

STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE



2013 ELECTRIC RELIABILITY PERFORMANCE REPORT

Electric Distribution Systems
Office of Electric, Gas, and Water
June 2014

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EXECUTIVE SUMMARY

The attached report presents the assessment by Department of Public Service Staff (Staff) of electric reliability performance in New York State for 2013. Staff primarily relies on two metrics commonly used in the industry to measure reliability performance: the System Average Interruption Frequency Index (SAIFI or frequency) and the Customer Average Interruption Duration Index (CAIDI or duration).¹ Frequency is influenced by factors such as system design, capital investment, maintenance, and weather.² Decisions made by utilities today on capital expenditures and maintenance policies, however, can take several years before being fully reflected in the frequency measure. Duration, on the other hand, is affected by work force levels, management of the workforce, and geography. Several means have been established to assist Staff in monitoring the levels of service. First, utilities are required to submit detailed monthly interruption data to the Public Service Commission (Commission).³ Next, the Commission adopted Service Standards, which among other things, set minimum performance levels for both the frequency and duration of service interruptions for each major electric utility's operating divisions. Then, utility performance is compared with utilities' Reliability Performance Mechanisms (RPMs) established in the utilities' rate orders. The RPMs include company-wide targets for outage frequency and duration; some RPMs have additional measures to address specific concerns unique to an individual company. RPMs are designed such that companies are subjected to negative revenue adjustments for failing to meet electric reliability targets. All companies met their frequency and duration RPM targets in 2013, and therefore, no revenue adjustments

¹ SAIFI is the average number of times that a customer is interrupted for five minutes or more during a year. CAIDI is the average interruption duration time in hours for those customers that experience an interruption during the year.

² For example, because the system of Consolidated Edison Company of New York, Inc. (Con Edison) includes many large, highly concentrated underground distribution networks that are generally less prone to interruptions than overhead systems, its interruption frequency is extremely low (better) as compared with other utilities.

³ The regulated electric 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 (RG&E), and Orange & Rockland Utilities, Inc. (Orange & Rockland). PSEG-LI supplies interruption data that is used to calculate statewide performance in this report.

are necessary.⁴ Unlike the other utilities, PSEG-LI does not have rate orders or RPMs by the Commission, but did meet the performance metrics set as part of a Management Service Agreement.

In addition to Staff's review, the utilities are required to perform a reliability analysis. The utilities must submit a formal report by March 31 of each year containing detailed assessments of performance, including outage trends in a utility's various geographic regions, reliability improvement projects, analyses of worst-performing feeders, and corrective action plans where needed. Recent data is also compared with historic performances to identify positive or negative trends. Staff also reviews several other specific metrics that vary by utility to gauge electric reliability.

By compiling the interruption data provided by the individual utilities, the average frequency and duration of interruptions can be reviewed to assess the overall reliability of electric service in New York State. Staff is generally pleased with the electric reliability performance across the State. Excluding major storms, the statewide interruption frequency for 2013 was the same as the statewide five year average (as shown in Figure 1 on page 6).⁵ Statewide the three major causes for interruptions were equipment failures, tree contacts, and accidents or events not under the utility's control. Statewide the number of tree contacts has been going down since 2009. Except for Con Edison and Orange & Rockland, tree contacts were the main drivers for each utility's interruptions. In fact, approximately two thirds of all interruptions statewide can be attributed to equipment failures and tree contacts. Con Edison and Orange & Rockland reported equipment failures were the main drivers for interruptions in their service territories.

⁴ While not related to reliability, National Grid missed its project estimating target in its RPM and incurred a \$2 million negative revenue adjustment for 2013.

⁵ Major Storm is defined as any storm which causes service interruptions of at least ten percent of customers in an operating area, or if the interruptions last for 24 hours or more. To help achieve a balance between service interruptions under a utility's control, such as equipment failures, and those which a utility's control is more limited, such as an ice storm, we review reliability data both including and excluding severe weather events.

Orange & Rockland's 2013 frequency performance was the best in the Company's history and better than its 10 year trend. Central Hudson's 2013 frequency performance was the Company's second best performance over the last 10 years. While National Grid and NYSEG performed satisfactorily and met the frequency criteria in their performance mechanisms, their performance related to frequency was not as good as their 10 year trends. Both of these Companies experienced a number of storms, such as heavy rain and thunderstorms, in 2013. These weather events, however, were not severe enough to be classified as major storms and eligible for exclusion. Con Edison's radial frequency performance, however, was not as good as its 2012 performance, but the Company still met its RPM frequency target in 2013. Con Edison has several capital projects and storm hardening efforts planned that should help improve its resiliency and frequency performance.

In 2013, the statewide duration performance, excluding major storms, was better than the statewide five year average (as shown in Figure 2 on page 7). In addition, all companies except for Con Edison have been improving since 2003 indicating that the average restoration time has been improving. In 2013, the effects of all weather events were more typical than the extreme major storms experienced in 2011 and 2012, resulting in better overall durations.

Con Edison's overall radial duration performances during the past two years were close to the RPM target and Staff is concerned about future performance, particularly in the Bronx and Queens where performances are not as good as in its other Operating Areas. Therefore, the Company's immediate efforts should focus on developing strategies targeted at improving reliability performance in those Operating Areas. Staff will interact with the Company to ensure changes are implemented as well as monitor and report on the effectiveness of these efforts in future reports.

INTRODUCTION

This report provides an overview of the electric reliability performance in New York State. Staff uses several means to monitor the levels of service reliability statewide and for each utility individually. First, the Commission's Rules and

Regulations require utilities delivering electricity in New York State to collect and submit information to the Commission regarding electric service interruptions on a monthly basis.⁶ Next, the Commission adopted electric service standards addressing the reliability of electric service. The standards contain minimum acceptable performance levels for both the frequency and duration of service interruptions for each major electric utility's operating divisions. Then, company-wide performance expectations are set in RPMs established in the utilities' rate orders. The RPMs are designed such that companies are subjected to negative revenue adjustments for failing to meet electric reliability targets. There are no revenue adjustments for failure to meet a minimum level under the service standards; utilities are, however, required to include a corrective action plan as part of the annual report.

The interruption data provided to Staff enables Staff to calculate two primary performance metrics: SAIFI or frequency and CAIDI or duration. The information is grouped into 10 categories that delineate the nature of the cause of interruption (cause code).⁷ Analysis of the cause code data enables the utilities and Staff to identify areas where increased capital investment or maintenance is needed. As an example, if a circuit were shown to be prone to lightning-caused interruptions, arrestors could be installed on that circuit to try to minimize the effect of future lightning strikes. In general, most of a utility's interruptions are a result of major storms, tree contacts, equipment failures, and accidents.⁸ Staff maintains interruption information in a database that dates back to 1989, which enables it to observe trends. The utilities also perform similar analyses. The utilities must submit a formal reliability report by March 31 of each year that compares data against both the system-wide RPM targets and the operating division targets established in the Commission's Service Standards. The individual

⁶ 16 NYCRR Part 97, Notification of Interruption of Service, requires utilities to keep detailed back-up data for six years.

⁷ 16 NYCRR Part 97, Notification of Interruption of Service, specifies and defines the following ten cause codes that reflect the nature of the interruptions: major storms, tree contacts, overloads, operating errors, equipment failures, accidents, prearranged interruptions, customers equipment, lightning, and unknown. There are an additional seven cause codes used exclusively for Con Edison's underground network system.

⁸ The accident cause code covers events not entirely within in the utilities' control including vehicular accidents, sabotage, and animal contacts. Lightning is reported under a separate cause code.

reliability reports also contain detailed assessments of performance, including outage trends in a utility's various geographic regions, reliability improvement projects, analyses of worst-performing feeders, and corrective actions, where needed.

The RPMs include company-wide targets for outage frequency and duration. Some RPMs have additional measures to address specific concerns unique to an individual company. For 2013, all companies met their RPM targets related to electric reliability performance, including those for frequency and duration. It should be noted that National Grid missed its project estimating target and incurred a \$2 million negative revenue adjustment for 2013.

2013 RELIABILITY PERFORMANCE

The following sections provide a summary discussion of the reliability performance statewide and for each of the major utilities. Individual company discussions identify issues or actions within each company that influenced performance levels for 2013 and indicate company-specific trends where applicable. Each year, Staff prepares an Interruption Report summarizing the monthly interruption data submitted by utilities. The 2013 Interruption Report contains detailed interruption data for each utility and statewide statistics for the past five years. The Interruption Report for 2013 is attached as an Appendix.

Interruption data is presented in two ways in this report – with major storms excluded and with major storms included. A major storm is defined by the Commission's regulations as any storm which causes service interruptions of at least 10 percent of customers in an operating area and/or interruptions with duration of 24 hours or more. Major storm interruptions are excluded from the data used in calculating performance levels for service standards and reliability performance mechanisms. The purpose of this policy is to achieve a balance between service interruptions under a utility's control, such as equipment failures and line maintenance, and those over which a utility's control is more limited, such as a severe ice storm or a heavy wet snowstorm.

Reliability performance data inclusive of major storms reflects the actual customer experience during a year.

STATEWIDE

For many years, Staff has been combining individual utility performance statistics into overall statewide statistics. By doing so Staff is able to evaluate the level of reliability provided statewide and identify statewide trends. Because Con Edison's system includes many large, highly concentrated distribution networks that are generally less prone to interruptions than overhead systems, its interruption frequency is extremely low (better) as compared with other utilities. This, combined with the fact that it serves the largest number of customers in the state, typically results in a skewing of the performance measures. As a result, Staff examines and presents aggregated data both including and excluding Con Edison's data.

Statewide, as shown in Figure 1, the frequency of interruptions excluding major storms was 0.57 in 2013, which is the same as the statewide five year averages. The frequency performance in 2013, for utilities other than Con Edison, is 0.92, slightly above the five year average of 0.91. When including major storms, the 2013 statewide frequency performance was 0.73 and 1.19 for utilities other than Con Edison. Both of these measures are better than the five year averages between 2006 and 2010 or before Hurricane Irene and Hurricane Sandy.

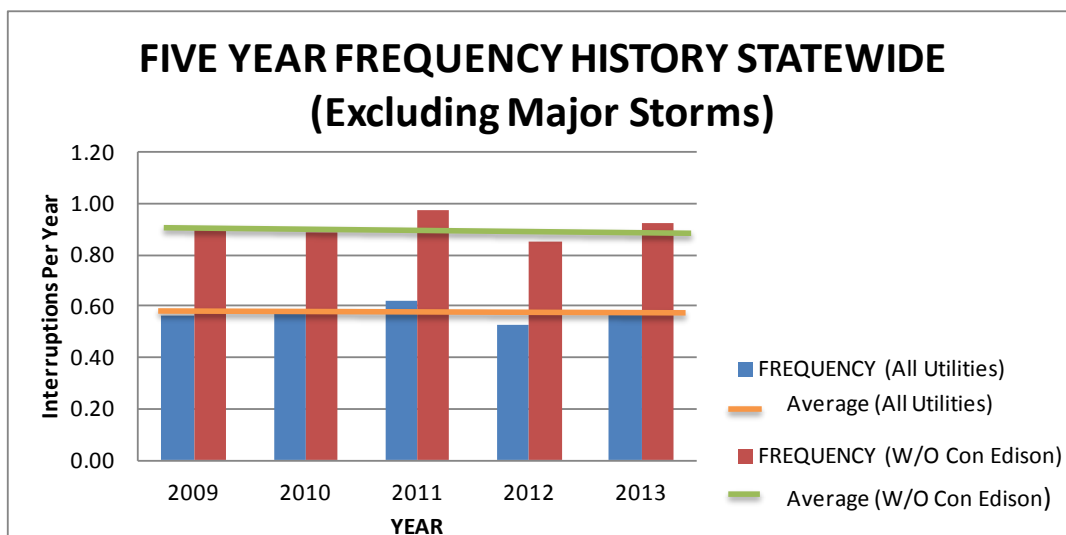


Figure 1: Statewide Frequency Performance

Figure 2 shows the historical statewide interruption duration index, excluding major storms. The 2013 overall statewide interruption duration index of 1.87 compares favorably with 1.91 in 2012, and is also generally consistent with the five year average. The statewide interruption duration index, excluding Con Edison, was 1.79 hours in 2013, which is less than the 2012 duration index of 1.87 and the five year average. When including major storms, the 2013 statewide duration performance was 2.75. Excluding Con Edison, the statewide duration performances including major storms was 2.76. These measures are better than the five year averages before Hurricane Irene and Hurricane Sandy or between 2006 and 2010. This indicates that in 2013, the overall length of storms has been shorter and customer hours of interruption are back to a more typical level.

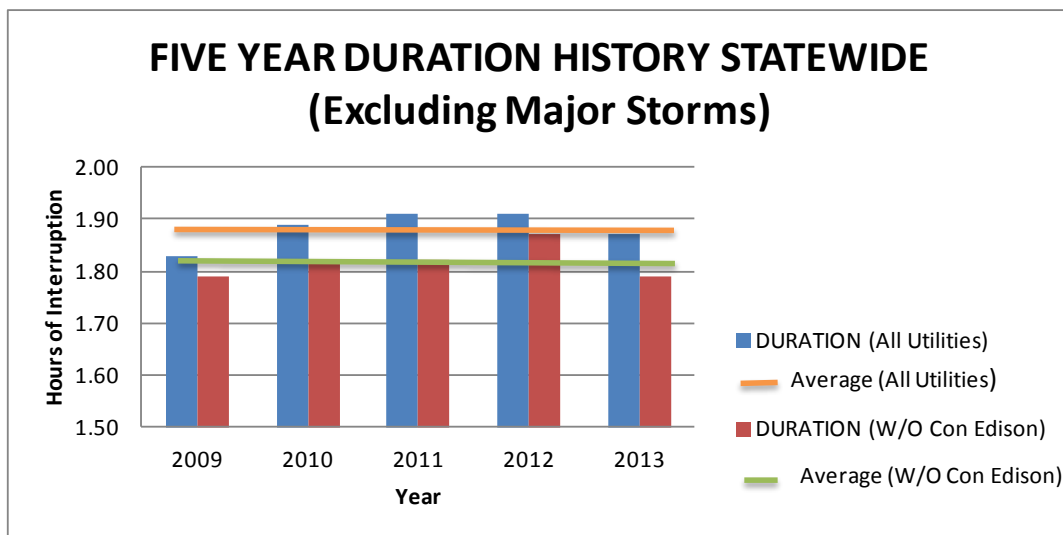


Figure 2: Statewide Duration Performance

With respect to major storms in 2013, numerous fast moving fronts passed through the State between April and November bringing heavy rain and/or damaging winds. In addition, the December ice storm caused the majority of storm related outages during 2013 affecting National Grid’s Frontier, Genesee, and Northern Regions and NYSEG’s Lancaster and Plattsburgh Divisions. In total, over 172,000 customers were affected by this event. Because of the extended restoration time associated with National Grid, the Commission required it to file a report detailing storm-specific restoration

activities taken during the December ice storm.⁹ In 2013, National Grid and NYSEG each experienced 20 major storms and over 87% of their customer interruptions were attributed to these major storms. Despite the number of events, the effect of major storms on customers in 2013 was more typical than the extremes experienced in 2011 and 2012. This can be seen easily in Figure 3.

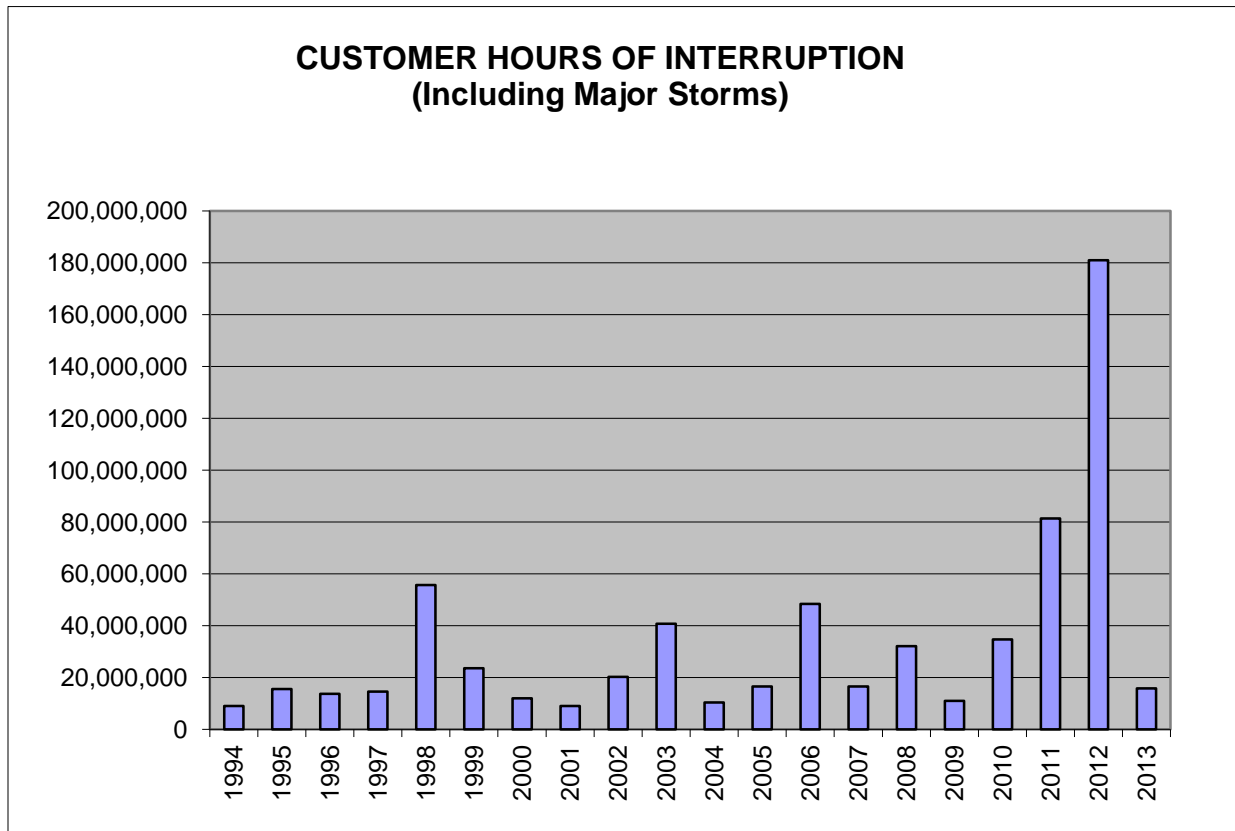


Figure 3: Customer Hours of Interruption (Including Major Storms)

⁹ 16 NYCRR Part 97 and 105.4, requires utilities to file storm reports for outages lasting longer than three days. These reports, as well as Staff’s once completed, may be found on the Department’s website: <http://www.dps.ny.gov> .

CON EDISON

Table 1: Con Edison’s Historic Performance Excluding Major Storms

Performance Metric	2009	2010	2011	2012	2013	5-Year Average
Network Systems ¹⁰						
Frequency Customer Interruptions per 1,000 Customers	2.43	2.38	2.49	1.94	2.17	2.28
Duration Avg Interruption Hours	3.94	4.47	4.58	4.75	4.20	4.38
Radial System						
Frequency (SAIFI)	0.32	0.42	0.49	0.36	0.40	0.40
Duration (CAIDI)	1.74	1.95	2.12	2.02	2.02	1.97

Note: Data presented in red represents a failure to meet the RPM target for a given year.

Con Edison serves approximately 3.3 million customers in New York City and Westchester County. Electricity is supplied to 2.4 million customers by network systems. The remaining 900,000 customers are supplied by radial systems.

Con Edison’s electric distribution system contains both a radial system and a network system. The radial system is mostly above-ground poles supporting overhead wires, where the network system is mostly underground wires housed in conduits. The two systems are subject to different reliability metrics specifically designed for its configuration. While the radial system is measured in the same manner as other utilities, the number of interruptions per 1,000 customers served and average interruption duration are used to gauge network performances.

In 2013, Con Edison met its targets for both system wide frequency and duration. Con Edison’s frequency performance of 2.17 and duration performance of 4.20 are both the second best performance over the last five years. It should be noted that

¹⁰ The SAIFI and CAIDI metrics used to measure network performance were replaced in 2009 with Network Outages per 1000 customers and Network Outage Duration, respectively. Network performances shown are consistent with Con Edison’s RPM filings. The RPM threshold standard for the Network Outages per 1000 customers metric is set at 2.50. The RPM threshold standard for the Network Outage Duration metric is set at 4.90.

these performances do not include three major storm snow/ice events excluded from the RPM calculation.¹¹

To minimize the frequency of customer outages, Con Edison's networks are designed with redundant electric supply paths. Individual service connections to customer premises, however, lack this redundancy. Grounds, short circuits, or broken conductors on these service connections account for 54% of interruptions for network customers. The second most frequent cause of network customer interruption is grounds, short circuits, or broken conductors on secondary street main cables, accounting for 41% of interruptions. Con Edison attributes its performance to multiple secondary burnouts and defective secondary mains. Some of the initiatives that Con Edison has planned to address these two issues are to use contractors to increase bridging work; continue the deployment of dual layer cable which is more resilient to failure, and develop arc detection technology which may allow the removal of compromised components before failure.

The majority storm hardening and resiliency projects began in 2013 when Con Edison spent approximately \$68.1 million on flood mitigation measures in substations and other transmission and distribution system improvements. For 2014, Con Edison plans to spend approximately \$146.2 million towards storm hardening and resiliency efforts. With regard to the network system, the Company has replaced underground non-submersible equipment with submersible equipment and installed underground switches in the Fulton and Bowling Green networks. This will allow the Company to disconnect customers within the flood zone while continuing to provide electric service to the other network customers. Con Edison will continue to replace underground non-submersible equipment with submersible equipment throughout the flood zone areas of its service territory.

On its radial system, Con Edison met its system wide frequency and duration performance under its RPM. The frequency performance value of 0.396 in 2013

¹¹ Periods of salt spreading and subsequent water runoff results in underground secondary cable burnouts and equipment failures. As a result, it was agreed to exclude this data to normalize network performances and allow trending analysis. If major snow and ice storms were not excluded from its network performance, Con Edison's number of interruptions per 1,000 customers served would be 3.08 and its duration performance would be 5.65.

was not as good as its 2012 performance, but similar to its five-year average and better than its RPM frequency target of 0.495. Con Edison's radial duration performance of 2.02 hours is close to the RPM target of 2.04 hours and similar to its 2012 performance value. Radial frequency performance in Westchester, Brooklyn, Queens, and Staten Island was better than the regional targets. One of the contributing factors to substandard frequency performance in the Bronx was a loss of a substation supply feeder due to heat and equipment failures.

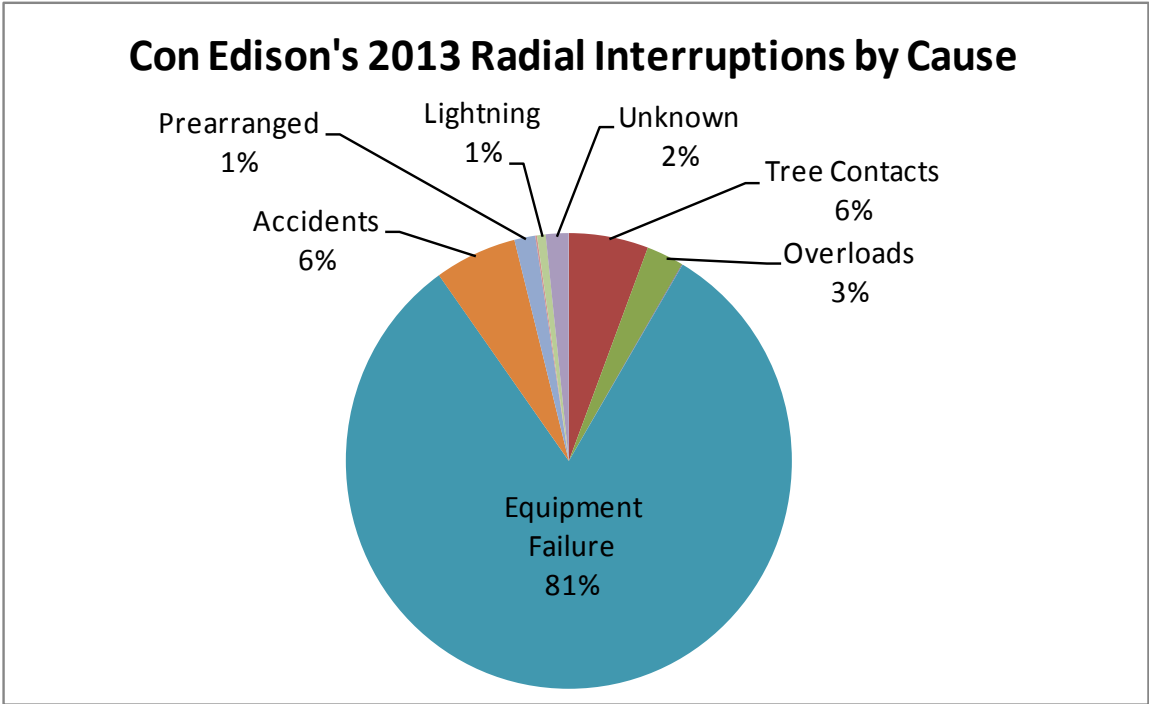


Figure 4: Con Edison's 2013 Radial Interruptions by Cause

As shown in Figure 4, apparatus or equipment failures are responsible for the majority of the interruptions on the radial system, followed by accidents and tree contacts. Staff has noted a reduction in interruptions due to tree contact, but a rise in apparatus or equipment failure. Analysis of underlying data indicates that service failures are the main driver for the high percentage of equipment failures. Because a service failure only impacts one to a few customers, these events have limited impact to the overall frequency measures. The main contributors to the frequency performance are outages associated with open wire and primary feeders. To address this issue, Con

Edison plans to install fuses, bypass switches, and reclosers to isolate outages and limit the overall customer impact. These projects will be funded and installed under Con Edison's storm hardening efforts. In addition, under this effort, the Company will install sacrificial breakaway hardware and detachable service cable and equipment in the Bronx and Westchester region. For 2014, Con Edison plans to spend approximately \$39 million towards storm hardening its radial distribution system.

Tree contacts have had a minimal impact on Con Edison's radial system due to the Company's enhanced tree trimming program. New criteria have been added to determine which sections of the operating areas require increased trimming. The criteria are based on worst performing feeders; 3-year average of historical "tree contact" data on the number of customers interrupted per feeder, outage frequency data, outage duration data, last trimming cycle, and auto-loop momentary interruption analysis. In addition, Con Edison will continue trimming on a two to three year cycle, increase removal of damaged or unhealthy hazard trees near high voltage feeders, and obtain additional clearance where Con Edison is performing significant storm hardening work.

Con Edison met its radial duration RPM target in 2013, but its performances the past two years were close to the threshold of 2.04 hours. This is of concern considering that Con Edison developed and implemented strategies to improve the duration of outages for its system in 2009 and was requested to perform a self assessment of duration improvement strategies in 2010. Even with the enhancements and modifications made in previous years, radial duration performance levels are not improving, particularly in Queens and the Bronx. Therefore, the Company's immediate efforts should focus on developing strategies targeted at improving reliability performance in the Bronx and Queens. These efforts should include means to effectively respond to extreme heat and manhole events. Staff will interact with the Company to ensure changes are implemented as well as monitor and report on the effectiveness of these efforts in future reports.

NATIONAL GRID

Table 2: National Grid’s Historic Performance Excluding Major Storms

Performance Metric	2009	2010	2011	2012	2013	5-Year Average
Frequency (SAIFI)	0.88	0.80	0.98	0.90	0.99	0.91
Duration (CAIDI)	1.91	1.98	1.95	2.04	1.96	1.97

National Grid serves approximately 1.60 million customers across upstate New York. The Company’s territories include metropolitan areas, such as Albany, Buffalo, and Syracuse, as well as many rural areas in northern New York and the Adirondacks.

For 2013, the Company achieved both of its RPM reliability targets. The 2013 frequency level is above the five year average, but well below the target of 1.13 set in 2011. For 2013, the frequency results were worse than recent years; this is due to storm events in three different regions with large customer impacts but not to the extent or duration that the regions qualified for major storm exclusions. The 2013 duration performance of 1.96 is consistent with its five year average and below the target of 2.05 hours.

As shown in Figure 5, tree contacts and equipment failures are the predominant causes of interruption throughout National Grid’s service territory. Tree contact interruptions were up from 2012 and significantly exceeded the five year average. The increase in tree related interruptions are attributed to storm events that did not result in major storm exclusions. Despite having increased interruptions due to tree contact, the length of the outages decreased by 6% in 2013 as compared to 2012. While tree contacts were still a significant portion of interruptions this year, the overall progress continues to be favorable. National Grid will continue to address tree contact issues through its vegetation management program which includes the aggressive removal of hazardous trees.

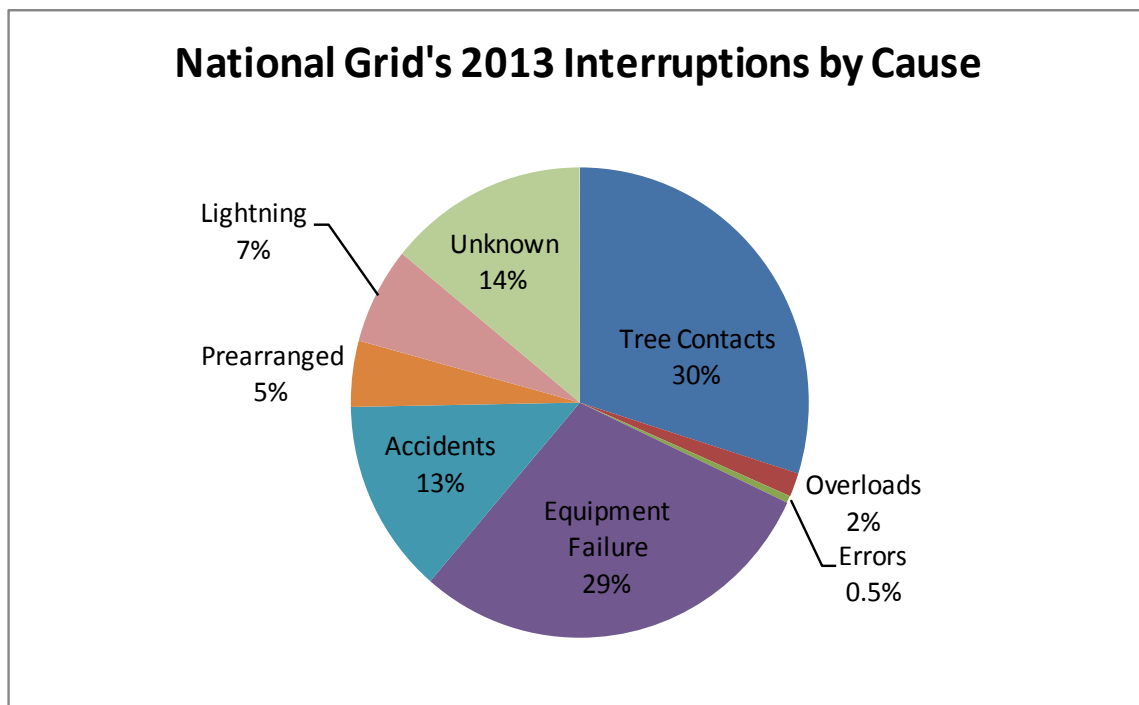


Figure 5: National Grid’s 2013 Interruptions by Cause

In 2013, equipment failure and accidents had a significant decrease when compared to 2012. In the equipment failure category, National Grid’s Inspection and Maintenance Program continues to provide increased reliability by addressing equipment issues found during inspections. National Grid also continues to address the worst performing feeders in each region. In 2013, the Company reported on a total of 105 worst performing feeders for all regions. These feeders were individually analyzed to determine the main causes of unsatisfactory performance and develop a course of action to be taken. Some of the actions taken such as recloser installations, increased side tap fusing, vegetation management, and Distribution Automation were completed during 2013, while other actions are planned for the next fiscal year. These projects are expected to increase feeder reliability and reduce the number of customers affected by future equipment failures. The customer benefits, including the extent to which reliability is increased, and the cost associated with these programs are reviewed quarterly by Staff.

On a regional basis, only the Central and Frontier Regions met both the frequency and duration target. Most of the region’s performances were slightly over their

targets, however, the Southwest and Northern Regions missed their frequency targets by a more considerable amount. The Southwest Region also performed poorly with regards to duration. The Company determined a number of interruptions in the Northern and Southwest Regions were sub-transmission related and plans to install Distribution Automation switches on these sub-transmission lines to minimize future impacts. Specifically, the switches will improve reliability by sectionalizing portions of the faulty lines during interruptions which reduces the number of customers interrupted. In addition, National Grid plans to address loading concerns and equipment condition issues in three substations.

NEW YORK STATE ELECTRIC AND GAS

Table 3: NYSEG’s Historic Performance Excluding Major Storms

Performance Metric	2009	2010	2011	2012	2013	5-Year Average
Frequency (SAIFI)	1.08	1.14	1.20	0.98	1.10	1.10
Duration (CAIDI)	2.00	1.98	2.07	2.00	1.93	2.00

Approximately 855,000 customers are served by NYSEG. The Company is primarily located in the Binghamton and the Finger Lakes regions, but has localized service regions, including areas near Plattsburgh, Brewster, Mechanicville, and Lancaster.

NYSEG’s frequency performance of 1.10 was similar to its five year average. The 2013 duration performance of 1.93 was below its five year average of 2.00 and the lowest since 2002. The Company met its RPM reliability targets of 1.20 for frequency and 2.08 for duration in 2013. On a divisional basis, the Brewster, Geneva, Ithaca, Lancaster, Liberty, and Plattsburgh Operating Divisions all had frequency and duration performances which were better than their established targets. The Mechanicville and Oneonta Divisions had frequency indices better than their targets while the Auburn, Binghamton, and Elmira Divisions all had duration indices better than their targets.

As shown in Figure 6, tree contacts, and equipment failures were the predominant causes of interruption throughout NYSEG's twelve operating divisions in 2013.¹² NYSEG historically has a high tree-caused frequency rate when compared to the other New York State utilities. In the past, NYSEG's vegetation management practice was to only trim single phase distribution circuits on an as needed basis. Accordingly, a significant percentage of single-phased distribution circuits in NYSEG's service territory have not been trimmed or cleared in decades. NYSEG stated it will focus on its distribution vegetation management efforts with the goal of long term reductions in tree related interruptions. Performance mechanisms linked to a minimum quantity of distribution miles cleared on a calendar year basis remain in place. The Company exceeded its target of performing 2,700 miles of distribution clearing in 2013, achieving an actual total of 2,850 miles. In addition, the Company also met its targeted spending level of \$20 million.

¹² In its annual report, NYSEG reported a sharp increase in interruptions due to accidents or events not under the Company's control in 2013. This was the second consecutive year that resulted in historically higher incidents attributed to this cause which resulted in Staff investigating the issue. We determined the increase in the indicators can largely be attributed to the coding of interruptions from trees outside of trimming area. The Company stated a decision was made at the corporate level in 2012 to segregate interruptions assigned to contacts caused by trees within the trimming area from those events caused by trees outside of the trimming area. As a result, the interruptions were inaccurately classed as Accidents. Staff is obtaining the corrected data for the past two years.

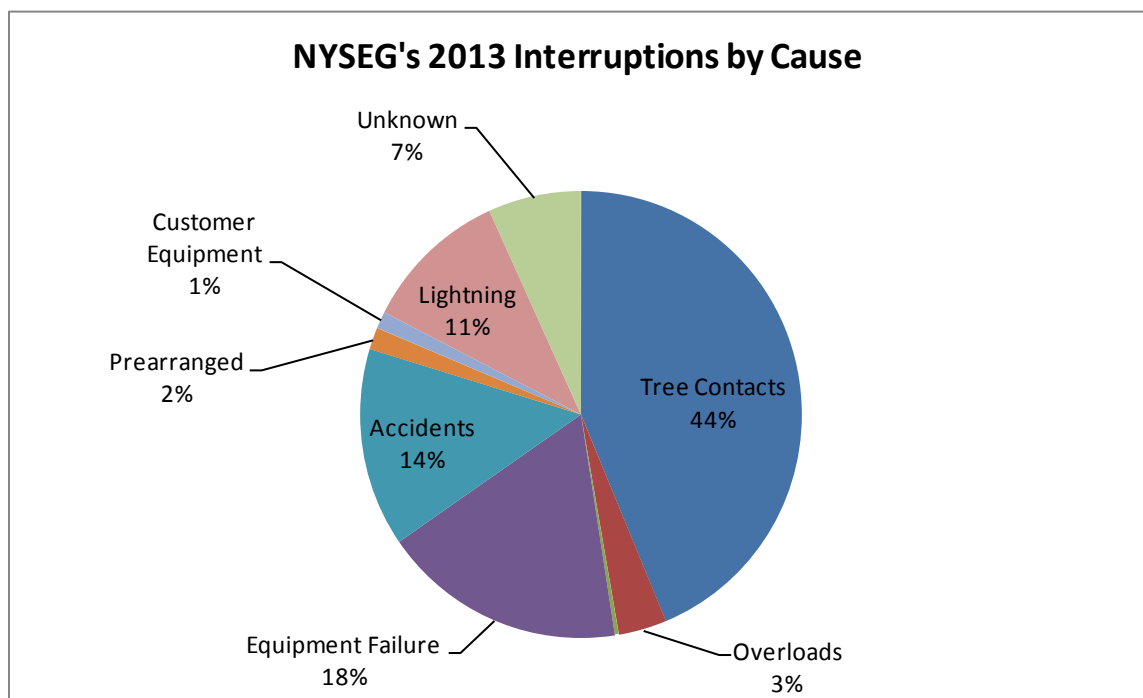


Figure 6: NYSEG's 2013 Interruptions by Cause

In March 2013, NYSEG filed a petition with the Commission for authorization to implement a full cycle distribution vegetation management plan and use a surcharge to fund the work. The plan would be rolled out in two distinct phases, reclamation and post-reclamation period. On October 1, 2013 the Commission issued an order denying NYSEG's request for a temporary surcharge for recovery of costs required to implement the plan as detailed in the petition.¹³ Instead, the Commission ordered the Company to file a plan for continuing progress during 2014 towards achieving a full cycle program. The order directed that the plan address circumstances in its Brewster Division where implementation of full cycle trimming may serve as an interim step towards a system-wide rollout.¹⁴ NYSEG submitted its 2014 Vegetation Management Plan on December 2, 2013 as directed, with a focus on the Brewster and Liberty Divisions. The plan includes 374 incremental miles in those areas for 2014, with an

¹³ Case 13-E-0117, New York State Electric & Gas Corporation - Petition for Authorization to Implement Full Cycle Distribution Vegetation Management, Order Denying Petition and Establishing Further Procedures (issued October 1, 2013).

¹⁴ The Brewster Division has been identified as an area where tree density was notably high and their proximity to distribution lines were especially close.

emphasis on pre-planning activities to refine the plan to maximize long term benefits and reduce interruptions.

ROCHESTER GAS AND ELECTRIC

Table 4: RG&E’s Historic Performance Excluding Major Storms

Performance Metric	2009	2010	2011	2012	2013	5-Year Average
Frequency (SAIFI)	0.59	0.69	0.87	0.74	0.73	0.72
Duration (CAIDI)	1.80	1.71	1.85	1.79	1.82	1.79

RG&E serves approximately 367,000 customers over its franchise area. The Company is comprised of four service divisions: Canandaigua, Genesee Valley, Lakeshore, and Rochester, with the Rochester division accounting for approximately 80% of its customer base. Consequently, RG&E’s system wide reliability statistics generally reflect those of the Rochester division.

For the past five years, RG&E has consistently maintained high levels of electric service reliability to its customers for both frequency and duration. In 2013, RG&E outperformed its corporate RPM targets of 0.90 for frequency and 1.90 for duration that were established in its most recent rate order. While RG&E met its reliability targets at the corporate level in 2013, only two of its four divisions, Rochester and Canandaigua, satisfied both the frequency and duration targets at the division level.

The Genesee and Lakeshore Divisions met their frequency targets, but missed their duration targets. For rural areas like these, reliability performances can easily fluctuate due to the lower population, longer feeders, less feeder interconnections, and potential road difficulties during minor storms. Corrective actions to improve restoration times in the Genesee and Lakeshore Divisions center on assembling/dispatching crews to the trouble scene faster and tree trimming.

Overall, the three major causes for interruptions throughout RG&E’s service divisions were equipment failures, tree contacts, and accidents as shown in Figure 7. With regard to tree interruptions, RG&E will continue trimming distribution and transmission lines for hot spot and maintenance clearing. It should be noted that RG&E

is in the fourth year of its first five year distribution vegetation management cycle program and its companywide statistics indicate the number of interruptions, customers affected, and interruption hours related to tree contacts have all been going down since 2011.

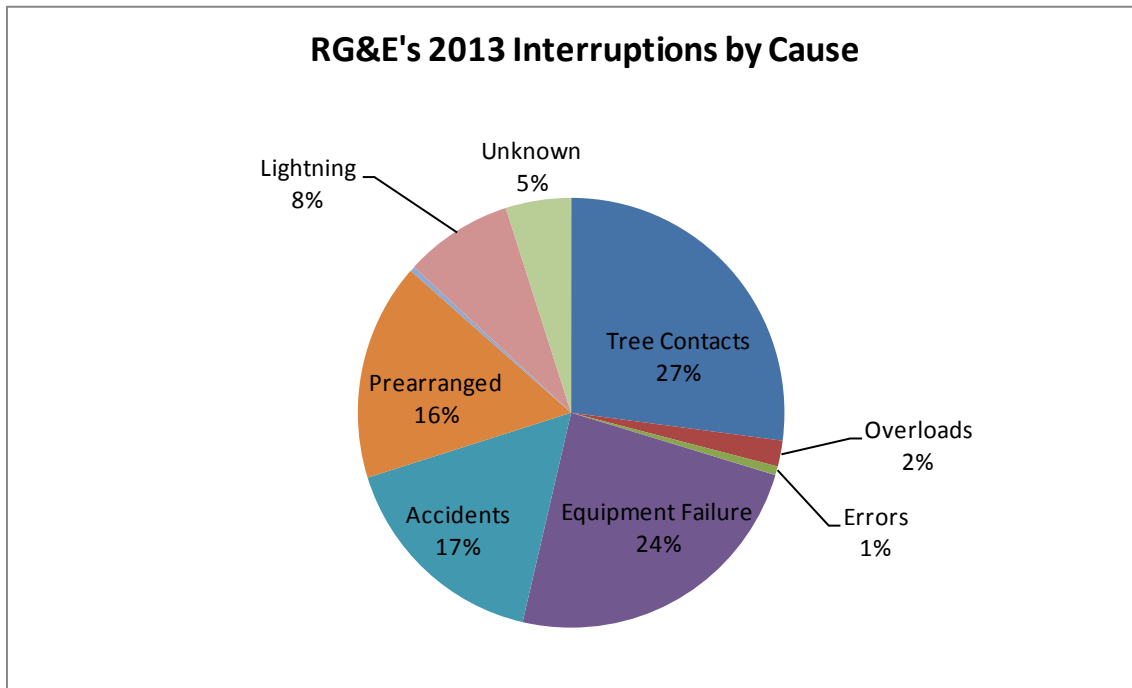


Figure 7: RG&E's 2013 Interruptions by Cause

Other reliability projects for 2014 include projects that will refurbish and strengthen existing distribution circuits through cable, pole, insulator, or transformer replacements, or upgrades. RG&E also plans to accelerate infrared surveys from 20% to 100% of mainline distribution along its worst performing feeders. Finally, RG&E is developing strategies to reduce outage times by developing optimized crew response routes and reviewing scheduled worker assignments to determine ways to improve response time to each circuit for after hour trouble. Staff believes that the amount of time, effort, and associated expenditures RG&E has dedicated toward these infrastructure and other improvements will continue to improve the system reliability going forward.

CENTRAL HUDSON GAS AND ELECTRIC

Table 5: Central Hudson’s Historic Performance Excluding Major Storms

Performance Metric	2009	2010	2011	2012	2013	5-Year Average
Frequency (SAIFI)	1.38	1.27	1.20	1.00	1.02	1.17
Duration (CAIDI)	2.22	2.42	2.26	2.38	2.30	2.32

Central Hudson serves approximately 300,000 customers in parts of the Hudson Valley Region. The main operating divisions of Central Hudson are Catskill, Fishkill, Kingston, Newburgh, and Poughkeepsie. About 70% of Central Hudson’s territory is within the Kingston, Newburgh, and Poughkeepsie Divisions.

In 2013, Central Hudson met its corporate targets for both frequency and duration. Central Hudson’s frequency performance of 1.02 in 2013 is the second best performance over the last five years and only slightly higher than its performance in 2012. Central Hudson’s duration performance in 2013 was 2.30, which is similar to the five year average. On a divisional level, the Fishkill, Poughkeepsie, and Newburgh Operating Divisions all had frequency indices which were better than their established target of 1.20, while the Catskill and Kingston Operating Divisions had frequency indices over their goal of 1.00. The Catskill Division exceeded its frequency target by 3%, primarily due to tree contacts, while the Kingston Division exceeded its frequency target by 53%, also due to tree contacts. In 2014, 14 circuits in the Kingston Division are scheduled for trimming. These circuits serve over 21,000 customers or approximately 33% of the district’s total customer count. The scheduled trimming is expected to significantly improve the tree related frequency index in the district. All of the five operating divisions had duration performances that exceeded their established individual district targets.

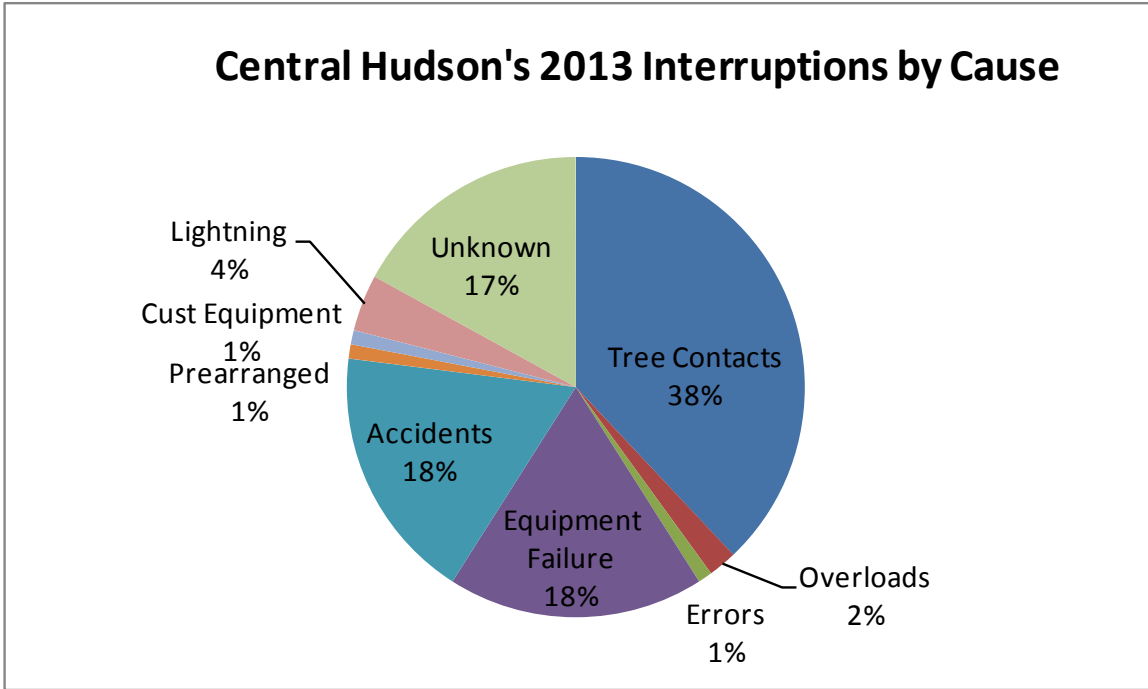


Figure 8: Central Hudson’s 2013 Interruptions by Cause

The pie chart shows that the majority of interruptions are caused by tree contacts. It is important to note, however, that the overall number of incidents involving trees has shown a decreasing trend since Central Hudson’s adoption of improved vegetation management programs. During 2013, Central Hudson saw the second lowest number of tree incidents in the last eight years. The trend in decreasing interruptions from trees is shown in Figure 9 below. Based on this trending, Staff is satisfied with the Company’s efforts regarding vegetation management and would encourage that the program continues to further reduce interruptions.

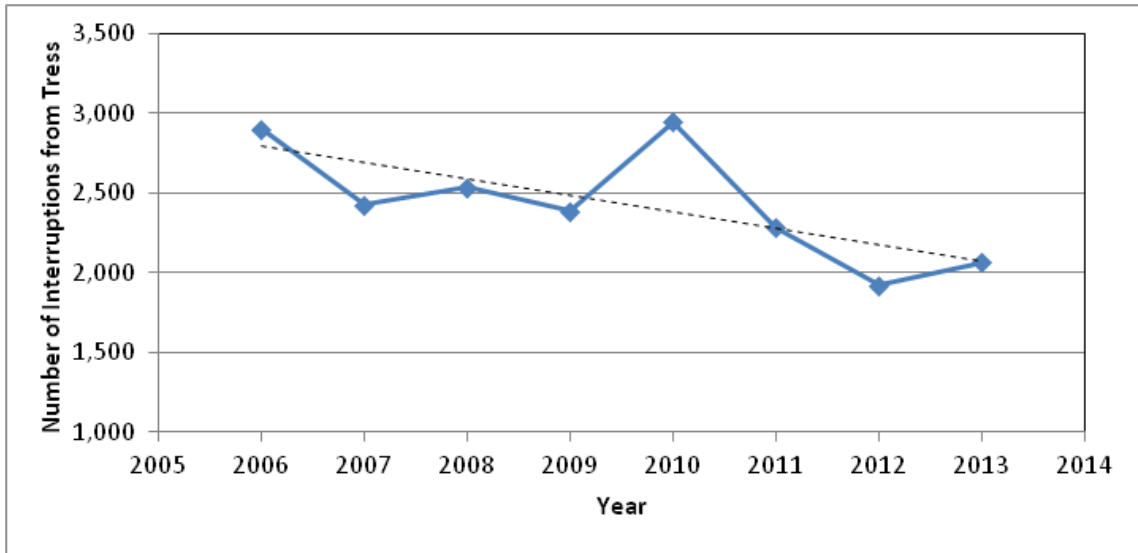


Figure 9: Central Hudson’s Interruptions from Trees

Central Hudson has also been working on multiple programs and projects to increase its reliability performance. Among these projects are integration of remote communication for automatic load transfer switches, switched capacitors, breaker replacement, 14.4kV cable replacement, and distribution line infrared surveys of the three-phase mainline. The Company is also exploring changing fuse sizes to minimize interruptions. In 2013, Central Hudson had the lowest equipment failure frequency in the last 10 years, a trend they attribute to the replacement of older style cutouts with more resilient polymer cutouts, installation of more electronic reclosers, and continued replacement of aging infrastructure. As a result of these activities, the number of cutout failures has steadily decreased every year since 2008 and open circuits are usually cleared by reclosers in a short enough time to go unnoticed to customers.

Finally, Central Hudson is in the process of developing a model-based Distribution Management System, which will adapt as technology advances and priorities change. The system will be able to provide visualization tools for evaluating, planning, and operations management. Central Hudson believes these improvements will increase its system reliability. The communications devices installed in reclosers and automatic load transfer switches will contribute to shorter interruption times. The continuous replacement and repair of aging infrastructure will improve system performance during

storms and other major interruptions. Overall, Central Hudson has reached its goals and shows continuous improvement of its system reliability.

ORANGE & ROCKLAND

Table 6: O&R’s Historic Performance Excluding Major Storms

Performance Metric	2009	2010	2011	2012	2013	5-Year Average
Frequency (SAIFI)	1.03	1.21	0.97	0.94	0.89	1.01
Duration (CAIDI)	1.67	1.79	1.61	1.68	1.62	1.67

Note: Data presented in red represents a failure to meet the RPM target for a given year.

Orange & Rockland serves approximately 221,000 customers in three New York counties along the New Jersey and Pennsylvania border. In 2013, the Company’s frequency performance was the best in the Company’s history, well below the five year average. The Company’s duration improved from 2012 and is better than the five year average. On a divisional basis, all three divisions performed better than the service standards in both frequency and duration. With such positive performance, it is not surprising that Orange & Rockland performed better than its RPM reliability targets of 1.20 for frequency and 1.85 for duration.

As shown in Figure 10, equipment failures and tree contacts continue to be the cause of a majority of the interruptions in 2013. After a five year trend in slowly decreasing equipment failures, 2013 brought a jump in equipment failures. Equipment failures had an increase of approximately 18 % more occurrences compared to 2012. Of the approximately 1,000 equipment failures, 282 were connector/splice failures on overhead secondary lines and 154 overhead transformer failures. Overhead secondary splices and overhead transformers also accounted for the majority of failures in 2012.

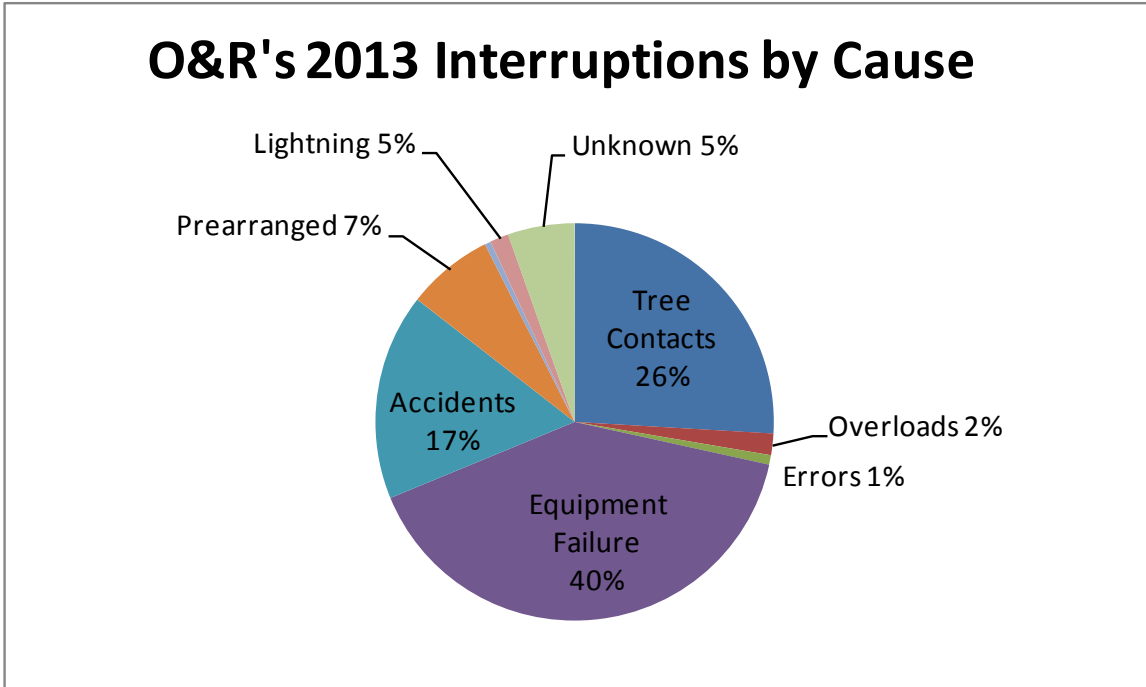


Figure 10: Orange & Rockland’s 2013 Interruptions by Cause

With regard to tree contacts, its second leading cause of interruptions, the Company has an effective vegetation management/tree trimming program now in place after seeing a decline at the end of the last decade. In fact, the number of tree interruptions has been decreasing for the last five years. The trend in decreasing interruptions from trees is shown in Figure 11. In 2013, there was a decrease from 2012 of approximately 200 tree contact incidences, totaling near 635. This is more than 250 fewer than the five year average and best performance since 2001. It is also a large improvement as compared with 2009 in which tree contact outages approached 1,000 in number.

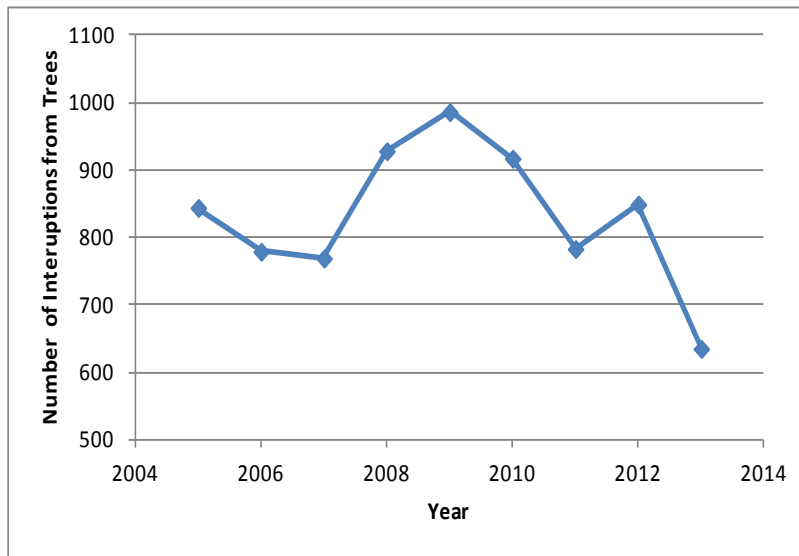


Figure 11: Orange & Rockland’s Interruptions from Trees

Orange & Rockland continues to address reliability issues resulting from equipment failures through capital improvement/resiliency programs. The Company’s infrastructure improvement projects and service reliability programs, with primary contribution from its enhanced Distribution Automation (DA) program, most significantly decrease the frequency of interruptions by focusing on reducing and minimizing the large customer count interruptions. Orange & Rockland’s Snake Hill substation and associated smart grid circuits have been in full operation since June 2013. This substation and associated DA devices are a culmination of the Company’s Smart Grid Pilot Project targeted at improving reliability and the monitoring of real-time conditions on the distribution system. The Company is monitoring the substation for results and benefits associated with these efforts. Additionally, several new substations have been constructed and are planned to be constructed in the next several years which the Company expects to continue to reduce the number of equipment failures.¹⁵ In addition to replacing aging equipment, these substations include additional resiliency and reliability characteristics, such as staggered circuit configurations and the use of spacer cables at substation exits. These improvements come from lessons learned in the

¹⁵ Case 11-E-0408, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Orange & Rockland Utilities, Inc. for Electric Service, Order Adopting Terms of Joint Proposal, with Modification, and Establishing Electric Rate Plan (issued June 15, 2012).

aftermath of recent storms, such as Sandy and Irene. Staff will continue to monitor and verify these efforts as progress is made going forward.

PSEG-LI

Table 7: PSEG-LI’s Historic Performance Excluding Major Storms

Performance Metric	2009	2010	2011	2012	2013	5-Year Average
Frequency (SAIFI)	0.74	0.73	0.75	0.67	0.71	0.72
Duration (CAIDI)	1.17	1.11	1.14	1.26	1.13	1.16

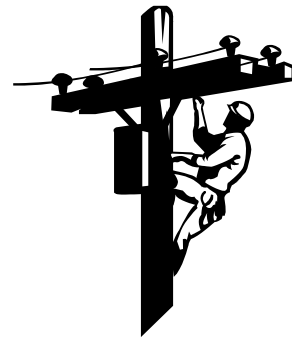
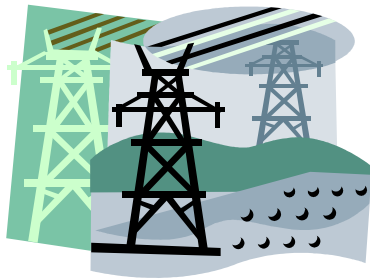
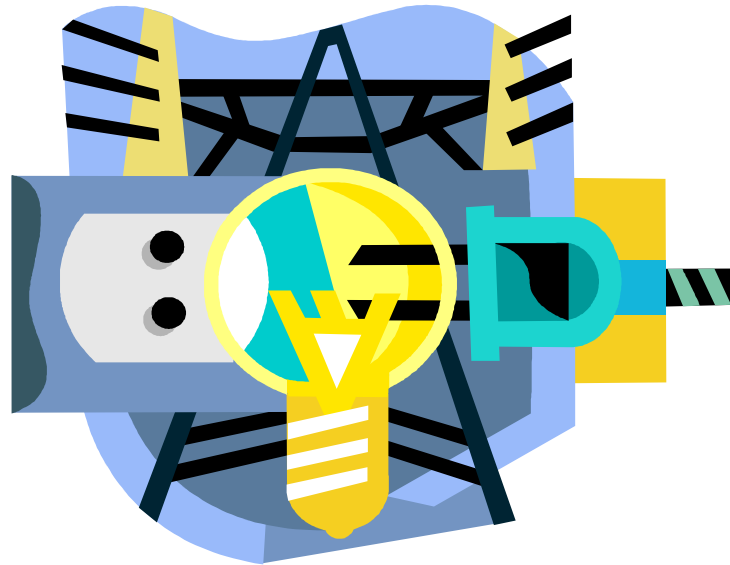
PSEG-LI serves approximately 1,100,000 customers on Long Island. The utility’s territory includes Nassau County, Suffolk County, and the Rockaway Peninsula. In 2013, the Company’s frequency performance was its second best in the last five years, and slightly better than the five year average. The Company’s duration improved from 2012 and is also better than the five year average. Unlike the other utilities, PSEG-LI does not have rate orders or RPMs by the Commission. Instead, performance metrics were set as part of a Management Service Agreement (MSA). The frequency and duration targets of 0.83 and 1.26, respectively, were satisfied for 2013.

PSEG-LI has only recently started operating and maintaining the electric system on Long Island. Prior to PSEG-LI, National Grid was operating the system under the MSA and it supplied interruption data to the Commission to assist in its statewide analysis. It is our expectation that the PSEG-LI discussion will expand in future years and more closely match the level of discussion provided for the other utilities.

APPENDIX

2013 INTERRUPTION REPORT

**The 2013
Interruption
Report**



Office of Electricity, Gas, and Water

June 2014

ATTACHMENT

Definitions and Explanations of Terms Used in The Statewide Electric Service Interruption Report

Interruption is the loss of service for five minutes or more.

Customer Hours is the time a customer is without electric service.

Customers Affected is the number of customers without electric service.

Customer Served is the number of customers as of the last day of the current year. For example, for the calendar year of 2014, customers served is the number of customers as of December 31, 2014. For indices using customers served, the previous year is used.

Frequency (SAIFI) measures the average number of interruptions experienced by customers served by the utility. It is the customers affected divided by the customers served at the end of the previous year.

Duration (CAIDI) measures the average time that an affected customer is out of electric service. It is the customer hours divided by the customers affected.

Availability (SAIDI) is the average amount of time a customer is out of service during a year. It is the customer hours divided by the number of customers served at the end of the year. Mathematically it is SAIFI multiplied by CAIDI.

Interruptions per 1,000 Customers Served is the number of interruptions divided by the number of customers served at the end of the previous year, divided by 1,000.

Major Storm is defined as any storm which causes service interruptions of at least ten percent of customers in an operating area, or if the interruptions last for 24 hours or more.

Operating Area is the geographical subdivision of each electric utilities franchise territory. These are also called regions, divisions, or districts.

Most of the data is presented in two ways, with major storms included and major storms excluded. Major storms tend to distort a utility's performance trend. Tables and graphs that exclude major storms illustrate interruptions that are under a utility's control. It portrays a utility's system facilities under normal conditions, although this can be misleading because interruptions during "normal" bad weather are included and it is difficult to analyze from year to year.

The first two tables show frequency and duration indices for the last five years for each utility and Statewide with and without Con Edison data. Much of the Con Edison distribution system consists of a secondary network. In a secondary network, a customer is fed multiple supplies, significantly reducing the probability of interruptions.

**COMPARISON OF SERVICE RELIABILITY INDICES
(EXCLUDING MAJOR STORMS)**

	2009	2010	2011	2012	2013	5 YR AVG
CHGE						
FREQUENCY	1.38	1.27	1.20	1.00	1.02	1.17
DURATION	2.22	2.42	2.26	2.38	2.30	2.32
CONED						
FREQUENCY	0.10	0.13	0.15	0.10	0.12	0.12
DURATION	2.27	2.57	2.71	2.39	2.67	2.52
PSEG-LI						
FREQUENCY	0.74	0.73	0.75	0.67	0.71	0.72
DURATION	1.17	1.11	1.14	1.26	1.13	1.16
NATIONAL GRID						
FREQUENCY	0.88	0.80	0.98	0.90	0.99	0.91
DURATION	1.91	1.98	1.95	2.04	1.96	1.97
NYSEG						
FREQUENCY	1.08	1.14	1.20	0.98	1.10	1.10
DURATION	2.00	1.98	2.07	2.00	1.93	2.00
O&R						
FREQUENCY	1.03	1.21	0.97	0.94	0.89	1.01
DURATION	1.67	1.79	1.61	1.68	1.62	1.67
RG&E						
FREQUENCY	0.59	0.69	0.87	0.74	0.73	0.72
DURATION	1.80	1.71	1.85	1.79	1.82	1.79
STATEWIDE (WITHOUT CONED)						
FREQUENCY	0.90	0.89	0.97	0.85	0.92	0.91
DURATION	1.79	1.82	1.82	1.87	1.79	1.82
STATEWIDE (WITH CONED)						
FREQUENCY	0.56	0.57	0.62	0.53	0.57	0.57
DURATION	1.83	1.89	1.91	1.91	1.87	1.88

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

**COMPARISON OF SERVICE RELIABILITY INDICES
(INCLUDING MAJOR STORMS)**

	2009	2010	2011	2012	2013	5 YR AVG
CHGE						
FREQUENCY	1.64	2.61	2.71	1.80	1.06	1.96
DURATION	2.48	10.94	15.95	8.55	2.36	8.06
CONED						
FREQUENCY	0.11	0.23	0.26	0.38	0.13	0.22
DURATION	3.06	15.05	15.45	71.91	2.71	21.64
PSEG-LI						
FREQUENCY	0.81	1.04	1.36	1.84	0.89	1.19
DURATION	1.25	1.84	9.69	22.55	1.65	7.40
NATIONAL GRID						
FREQUENCY	1.01	0.98	1.48	1.13	1.39	1.20
DURATION	2.01	2.46	5.03	2.67	3.61	3.15
NYSEG						
FREQUENCY	1.47	1.84	2.44	1.85	1.41	1.80
DURATION	2.68	4.09	9.86	12.63	2.34	6.32
O&R						
FREQUENCY	1.15	1.79	2.12	1.86	1.02	1.59
DURATION	1.89	4.76	15.32	34.66	2.06	11.74
RG&E						
FREQUENCY	0.73	0.77	1.05	0.92	0.91	0.88
DURATION	2.03	2.18	1.99	3.01	2.75	2.39
STATEWIDE (WITHOUT CONED)						
FREQUENCY	1.07	1.29	1.72	1.51	1.19	1.36
DURATION	2.09	4.09	8.92	13.52	2.76	6.27
STATEWIDE (WITH CONED)						
FREQUENCY	0.67	0.84	1.10	1.03	0.73	0.87
DURATION	2.16	5.35	9.58	22.70	2.75	8.51

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

STATEWIDE (WITHOUT CON ED)

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	55,995	54,310	53,557	49,827	52,863	53,310
Number of Customer-Hours	7,116,848	7,197,156	7,868,243	7,086,646	7,321,410	7,318,061
Number of Customers Affected	3,976,492	3,962,829	4,319,688	3,799,744	4,090,130	4,029,777
Number of Customers Served	4,447,519	4,447,050	4,452,075	4,468,023	4,466,568	4,456,247
Average Duration Per Customer Affected (CAIDI)	1.79	1.82	1.82	1.87	1.79	1.82
Average Duration Per Customers Served	1.61	1.62	1.77	1.59	1.64	1.65
Interruptions Per 1000 Customers Served	12.65	12.21	12.04	11.19	11.83	11.99
Number of Customers Affected Per Customer Served (SAIFI)	0.90	0.89	0.97	0.85	0.92	0.91

STATEWIDE (WITH CON ED)

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	70,930	68,221	68,719	60,526	66,804	67,040
Number of Customer-Hours	7,891,155	8,284,480	9,195,778	7,914,335	8,380,016	8,333,153
Number of Customers Affected	4,316,932	4,385,672	4,809,183	4,145,730	4,487,270	4,428,957
Number of Customers Served	7,719,245	7,738,793	7,772,888	7,806,754	7,815,448	7,770,626
Average Duration Per Customer Affected (CAIDI)	1.83	1.89	1.91	1.91	1.87	1.88
Average Duration Per Customers Served	1.03	1.07	1.19	1.02	1.07	1.08
Interruptions Per 1000 Customers Served	9.25	8.84	8.88	7.79	8.56	8.66
Number of Customers Affected Per Customer Served (SAIFI)	0.56	0.57	0.62	0.53	0.57	0.57

** For those indices that use Customers Served, Customers Served is the December

STATEWIDE (WITHOUT CON ED)

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	61,841	72,135	97,586	88,800	63,885	76,849
Number of Customer-Hours	9,923,723	23,466,391	68,027,851	90,905,843	14,653,454	41,395,452
Number of Customers Affected	4,752,148	5,741,806	7,630,118	6,721,953	5,315,365	6,032,278
Number of Customers Served	4,447,519	4,447,050	4,452,075	4,468,023	4,466,568	4,456,247
Average Duration Per Customer Affected (CAIDI)	2.09	4.09	8.92	13.52	2.76	6.27
Average Duration Per Customers Served	2.24	5.28	15.30	20.42	3.28	9.30
Interruptions Per 1000 Customers Served	13.97	16.22	21.94	19.95	14.30	17.28
Number of Customers Affected Per Customer Served (SAIFI)	1.07	1.29	1.72	1.51	1.19	1.36

STATEWIDE (WITH CON ED)

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	77,181	91,471	120,005	116,263	78,024	96,589
Number of Customer-Hours	11,046,399	34,693,862	81,434,151	181,026,042	15,785,340	64,797,159
Number of Customers Affected	5,118,841	6,487,588	8,498,092	7,975,227	5,732,710	6,762,492
Number of Customers Served	7,719,245	7,738,793	7,772,888	7,806,754	7,815,448	7,770,626
Average Duration Per Customer Affected (CAIDI)	2.16	5.35	9.58	22.70	2.75	8.51
Average Duration Per Customers Served	1.44	4.49	10.52	23.29	2.02	8.35
Interruptions Per 1000 Customers Served	10.06	11.85	15.51	14.96	9.99	12.47
Number of Customers Affected Per Customer Served (SAIFI)	0.67	0.84	1.10	1.03	0.73	0.87

** For those indices that use Customers Served, Customers Served is the December

CENTRAL HUDSON

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	6,705	7,762	6,293	5,566	5,497	6,365
Number of Customer-Hours	910,250	922,392	814,052	716,105	708,055	814,171
Number of Customers Affected	410,516	380,489	359,769	301,232	307,889	351,979
Number of Customers Served	300,621	299,557	299,971	300,537	299,591	300,055
Average Duration Per Customer Affected (CAIDI)	2.22	2.42	2.26	2.38	2.30	2.32
Average Duration Per Customers Served	3.05	3.07	2.72	2.39	2.36	2.72
Interruptions Per 1000 Customers Served	22.47	25.82	21.01	18.56	18.29	21.23
Number of Customers Affected Per Customer Served (SAIFI)	1.38	1.27	1.20	1.00	1.02	1.17

CENTRAL HUDSON

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	7,609	11,994	12,076	8,603	5,665	9,189
Number of Customer-Hours	1,211,827	8,597,567	12,930,372	4,620,086	751,644	5,622,299
Number of Customers Affected	488,732	785,806	810,464	540,447	318,352	588,760
Number of Customers Served	300,621	299,557	299,971	300,537	299,591	300,055
Average Duration Per Customer Affected (CAIDI)	2.48	10.94	15.95	8.55	2.36	8.06
Average Duration Per Customers Served	4.06	28.60	43.16	15.40	2.50	18.75
Interruptions Per 1000 Customers Served	25.50	39.90	40.31	28.68	18.85	30.65
Number of Customers Affected Per Customer Served (SAIFI)	1.64	2.61	2.71	1.80	1.06	1.96

* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

CON ED (SYSTEM)

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	14,935	13,911	15,162	10,699	13,941	13,730
Number of Customer-Hours	774,307	1,087,325	1,327,534	827,689	1,058,605	1,015,092
Number of Customers Affected	340,440	422,843	489,495	345,986	397,140	399,181
Number of Customers Served	3,271,726	3,291,743	3,320,813	3,338,731	3,348,880	3,314,379
Average Duration Per Customer Affected (CAIDI)	2.27	2.57	2.71	2.39	2.67	2.52
Average Duration Per Customers Served	0.24	0.33	0.40	0.25	0.32	0.31
Interruptions Per 1000 Customers Served	4.60	4.25	4.61	3.22	4.18	4.17
Number of Customers Affected Per Customer Served (SAIFI)	0.10	0.13	0.15	0.10	0.12	0.12

CON ED (SYSTEM)

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	15,340	19,336	22,419	27,463	14,139	19,739
Number of Customer-Hours	1,122,677	11,227,471	13,406,300	90,120,199	1,131,886	23,401,706
Number of Customers Affected	366,693	745,782	867,974	1,253,274	417,345	730,214
Number of Customers Served	3,271,726	3,291,743	3,320,813	3,338,731	3,348,880	3,314,379
Average Duration Per Customer Affected (CAIDI)	3.06	15.05	15.45	71.91	2.71	21.64
Average Duration Per Customers Served	0.35	3.43	4.07	27.14	0.34	7.07
Interruptions Per 1000 Customers Served	4.73	5.91	6.81	8.27	4.23	5.99
Number of Customers Affected Per Customer Served (SAIFI)	0.11	0.23	0.26	0.38	0.13	0.22

* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

CON ED (NETWORK)

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	8,650	7,434	8,151	4,758	7,574	7,313
Number of Customer-Hours	273,705	370,405	419,830	187,740	348,433	320,023
Number of Customers Affected	52,994	54,555	61,450	29,645	45,294	48,788
Number of Customers Served	2,385,760	2,403,818	2,439,565	2,454,427	2,461,468	2,429,008
Average Duration Per Customer Affected (CAIDI)	5.16	6.79	6.83	6.33	7.69	6.56
Average Duration Per Customers Served	0.12	0.16	0.17	0.08	0.14	0.13
Interruptions Per 1000 Customers Served	3.66	3.12	3.39	1.95	3.09	3.04
Number of Customers Affected Per Customer Served (SAIFI)	0.022	0.023	0.026	0.012	0.018	0.020

* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

CON ED (RADIAL)

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	6,285	6,477	7,011	5,941	6,367	6,416
Number of Customer-Hours	500,602	716,920	907,704	639,949	710,172	695,069
Number of Customers Affected	287,446	368,288	428,045	316,341	351,846	350,393
Number of Customers Served	885,966	887,925	881,248	884,304	887,412	885,371
Average Duration Per Customer Affected (CAIDI)	1.74	1.95	2.12	2.02	2.02	1.97
Average Duration Per Customers Served	0.57	0.81	1.02	0.73	0.80	0.79
Interruptions Per 1000 Customers Served	7.11	7.31	7.90	6.74	7.20	7.25
Number of Customers Affected Per Customer Served (SAIFI)	0.33	0.42	0.48	0.36	0.40	0.40

CON ED (RADIAL)

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	6,690	11,902	14,268	22,705	6,565	12,426
Number of Customer-Hours	848,971	10,857,066	12,986,469	89,932,459	783,453	23,081,684
Number of Customers Affected	313,699	691,227	806,524	1,223,629	372,051	681,426
Number of Customers Served	885,966	887,925	881,248	884,304	887,412	885,371
Average Duration Per Customer Affected (CAIDI)	2.71	15.71	16.10	73.50	2.11	22.02
Average Duration Per Customers Served	0.96	12.25	14.63	102.05	0.89	26.16
Interruptions Per 1000 Customers Served	7.57	13.43	16.07	25.76	7.42	14.05
Number of Customers Affected Per Customer Served (SAIFI)	0.36	0.78	0.91	1.39	0.42	0.77

* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

NATIONAL GRID

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	15,915	13,822	14,442	13,506	14,160	14,369
Number of Customer-Hours	2,645,775	2,529,126	3,048,983	2,926,731	3,102,175	2,850,558
Number of Customers Affected	1,387,131	1,277,727	1,564,208	1,434,256	1,585,651	1,449,795
Number of Customers Served	1,589,810	1,595,037	1,601,552	1,603,982	1,607,502	1,599,577
Average Duration Per Customer Affected (CAIDI)	1.91	1.98	1.95	2.04	1.96	1.97
Average Duration Per Customers Served	1.67	1.59	1.91	1.83	1.93	1.79
Interruptions Per 1000 Customers Served	10.05	8.69	9.05	8.43	8.83	9.01
Number of Customers Affected Per Customer Served (SAIFI)	0.88	0.80	0.98	0.90	0.99	0.91

NATIONAL GRID

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	17,060	15,571	20,881	16,440	19,069	17,804
Number of Customer-Hours	3,214,148	3,824,438	11,882,312	4,811,549	8,047,050	6,355,900
Number of Customers Affected	1,599,090	1,553,727	2,363,763	1,804,502	2,232,186	1,910,654
Number of Customers Served	1,589,810	1,595,037	1,601,552	1,603,982	1,607,502	1,599,577
Average Duration Per Customer Affected (CAIDI)	2.01	2.46	5.03	2.67	3.61	3.15
Average Duration Per Customers Served	2.03	2.41	7.45	3.00	5.02	3.98
Interruptions Per 1000 Customers Served	10.77	9.79	13.09	10.27	11.89	11.16
Number of Customers Affected Per Customer Served (SAIFI)	1.01	0.98	1.48	1.13	1.39	1.20

* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

NYSEG

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	9,643	9,777	10,272	9,424	10,022	9,828
Number of Customer-Hours	1,848,599	1,934,747	2,127,891	1,675,701	1,814,646	1,880,317
Number of Customers Affected	922,448	975,375	1,028,868	839,427	940,750	941,374
Number of Customers Served	858,712	856,474	854,682	858,396	855,347	856,722
Average Duration Per Customer Affected (CAIDI)	2.00	1.98	2.07	2.00	1.93	2.00
Average Duration Per Customers Served	2.16	2.25	2.48	1.96	2.11	2.19
Interruptions Per 1000 Customers Served	11.25	11.39	11.99	11.03	11.68	11.47
Number of Customers Affected Per Customer Served (SAIFI)	1.08	1.14	1.20	0.98	1.10	1.10

NYSEG

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	11,948	14,976	19,743	17,850	11,729	15,249
Number of Customer-Hours	3,369,824	6,445,599	20,636,612	19,975,449	2,830,224	10,651,542
Number of Customers Affected	1,257,464	1,576,105	2,093,127	1,581,500	1,210,993	1,543,838
Number of Customers Served	858,712	856,474	854,682	858,396	855,347	856,722
Average Duration Per Customer Affected (CAIDI)	2.68	4.09	9.86	12.63	2.34	6.32
Average Duration Per Customers Served	3.93	7.51	24.09	23.37	3.30	12.44
Interruptions Per 1000 Customers Served	13.93	17.44	23.05	20.88	13.66	17.79
Number of Customers Affected Per Customer Served (SAIFI)	1.47	1.84	2.44	1.85	1.41	1.80

* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

O&R

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	2,987	2,897	2,661	2,652	2,449	2,729
Number of Customer-Hours	375,064	472,939	338,760	347,689	316,486	370,187
Number of Customers Affected	223,976	263,752	211,048	206,798	195,880	220,291
Number of Customers Served	218,035	218,545	219,385	220,129	220,813	219,381
Average Duration Per Customer Affected (CAIDI)	1.67	1.79	1.61	1.68	1.62	1.67
Average Duration Per Customers Served	1.73	2.17	1.55	1.58	1.44	1.69
Interruptions Per 1000 Customers Served	13.74	13.29	12.18	12.09	11.13	12.48
Number of Customers Affected Per Customer Served (SAIFI)	1.03	1.21	0.97	0.94	0.89	1.01

O&R

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	3,111	3,646	4,223	3,326	2,570	3,375
Number of Customer-Hours	471,941	1,857,491	7,106,724	14,130,288	460,209	4,805,331
Number of Customers Affected	249,064	389,937	463,940	407,678	223,754	346,875
Number of Customers Served	218,035	218,545	219,385	220,129	220,813	219,381
Average Duration Per Customer Affected (CAIDI)	1.89	4.76	15.32	34.66	2.06	11.74
Average Duration Per Customers Served	2.17	8.52	32.52	64.41	2.09	21.94
Interruptions Per 1000 Customers Served	14.31	16.72	19.32	15.16	11.67	15.44
Number of Customers Affected Per Customer Served (SAIFI)	1.15	1.79	2.12	1.86	1.02	1.59

* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

PSEG-LI

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	17,795	17,180	16,767	15,625	17,672	17,008
Number of Customer-Hours	958,679	905,031	959,212	945,305	890,558	931,757
Number of Customers Affected	821,723	811,969	842,816	752,311	791,039	803,972
Number of Customers Served	1,114,716	1,117,281	1,115,815	1,118,610	1,115,781	1,116,441
Average Duration Per Customer Affected (CAIDI)	1.17	1.11	1.14	1.26	1.13	1.16
Average Duration Per Customers Served	0.86	0.81	0.86	0.85	0.80	0.84
Interruptions Per 1000 Customers Served	16.02	15.41	15.01	14.00	15.80	15.25
Number of Customers Affected Per Customer Served (SAIFI)	0.74	0.73	0.75	0.67	0.71	0.72

PSEG-LI

Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	19,003	22,867	37,368	39,026	21,401	27,933
Number of Customer-Hours	1,121,723	2,125,507	14,715,268	46,371,469	1,648,627	13,196,519
Number of Customers Affected	894,595	1,153,884	1,519,331	2,056,428	997,229	1,324,293
Number of Customers Served	1,114,716	1,117,281	1,115,815	1,118,610	1,115,781	1,116,441
Average Duration Per Customer Affected (CAIDI)	1.25	1.84	9.69	22.55	1.65	7.40
Average Duration Per Customers Served	1.01	1.91	13.17	41.56	1.47	11.82
Interruptions Per 1000 Customers Served	17.11	20.51	33.45	34.98	19.13	25.03
Number of Customers Affected Per Customer Served (SAIFI)	0.81	1.04	1.36	1.84	0.89	1.19

* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

RG&E

Excluding Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	2,950	2,872	3,122	3,054	3,063	3,012
Number of Customer-Hours	378,481	432,921	579,346	475,116	489,490	471,071
Number of Customers Affected	210,698	253,517	312,979	265,720	268,921	262,367
Number of Customers Served	365,625	360,156	360,670	366,369	367,534	364,071
Average Duration Per Customer Affected (CAIDI)	1.80	1.71	1.85	1.79	1.82	1.79
Average Duration Per Customers Served	1.05	1.18	1.61	1.32	1.34	1.30
Interruptions Per 1000 Customers Served	8.20	7.86	8.67	8.47	8.36	8.31
Number of Customers Affected Per Customer Served (SAIFI)	0.59	0.69	0.87	0.74	0.73	0.72

RG&E

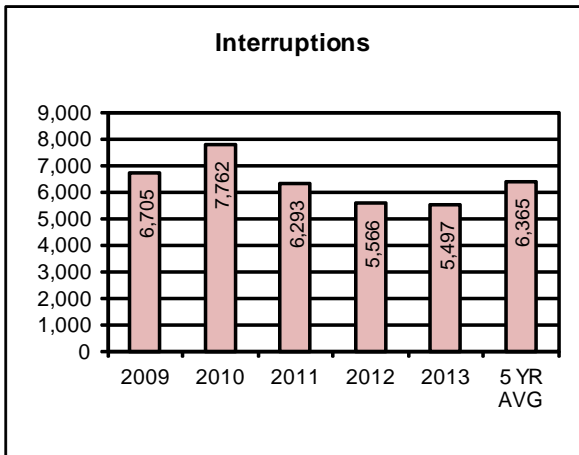
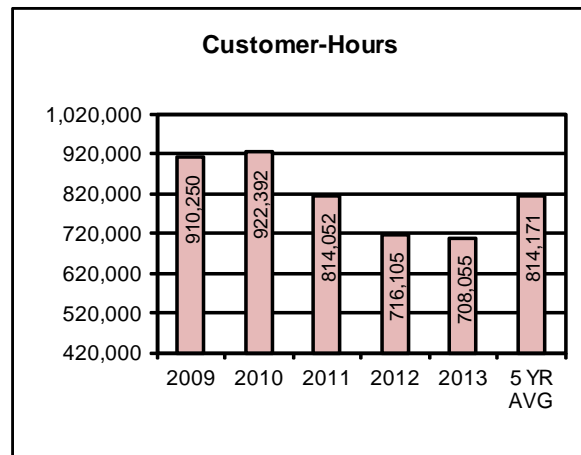
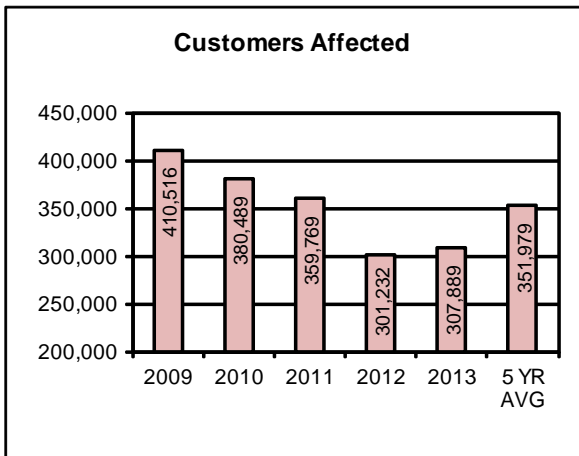
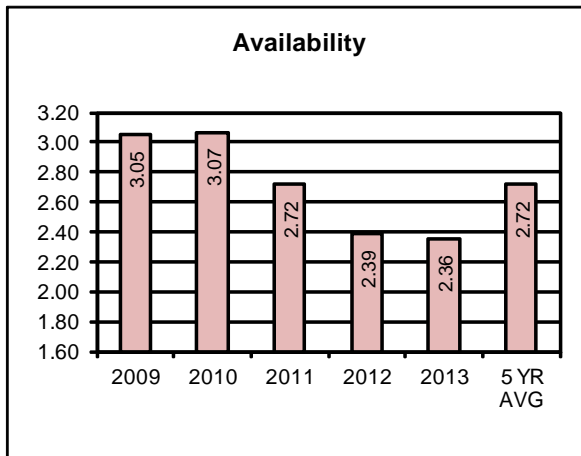
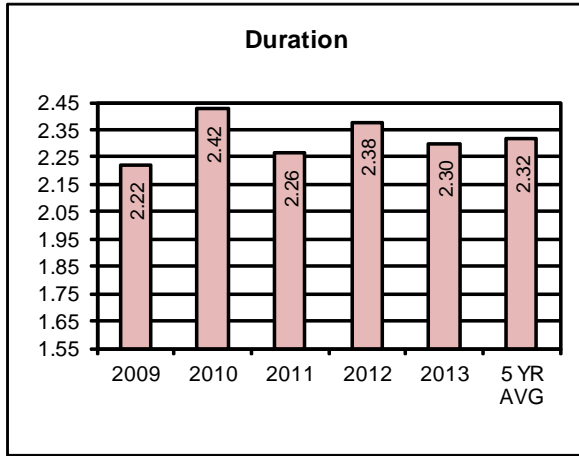
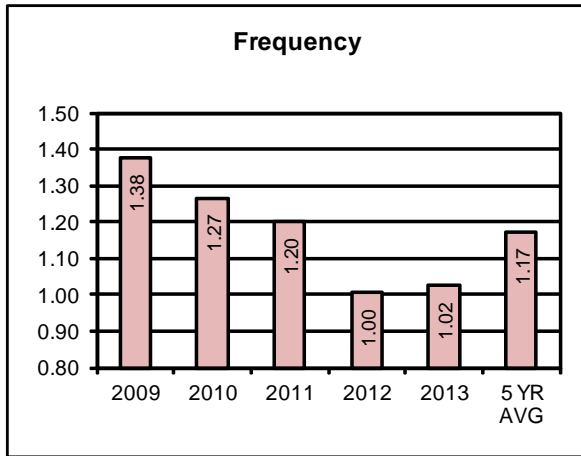
Including Major Storms

	2009	2010	2011	2012	2013	5 YR AVG
Number of Interruptions	3,110	3,081	3,295	3,555	3,451	3,298
Number of Customer-Hours	534,259	615,789	756,563	997,001	915,700	763,862
Number of Customers Affected	263,203	282,347	379,493	331,398	332,851	317,858
Number of Customers Served	365,625	360,156	360,670	366,369	367,534	364,071
Average Duration Per Customer Affected (CAIDI)	2.03	2.18	1.99	3.01	2.75	2.39
Average Duration Per Customers Served	1.48	1.68	2.10	2.76	2.50	2.11
Interruptions Per 1000 Customers Served	8.64	8.43	9.15	9.86	9.42	9.10
Number of Customers Affected Per Customer Served (SAIFI)	0.73	0.77	1.05	0.92	0.91	0.88

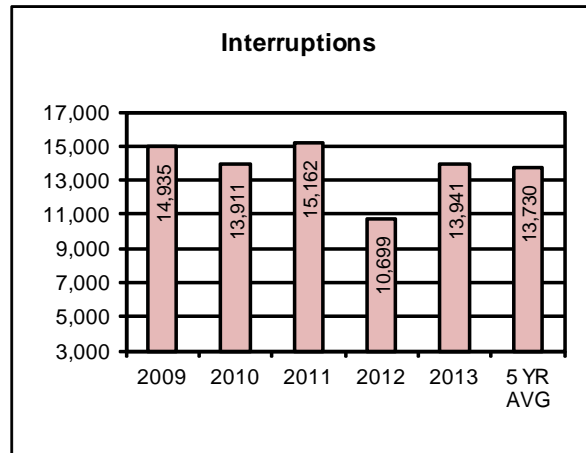
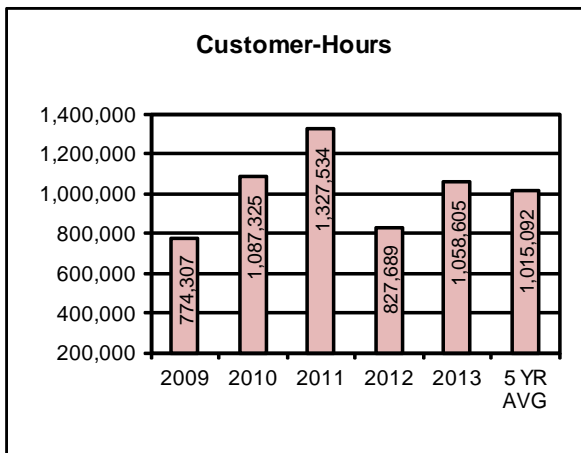
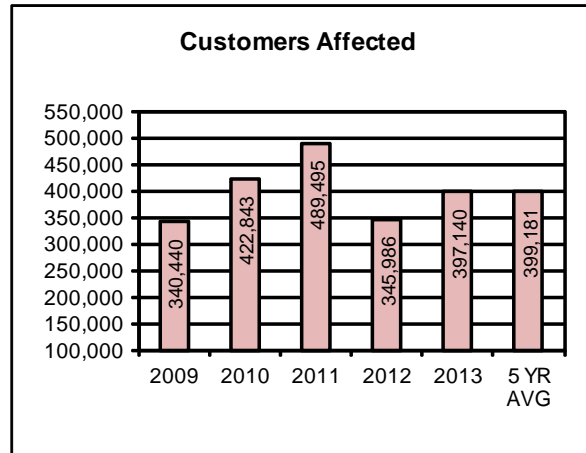
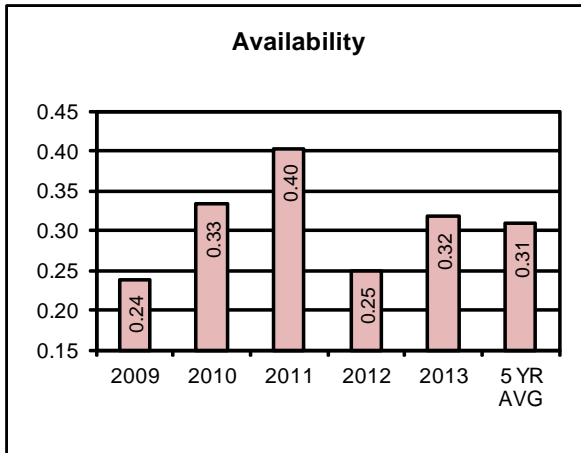
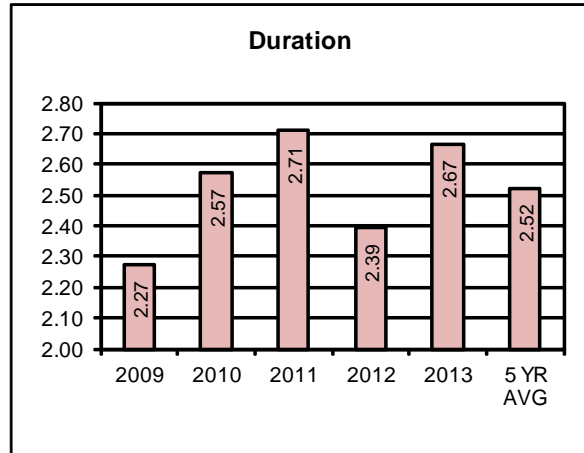
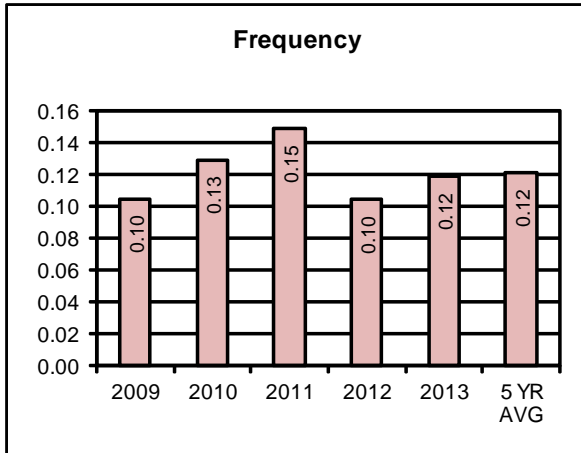
* Customers Served is the number of customers served at the end of the current year.

** For those indices that use Customers Served, Customers Served is the December value from the previous year.

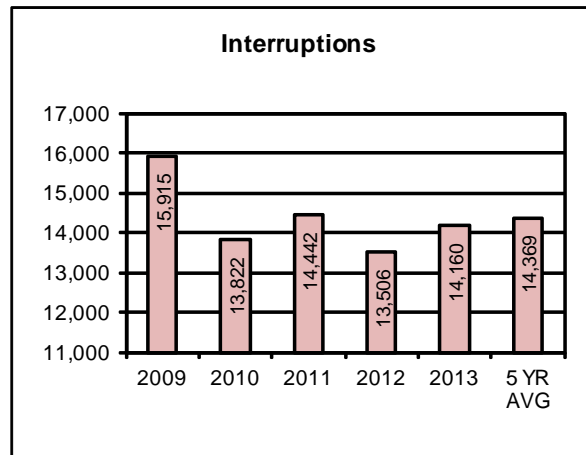
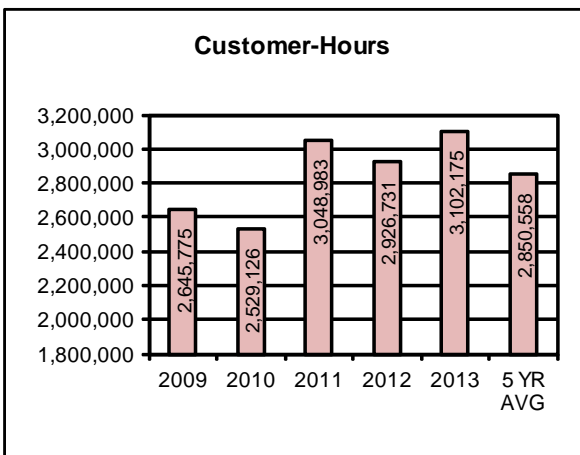
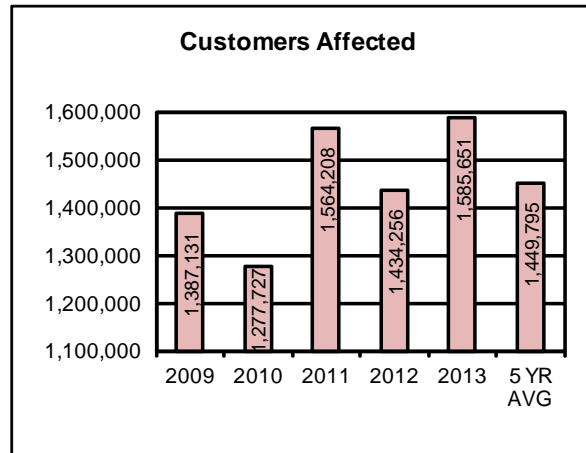
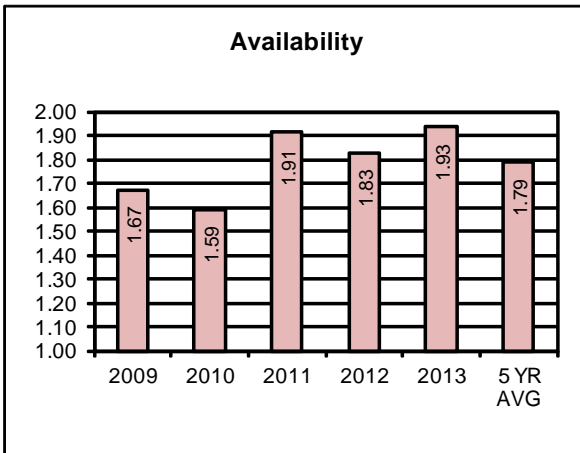
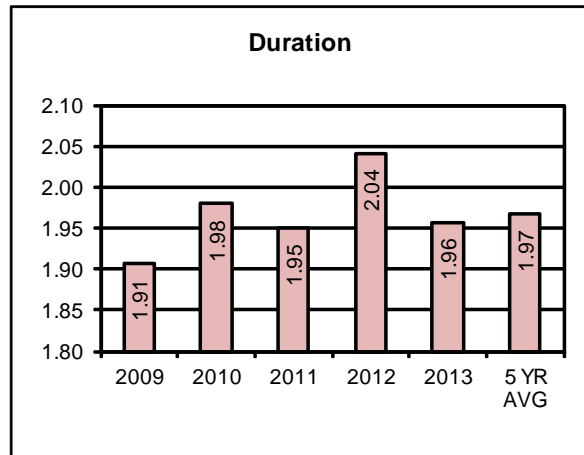
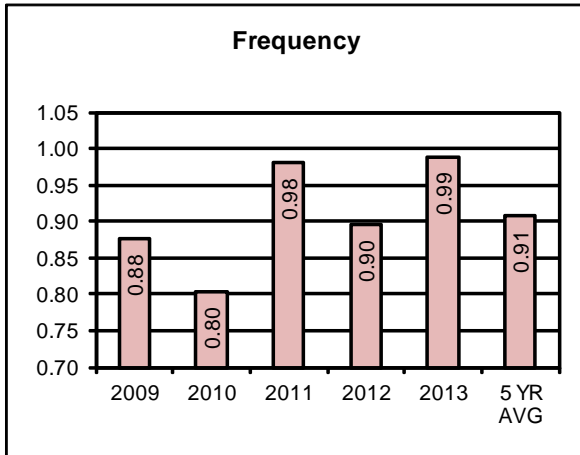
Central Hudson Gas and Electric (Excluding Major Storms)



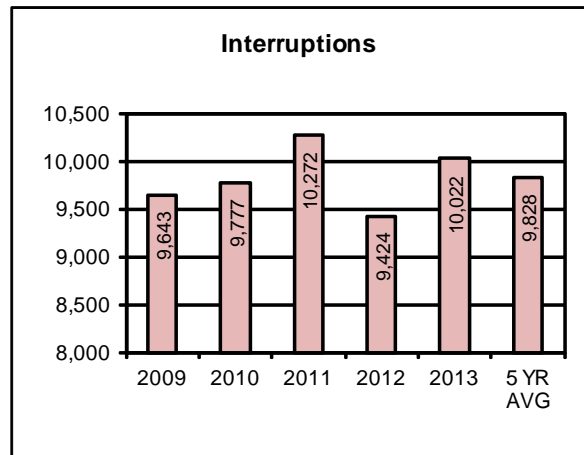
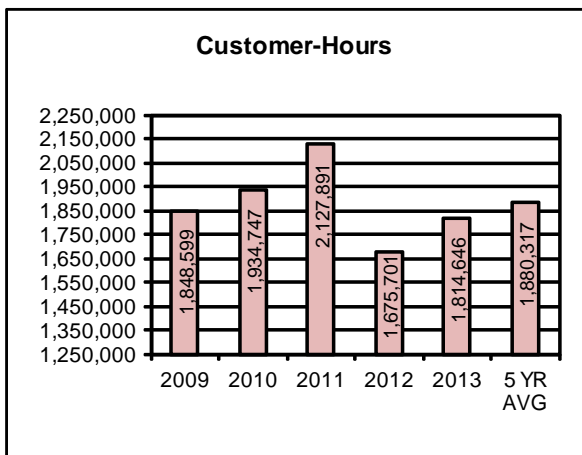
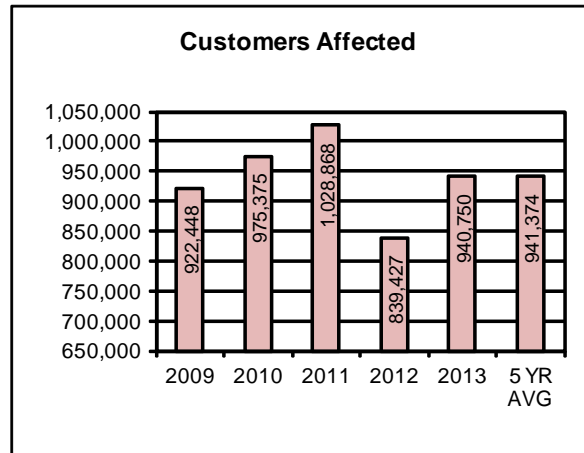
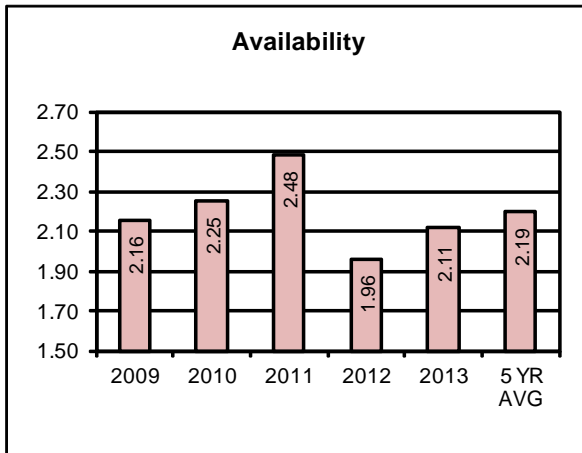
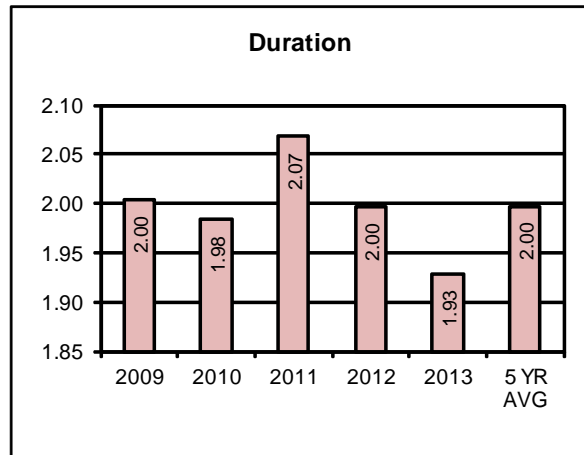
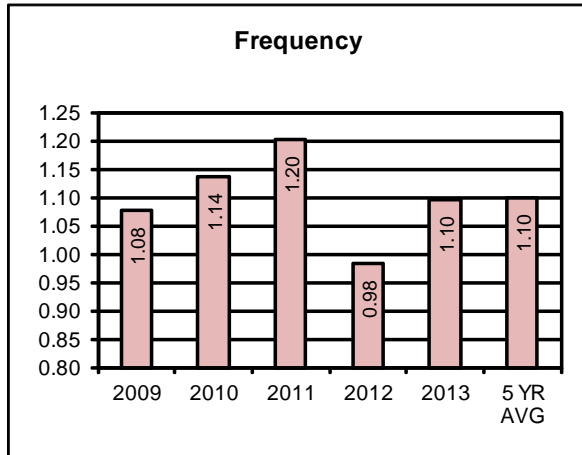
Consolidated Edison - System (Excluding Major Storms)



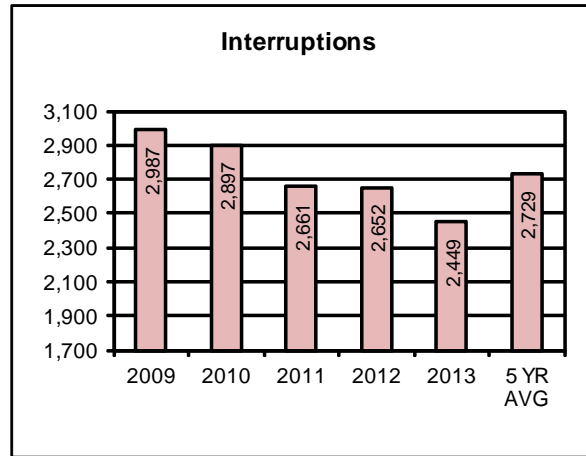
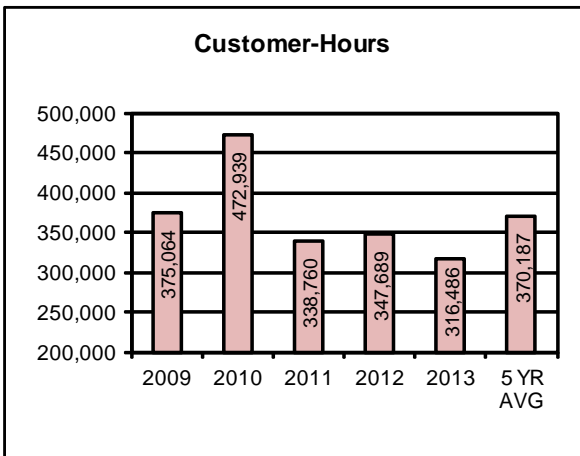
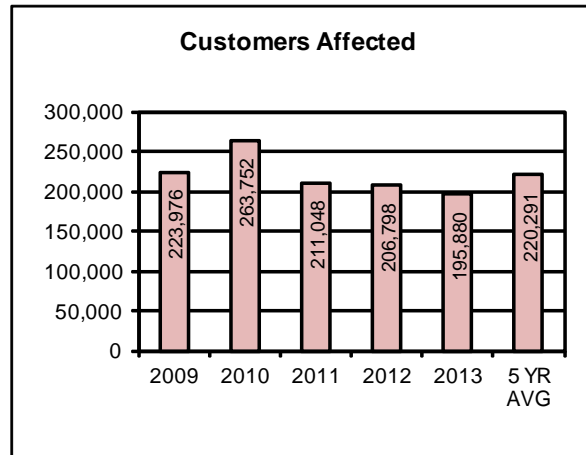
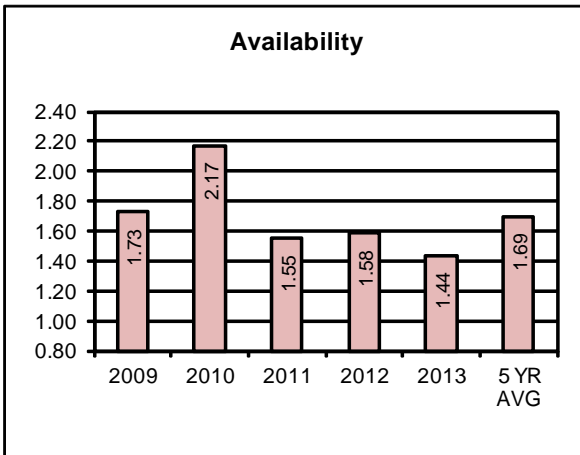
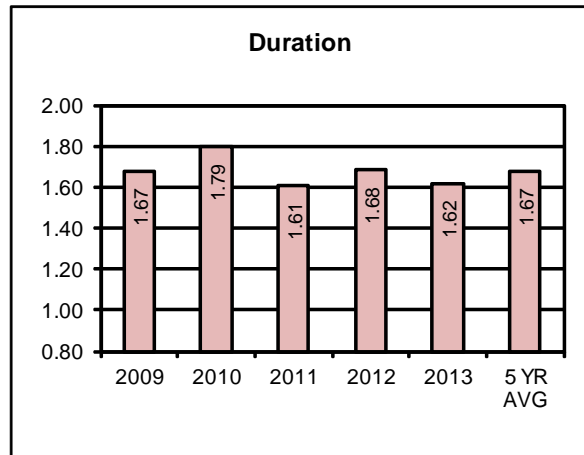
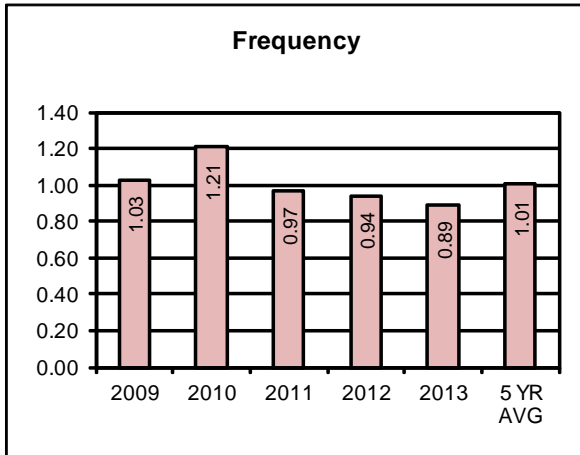
National Grid (Excluding Major Storms)



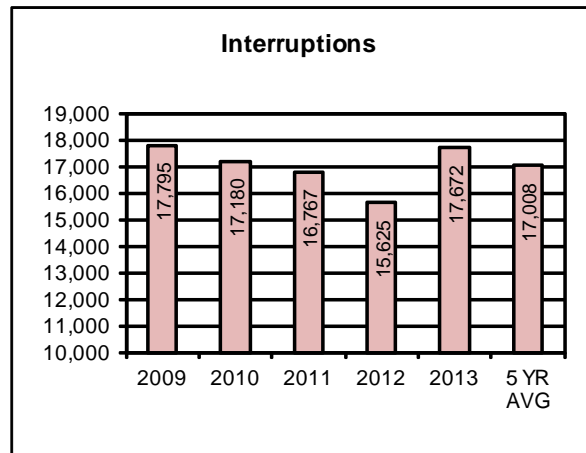
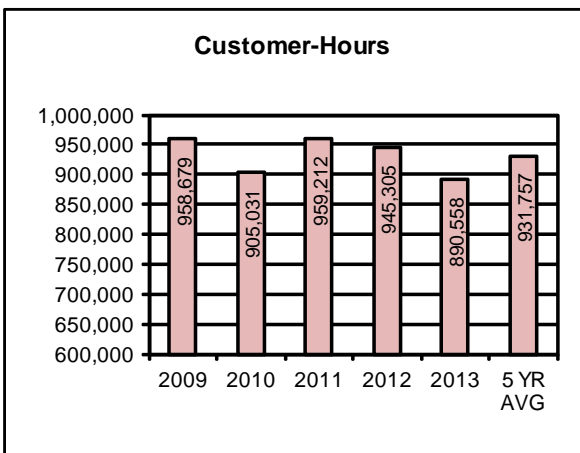
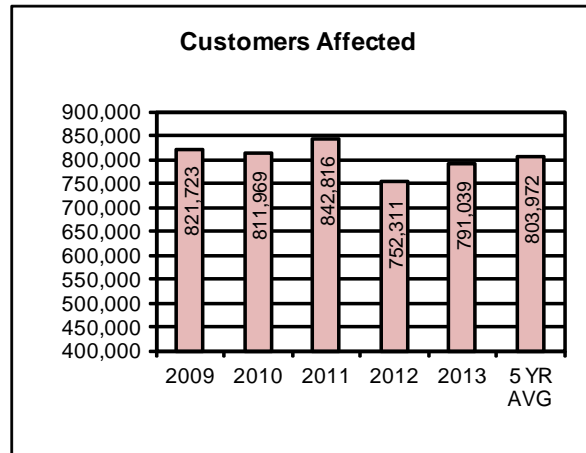
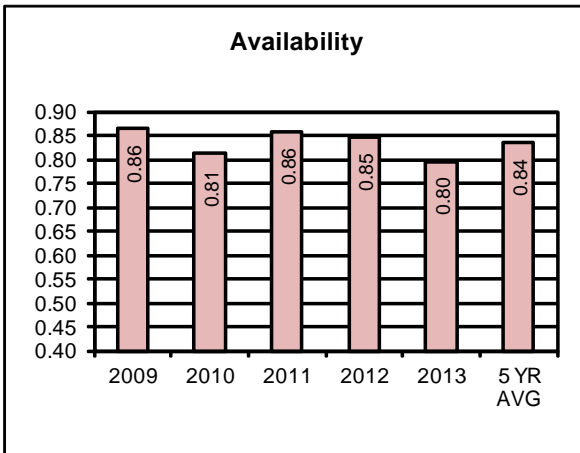
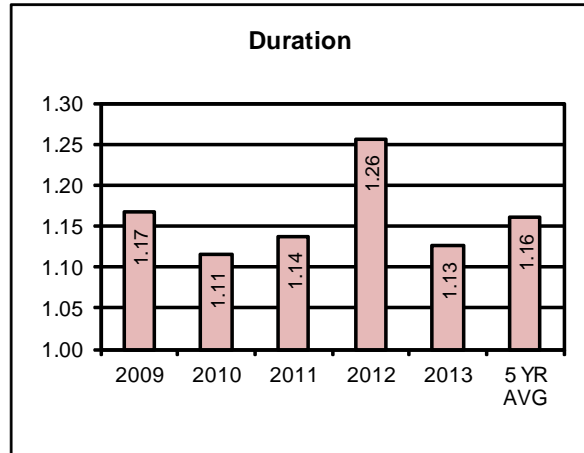
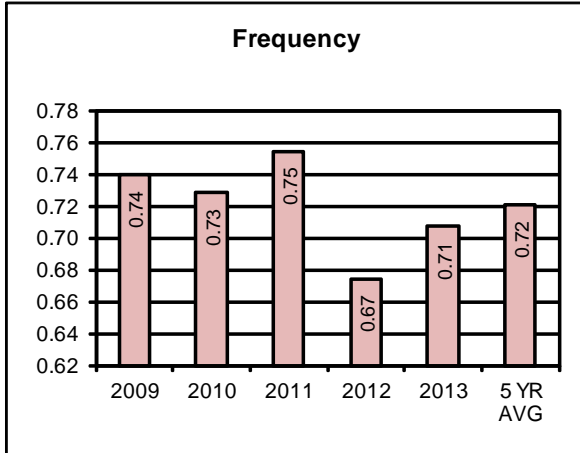
New York State Electric and Gas (Excluding Major Storms)



Orange and Rockland Utilities (Excluding Major Storms)



PSEG-LI (Excluding Major Storms)



Rochester Gas and Electric (Excluding Major Storms)

