Service (Issued March 25, 2008)

⁴ December 1, 2007 through November 30, 2008.

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 The voltage level of 8 V or higher corresponds to the acceptable detection range for testing equipment as specified in the Electric Safety Standards in effect for the 2008 inspection cycle.

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 8 V, as detailed in Table 4. Based on the results observed to date, the 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 inspect⁷ at least 20% of its electric facilities per year and all facilities within 5 years. More than 90% of the electric facilities statewide have been inspected over the past four years. The upcoming year (2009) will mark the fifth year of this required inspection cycle. Thus far, completed inspection results indicate that all utilities appear to be on target to meet the 100% system-wide inspection requirement within the required timeframe. As a result of the inspection program, the utilities have identified and repaired numerous deficiencies that could compromise the safety and/or reliability of the electric system. The utilities also identified numerous lower level deficiencies that were entered into work order systems for repair as part of scheduled work activities.

BACKGROUND

On January 5, 2005, the Commission adopted Electric Safety Standards that established proactive steps for ensuring 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

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 effect reliability. Unlike stray voltage testing, this task requires opening access covers and entering underground facilities, such as manholes.

Code as the minimum standard governing utility construction, maintenance, and operations.

At that time, the standards required the utilities to use a certified voltage detector able to sense voltages from 8 to 600 V⁸. All of the investor-owned utilities and many of the municipal electric utilities decided to use the same make of handheld device, which has a certified voltage range from 4.5 to 600 V. Whenever such a device indicates the presence of voltage, the utilities would re-test the facility using a portable volt meter with a 500-ohm shunt resistor⁹ to determine the actual level of voltage present.

Experience with the voltage detector revealed that it is capable of indicating the presence of voltage below the 4.5 volt rating. The standards also require that where a utility finds stray voltage, it must immediately make the area safe and repair it within 45 days if the condition is caused by utility-owned facilities. If the condition is caused by customer-owned equipment, the customer or a responsible person associated with the property is notified. A performance mechanism was adopted to ensure the utilities maintain proper focus on safety and compliance with the Electric Safety Standards.

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 finding¹⁰, 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 in 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.

⁸ The device does not yield an actual voltage measurement. It only signals that voltage has been detected within that range.

⁹ The resistor is utilized to simulate the resistance of the human body in contact with the energized object.

¹⁰ 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.

Additionally, the 2008 order amended requirements for utility inspections. Changes with respect to this order consist of 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 will be easier to manage and compare submitted utility results. This inspection grading system includes the following criteria for utilities: Level I discoveries must be fixed within one week, Level II discoveries must be fixed within 1 year, and Level III occurrences must be fixed within 2 years of the initial discoveries. This order also calls for temporary repairs to be made within 45 days (longer only if there are extraordinary circumstances, such as storms) and that these repairs are documented and entered into utilities' tracking systems.

The revised standards are effective for the 2009 testing and inspection cycle, which encompasses calendar year 2009. This report discusses the results of the 2008 testing and inspection cycle, which was performed in accordance with the original standards.

STRAY VOLTAGE TESTING

Table 1 lists the number of stray voltage findings of 1 V or above detected as a result of the testing programs developed in response to the Electric Safety Standards.¹¹ Stray voltage testing was performed on almost 4 million transmission and distribution facilities across the State. Tables 2 and 3 detail the breakdown of the findings by facility type for 2007 and 2008. In these tables, Overhead Distribution includes substation facilities, and Transmission includes both overhead and underground facilities.

¹¹ 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: Summary of Stray Voltage Findings via Manual Testing – 2008 Test Cycle

Company	Stray Voltage Findings in 2008 Test Cycle	Stray Voltage Findings In Previous Test Cycle
Con Edison	507	678
National Grid	678	559
NYSEG	1086	570
RGE	280	289
Central Hudson	533	987
Orange & Rockland	33	7
Municipal Electric Utilities	64	115
Totals	3181	3205

Note: The totals include streetlights, traffic controls, overhead and underground distribution, substations, and transmission.

Table 2: Summary of Stray Voltage Findings 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

Table 3: Summary of Stray Voltage Findings by Facility Type – 2007 Test Cycle

Company	Streetlights	Underground Distribution	Overhead Distribution	Transmission	Total Findings
Con Edison	659	10	9	0	678
National Grid	290	9	198	62	559
NYSEG	86	0	270	214	570
RGE	52	2	78	157	289
Central Hudson	5	8	629	345	987
Orange & Rockland	0	0	7	0	7
Municipal Electric Utilities	12	18	85	0	115
Total	1104	47	1276	778	3205

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

In the 2008 testing cycle, stray voltage findings were obtained on 0.08% of total utility facilities tested. Individual detection rates for underground distribution, overhead distribution, and transmission are 0.008%, 0.036%, and 0.419%, respectively. The municipal electric utilities identified 64 stray voltage findings related to overhead distribution facilities, which equates to a detection rate of 0.05%.

Of the 3117 stray voltage conditions found by handheld devices on the investor-owned transmission and distribution facilities, 2671 were low voltage in nature (less than 8 V). Table 4 details the findings above 8 V.

Table 4: Summary of Stray Voltage Findings Greater Than 8 V – 2008 Test Cycle

Company	Streetlights	Underground Distribution	Overhead Distribution	Transmission	Total Findings
Con Edison	240	4	3	0	247
National Grid	68	4	25	1	98
NYSEG	33	0	12	3	48
RGE	21	0	2	20	43
Central Hudson	2	0	1	0	3
Orange & Rockland	0	0	7	0	7
Municipal Electric Companies	0	0	0	0	0
Totals	364	8	50	24	446

As can be seen from the tables, the area of greatest concern remains streetlights, in particular in the Con Edison service territory. The following section provides an update on Con Edison's program specifically targeting this issue.

Con Edison's Isolation Transformer Program

Given the high number of stray voltage conditions related to streetlights, Con Edison has evaluated alternative ways to mitigate the public's exposure. One of the company's efforts is the development of isolation transformers, which create an isolated ungrounded circuit for each streetlight. This protects workers and the public against hazards due to cable failure, poor neutral connections or ineffective grounding that may be present.

In 2008 the company commenced a program to install up to 163,000 isolation transformers and associated connectors in underground structures supplying street lamps and traffic signals in New York City and Westchester County. It is expected that this measure will virtually eliminate stray voltage conditions attributable to these structures. The program is scheduled to be completed by 2017. As of the end of 2008 the company has installed approximately 1500 units, and is targeting a total of 8800 for 2009.

Con Edison's Supplemental Mobile Detector Program

In the interest of gaining efficiencies in the stray voltage testing process, Con Edison developed and currently utilizes mobile stray voltage detection technology. The detector uses a sensor to measure low level electric and magnetic fields. Due to this aspect of the technology, the detector can only be used in areas that are exclusively served by underground distribution facilities due to the interference induced by overhead facilities. An operator, viewing a console from the vehicle's passenger compartment, is alerted graphically and by audio tone to the presence of an electric field in the vicinity. Unlike the handheld devices used in the manual testing program, the mobile detector does not make direct contact with objects to test for stray voltage. Instead, the sensors detect the presence of an electric field and the technicians must then perform manual testing to pinpoint the source of the problem. As a result, testing via this method identifies stray voltage on any facilities in the vicinity, which may include non-utility assets. Stray voltages found on such objects when using the mobile detector are mitigated by Con Edison and the area is made safe.

In 2005, Con Edison purchased five mobile survey vehicles and began using the mobile detectors to test for stray voltage in addition to the manual testing program required by the Electric Safety Standards. Con Edison has achieved positive results utilizing the mobile detectors and has expanded its fleet to 15 vehicles. The company completed one system scan in 2005, 1.5 scans in 2006, and 5.5 in 2007. As a result of the Commission order in Case 07-M-0523, the company completed nine scans of its underground distribution system in 2008, with three additional scans required to be completed by April 1, 2009. The results of the scans completed in 2008 are summarized in Table 5 below.

In 2008 Con Edison filed a formal petition with the Commission seeking approval to use the mobile detector 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. Staff evaluated the petition on its merits and found that, given the experience gained by Con Edison over the last several years, it was appropriate to approve the

petition. 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 cities with populations of 50,000 or more. Based on the results and costs of these surveys, further revisions to the standards will be evaluated.

Table 5: Findings by Con Edison Utilizing the Mobile Detector - 2008 Test Cycle

Stray Voltage Location	Total Locations	Con Edison Responsibility	Non-Con Edison Responsibility
Streetlight	2109	859	1250
Traffic Light	455	82	373
Sidewalk	585	482	103
Con Ed Cover	347	323	24
Gate/Fence/Awning	442	217	225
Traffic Sign	21	3	18
Customer Equipment	341	114	227
Scaffolding	139	18	121
Bus Shelter	50	9	41
Fire Hydrant	72	58	14
Phone Booth	39	12	27
Traffic Control Box	12	1	11
Non-Con Ed Cover	9	7	2
Pole	5	2	3
Water Pipe	18	11	7
Parking/Municipal Meter	4	4	0
Trench	1	1	0
Totals	4649	2203	2446

SHOCK REPORTS

In addition to testing programs, the utilities become aware of potential stray voltage locations based on 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 6 and 7 provide a summary for 2008 and 2007, respectively, 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 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

Table 7: Summary of Shock Reports in 2007

Company	2007 Shock Reports	Company Responsibility	Customer Responsibility
Con Edison	132	46	86
National Grid	139	31	108
NYSEG	5	2	3
Rochester Gas & Electric	3	2	1
Central Hudson	3	2	1
Orange & Rockland	12	5	7
Municipal Electric Utilities	0	0	0
Total	294	88	206

INSPECTIONS OF ELECTRIC FACILITIES

The Electric Safety Standards require the inspection of all electric facilities over a five-year cycle. This requirement was introduced to identify and eliminate potentially harmful electric components before serious safety hazards and/or reliability deficiencies develop. The process involves careful visual inspection of electric facilities to identify any damage that may cause hazardous conditions or reliability disruptions. Covers of underground facilities, and any water or debris within the structure, must be

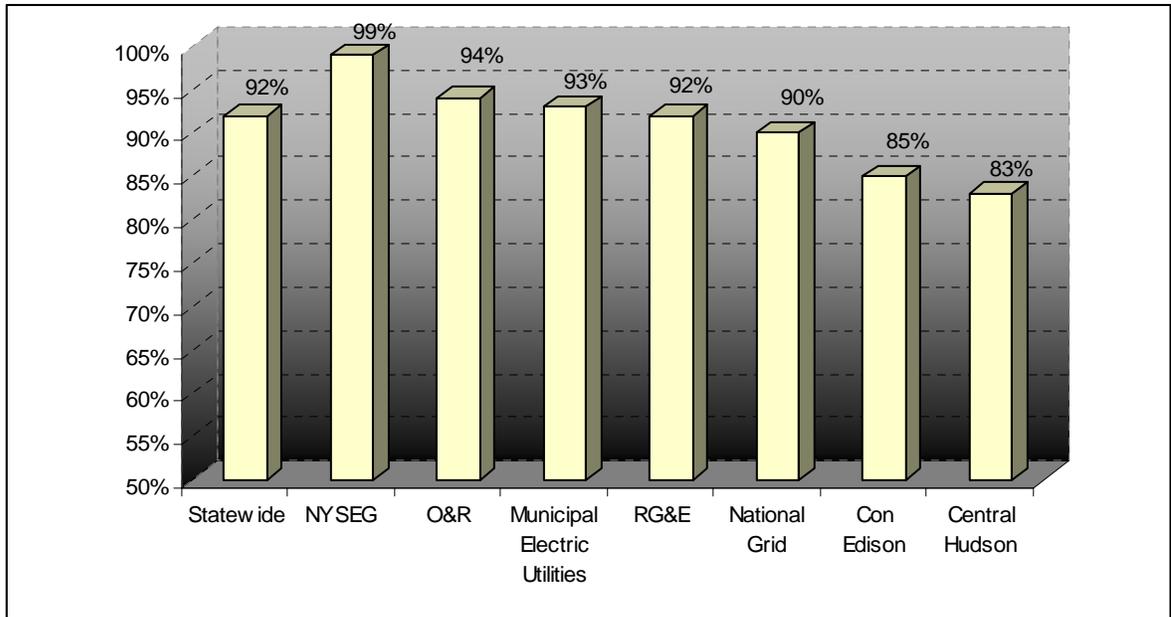
removed prior to the inspection taking place. Inspections are performed by a combination of company employees and contractors, all of whom first receive appropriate safety and other training.

The Electric Safety Standards require utilities to complete the five-year cycle of inspections in fifths; that is 20% of each utility's total facilities in the first year, 40% of their total facilities by the end of the second year, etc. The completion of the first five-year inspection cycle will be required by the end of 2009. In order to fulfill this requirement, facilities that have not been previously inspected since 2005 must be inspected by the end of 2009.

As of November 30, 2008, approximately 92% of the State's electric facilities have been inspected. As shown in Figure 1, all utilities met or exceeded the 80% overall targets for inspecting electric facilities after four years. Municipal Electric Utilities completed inspections on approximately 93% of their facilities combined, and more than half have completed inspections on their entire system.

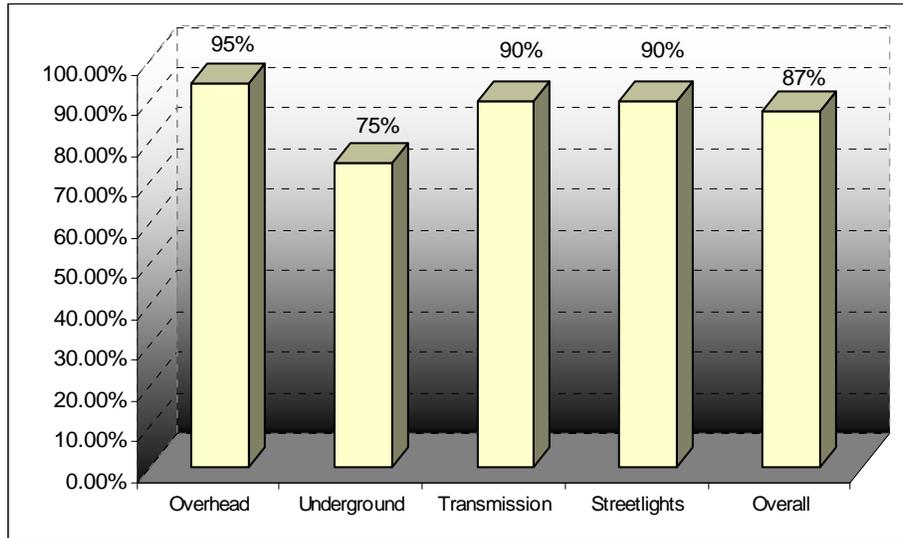
NYSEG is approximately 99% complete with its system-wide inspections. This is a result of increased inspection activity in 2007 and 2008 as well as a refinement to its facility count (which was originally an estimate). NYSEG indicated it will continue inspecting equipment throughout this year and should easily surpass the minimum inspection requirements in the standards.

Figure 1: Percentage of System wide Inspections Completed on Utility Facilities January 5, 2005 through November 30, 2008



The majority of the utilities have balanced programs across each of the general electric facility categories (transmission, overhead distribution, underground distribution, and streetlights). Figure 2 shows the percentages of visual inspections performed by category for all investor-owned utilities combined. Inspection of transmission and overhead distribution via foot patrols has gone well, likely due to the openness and easily accessible facilities. Overhead distribution inspection progress appears to be on schedule. The remaining statewide total of un-inspected items in this category consists of approximately 200,000 facilities, which represents a fairly small percentage of the overhead population. Similarly, all utilities are making appropriate progress on the transmission inspections. It appears that all utilities will successfully inspect the entire population of the three above-cited structure types by the end of this inspection cycle.

Figure 2: Percentage of Inspections Completed on Investor Owned Utility Facilities January 5, 2005 through November 30, 2008



National Grid, NYSEG, and RG&E are the only utilities that own streetlights and consequently are required to inspect them in accordance with the Electric Safety Standards. NYSEG and RG&E have nearly completed an inspection cycle of all utility-owned streetlights. National Grid is approximately 90% complete with its streetlight inspections. In addition, Orange and Rockland identified 500 streetlights which it owns. Orange and Rockland did not inspect any of these in 2008; however, it has scheduled the inspection of these 500 facilities in 2009.

The percent of inspections on underground facilities continues to lag behind the other classifications. Generally, these inspections are more time consuming and are conducted by a smaller subsection of workers compared to overhead inspections. The underground inspections also commonly take place during overnight hours in order to be less disruptive to automotive and pedestrian traffic, thereby creating a safer working environment.

Table 8: Percentage of Inspections Completed on Investor Owned Utility Underground Facilities January 5, 2005 through November 30, 2008

Utility	Con Edison	National Grid	RG&E	NYSEG	O&R	Central Hudson
Underground						
No. Facilities	282,464	102,131	45,395	30,784	28,955	13,133
No. Completed	200,064	82,726	34,046	30,784	18,937	9,904
% Complete	70.83%	81.00%	75.00%	100.00%	65.40%	75.41%

As shown in Table 8, Con Edison has approximately 280,000 underground structures, of which more than 80,000 remain to be inspected. In order to catch up, Con Edison hired two outside contractors last year to supplement its workforce to complete all underground inspections within the five-year period. With the aid of the contractors, the company performed over 72,000 inspections in 2008. In order to complete inspections on the remaining underground structures, the company must perform a similar amount of inspections in 2009. Given the volume of work required, Staff will continue to closely monitor Con Edison’s efforts towards completing its underground inspection cycle. RG&E, Central Hudson, and Orange and Rockland do not have large underground infrastructure populations; therefore, these utilities will likely complete the remaining inspections.

Over the past few years, the inspection programs have identified substandard conditions of varying degrees of repair priorities. In 2008, Con Edison increased its targeted inspection program and as a result, 115,339 serious conditions were identified. Conditions which required preventative measures at the time of inspection are included in this count. Con Edison has reported that all 115,339 serious conditions have been permanently repaired. The upstate utilities have also reported finding and correcting a significant amount of safety hazards or critical reliability issues over the past few years.

Non-critical substandard conditions identified during inspections do not pose safety hazards or imminent reliability issues and are entered into work order systems for repair as part of scheduled work activities. Beginning with the 2006 company reports,

Staff began to collect data to evaluate how quickly the utilities are making repairs to the conditions found. This year’s utility filings provided an update to the previously submitted data and their 2008 findings. Our review determined that the utilities have been making repairs to high and intermediate level conditions.

As shown in Table 9, repair efforts on lower level conditions, however, have been slow. The Commission addressed the issue in its December 2008 order by setting a maximum amount of time for repairing substandard conditions found during inspections. National Grid, in particular, has accumulated a significant backlog of work to be performed. Additionally, National Grid reported a large backlog of lower level priority items discovered between 2005 and 2007 has not been repaired. It should be noted that Con Edison is not included in the table below. Con Edison typically averages around 21,000 overhead distribution repairs per year; this number, however, also includes routine repairs which are not associated with its inspection program.

Table 9: 2008 Lower Level Substandard Conditions and Repairs made to Overhead Distribution Facilities in Upstate New York

	National Grid	Central Hudson	RG&E	NYSEG	O&R
No. Substandard Conditions	14,188	25,140	955	750	3,196
No. Repaired	8,490	24,740	475	311	611

The newly established repair requirements, effective as of 2009, should help eliminate the backlog of these non-critical substandard conditions. As a result, repairs to the mid to lower level discoveries, which may have been postponed in the past, are now required to be repaired within one or three years, depending on severity of conditions. As part of implementing the revised inspection requirements, Staff will be monitoring utilities to ensure that previously discovered conditions are repaired in a reasonable amount of time. In particular, Staff will continue to work with National Grid in order to address its backlog from an operations and maintenance perspective and with capital investment projects associated with the KeySpan merger requirements.

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 2008.

The Electric Safety Standards also establish a performance mechanism for the utilities to ensure compliance with the Electric Safety Standards. This mechanism includes annual performance targets for stray voltage testing and annual facility inspections, with associated revenue adjustments. As shown in table 10, all of the utilities achieved the target levels prescribed, and as a result no revenue adjustments are required.

Table 10: Statewide Stray Voltage and Facility Inspection Target and Actual Completions

Company	Stray Voltage		Facility Inspections	
	Target	Actual	4 th Year Target	Actual
Con Edison	100%	100%	76%	85%
O&R	100%	100%	76%	94%
National Grid	100%	100%	76%	90%
NYSEG	100%	100%	76%	99%
RG&E	100%	100%	76%	92%
Central Hudson	100%	100%	76%	83%

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 three 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 past two years from addressing implementation issues, such as data collection, to focusing more on stray voltage mitigation efforts, including discussing practices used by utilities outside of New York.

Staff actively participates in the working group sessions. Currently, group discussions are held quarterly, either by a conference call or a face-to-face meeting. 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.

Staff has performed a number of field visits at the investor-owned utilities to determine whether the utilities implemented proper programs to comply with Electric Service Standards. The initial focus of the visits was to ensure that stray voltage testing, inspections, and data collection process were being done 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 records to verify the accuracy of data collected.

To verify utility inspection activities, Staff accompanied the utilities during inspections or obtained inspection and QA/QC data and verified the results. Upon completion of both these methods, Staff performed a side-by-side comparison of its results and data provided by the utility inspectors. Utilities were notified of any conditions which were noted in Staff's results but not shown on utility data.

Staff also expanded its field inspection monitoring activities in 2008 (and will do so in 2009) to verify the effectiveness of the utilities various inspection and maintenance programs. As part of this, Staff performed numerous related activities across a large random sampling throughout the state. Activities associated with Staff's efforts included ensuring that deficiencies identified during company inspections are corrected and determining if tree trimming is performed adequately.

The repair verification activity involved Staff's confirmation of utility reported repairs. Staff obtained Company provided repair statements which specified repair completion dates (for example, "snapped guy wire, repaired on 8/29/2008"). 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. The verification activities will continue into the future, and due to the recent changes in the standards, it is expected that the frequency of field visits will increase going forward.

During tree trimming verifications, Staff ensured that there were proper clearances from vegetation to conductors and other electric facilities. Staff also inspected the pruning and trimming methods in relation to specifications. Any discovered trimming issues were reported to the appropriate utilities. Staff also completed a limited amount of independent inspections throughout the state's various utility territories.

In regards to inspections, several utilities have separate database systems to track inspection and repair work. In general, the utilities should be looking to coordinate the recordkeeping process for inspections, quality assurance and repair activities. 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 a timely fashion.

CONCLUSION

All of the utilities are in compliance with the testing requirements of the Electric Safety Standards. All of the utilities are also in compliance with the 80% inspection completion requirement. Additionally, it appears that all of the utilities should be capable of completing system-wide inspections in the upcoming year, as this will mark the conclusion of the first required inspection cycle.

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, and the standards remain an effective means to ensure the safe and reliable operation of the electric system. In addition to this, the requirements have resulted in the identification of numerous substandard conditions on state electric facilities; and repairs were performed on some of these inspection

discoveries. Recent revisions to the Electric Safety Standards, however, should ensure that more of these repairs are performed in the future. Staff will continue to actively monitor utility compliance and other practices aimed at detecting or minimizing the presence of stray voltage. Staff will also continue to actively monitor utility inspection programs.

Respectfully submitted,

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