

# STATE OF NEW YORK DEPARTMENT OF PUBLIC SERVICE



## 2015 GAS SAFETY PERFORMANCE MEASURES REPORT (CASE 16-G-0254)

Pipeline Safety Section  
Office of Electric, Gas & Water  
June 15, 2016

**EXECUTIVE SUMMARY**

The performance measures are the result of collaborative efforts since the 1990's, and revised in 2003, between Staff and major New York State natural gas local distribution companies (LDCs) to improve identification and tracking of areas that are critical to gas safety. The data used in the report were gathered and submitted by the LDCs using processes developed from these collaborative efforts.<sup>1</sup> Included for the first time in this report are instances of non-compliance with the pipeline safety regulations. These non-compliances are reported based on Staff record and field audits of the LDCs throughout the calendar year.

Overall, the data indicates that LDC performance has substantially improved across the state over the thirteen year period Staff has been reporting gas utility performance to the Commission. For the first time in this report's history, the total damage prevention measure showed a decline in performance; however, it is still 72.5% better than it was in 2003. The 30-minute emergency response time has improved from 76.8% in 2003 to 83.1% in 2015 and the year-end backlog of potentially hazardous leaks has decreased 94.7%, from 1,154 to 61. As LDCs continue their outreach efforts, adopt better practices in responding to leak and odor calls, and work to replace leak-prone infrastructure, Staff expects further improvements will occur.

Staff recommends that LDCs identified as having improvement opportunities in certain categories identified below

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<sup>1</sup>This report examines the results of LDC performance in specific safety areas, damage prevention, emergency response, and leak management, for 2015. The New York State Department of Public Service, Gas Safety Section has been producing this annual report since 2004.

conduct a self-analysis and provide it to Staff within 45 days of receiving a letter from Staff detailing the deficiencies. LDCs should provide specific details on how they plan to improve performance with respect to those areas Staff found to be deficient. A high level discussion of the 2015 results for each performance measure follows below.

### **Damage Prevention**

The first measure, damage prevention, gauges the ability of LDCs to minimize damage to buried facilities caused by excavation activities. The damage measure is further broken down into four root cause categories: damages due to (1) mismarks (inaccurate marking by the LDC of its facilities); (2) company and company contractor error; (3) third party excavator error; and (4) no-calls (failure to provide notice of intent to excavate to the one-call notification system).

Overall, damage prevention performance across the state declined 9.4% during 2015. The number of requests to locate underground gas facilities (one-call tickets) received by the LDCs increased nearly 1.9% in 2015, largely driven by NGrid NY<sup>2</sup>, NFG<sup>2</sup>, and NGrid Upstate<sup>2</sup>, which experienced a 3.0%, 7.4%, and 8.0% increase, respectively.

All four of the categories composing the total damage measure declined in performance during 2015. The greatest declines occurred in damages due to mismarks (13.3%), damages due to excavator error (11.4%), and in damages due to company and company contractor error (10.2%).

Compared to 2014, all LDCs experienced varying combinations of improvement and decline among the four

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<sup>2</sup> Company names and their respective acronyms can be found on Page 2 of this report.

categories. Eight of the eleven LDCs have been identified in this report as needing to improve and will need to conduct self-assessments of their programs.

### **Emergency Response**

The second measure, emergency response, gauges the LDCs' ability to respond promptly to reports of gas leaks or emergencies by examining the percentage of calls that fall within various response times. The performance measure contains three specific response goals: (1) respond to 75% of emergency calls within 30 minutes, (2) 90% within 45 minutes, and (3) 95% within 60 minutes.

Statewide performance for the 30 minute goal improved in 2015, whereas the 45 minute, and 60 minute goals declined slightly. These declines can be attributed to an increase of nearly twenty-four thousand emergency calls received, compared to the previous year. In general, the LDCs have continued to use technologies such as global position systems (GPS) to quickly identify the most appropriate employee to respond to a gas leak or odor call, continued public awareness initiatives on the properties of natural gas, and have continued placing, or added personnel, in certain geographical areas during the times of day that have historically high volumes of emergency notifications.

### **Leak Management**

The third measure, leak management, examines LDCs' performance in effectively maintaining leak inventories and keeping potentially hazardous leaks to a minimum. Potentially hazardous leaks include any leak that requires repair pursuant to 16 NYCRR Part 255 (Type 1, 2A, and 2). This report also examines each LDC's total leak backlog. Total leak backlogs

include Type 3 leaks, which do not have a statutory repair timeframe and are, by definition, considered to be non-hazardous. Pursuant to 16 NYCRR Part 255, Type 3 leaks require reevaluation during the next required leakage survey or annually, whichever is sooner, to ensure a public safety hazard has not developed. While Type 3 leaks are not expected to become a safety concern, LDCs should work to reduce these known leaks on their systems because it reduces lost gas, reduces maintenance costs, and the persistent odor can negatively impact public awareness efforts.

For leaks requiring repair, the end of the calendar year generally coincides with the beginning of the frost season. During this timeframe there is a greater chance of gas migration into a building because the gas cannot vent as readily through the soil to the atmosphere due to the blanket of frost. All LDCs have demonstrated improvement in these measures over the past several years. The statewide year-end 2015 backlog improved by 47 repairable leaks when compared to 2014, and is down 94.7% when compared to 2003. For total leak backlogs, the statewide year-end 2015 backlog was down a total of 2,513 leaks (11.5%) from year-end 2014, and is down 25.9% when compared to 2010.

#### **Non-Compliances Identified by Staff**

For the first time, LDCs will also be evaluated on their non-compliance, as identified by Staff, with the Commission's pipeline safety regulations. Each year, Staff conducts statistical-based audits and investigations of the LDCs to determine their compliance with the gas safety regulations. Each non-compliance identified represents an area where an LDC failed to meet these minimum requirements as prescribed.

The data varies greatly from year to year and is due, in part, to Staff's five year audit cycle. These audits of the pipeline safety regulations occur on varying frequencies and are based on the likelihood of risk to public safety. The regulations are either identified as high risk, in which an audit is conducted annually, or other risk, which is evaluated on a two to five year frequency, not to exceed five years.

In 2015, non-compliances were identified in all eleven of the LDCs' operating service territories. Staff is concerned with any non-compliances of the minimum pipeline safety regulations and recommends that all of the LDCs strive to negate these occurrences. Mechanisms have been incorporated into their respective rate cases to attach an associated liability for each non-compliance identified.

#### **Next Steps**

The analysis of each performance measure in this report identifies specific areas where certain LDCs have room for improvement. Staff recommends that those LDCs develop action plans to improve performance. In some cases, Staff suggests certain issues to examine, although the LDCs need not limit themselves to Staff's suggestions and should explore additional areas.

This report will be transmitted to an executive level operating officer of each LDC. For those LDCs identified as having improvement opportunities, Staff recommends that those companies conduct a self-analysis and provide it to the Safety Section of the Office of Electric, Gas, and Water within 45 days of receiving a letter from Staff. The analysis should include specific details on how the LDC plans to improve performance. For LDCs that have repeatedly been identified as needing improvement in specific areas, Staff recommends those LDCs

evaluate the effectiveness of their past efforts and determine the additional approaches to be used.

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COMPANY ACRONYMS

Local Distribution Companies (LDCs)	Acronym in Report
Central Hudson Gas & Electric Corporation	Central Hudson
Consolidated Edison Company of New York, Inc.	Con Edison
Corning Natural Gas Corporation	Corning
KeySpan Gas East Corporation d/b/a National Grid	NGrid LI
The Brooklyn Union Gas Company d/b/a National Grid	NGrid NY
National Fuel Gas Distribution Corporation	NFG
New York State Electric & Gas Corporation	NYSEG
Niagara Mohawk Power Corporation d/b/a National Grid	NGrid Upstate
Orange & Rockland Utilities, Inc.	O&R
Rochester Gas & Electric Corporation	RG&E
St. Lawrence Gas Company, Inc.	St. Lawrence

**HISTORICAL CASE NUMBERS<sup>3</sup>**

<b>Year Analyzed</b>	<b>Report Case Number</b>
2003	04-G-0457
2004	05-G-0204
2005	06-G-0566
2006	07-G-0461
2007	08-G-0413
2008	09-G-0454
2009	10-G-0225
2010	11-G-0242
2011	12-G-0222
2012	13-G-0213
2013	14-G-0176
2014	15-G-0248

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<sup>3</sup>The appendices to this report include the most recent year under analysis plus the four previous years. This table is provided to aid those wishing to research prior years.

INTRODUCTION

Gas safety performance measures were developed as a means of improving local distribution companies' (LDCs) gas delivery system safety performance in areas identified as presenting the highest risks. Performance measures are tools that Staff and the LDCs can use to monitor the safe operation and maintenance of distribution systems. These measures indicate how companies are performing from year to year, as well as trends over time.

In developing the performance measures, Staff first identified areas in LDCs' systems or operations that carry the greatest potential for harm to the public if performance is sub-standard. Staff then worked with LDCs to develop methods for capturing and tracking appropriate data so they could be used as a practical management tool. This process led to the identification of three performance measures:

**Damage Prevention:** This measure examines damages to the LDCs buried facilities resulting from excavator activities, which is a leading cause of incidents involving buried gas pipelines both nationally and within New York State.

**Emergency Response Time:** This measure examines the amount of time that it takes an LDC to reach the scene of a reported gas leak or odor complaint.

**Leak Management:** This measure examines LDC performance in managing leak inventory levels for potentially hazardous leaks and in total.

**Operations Audit**

On August 15, 2013, in Case 13-M-0314, the NYS Public Service Commission (Commission) issued a request for proposals for an independent consultant to perform a focused operations audit of the accuracy of the performance measure data submitted by nine of the eleven LDCs mentioned in this report. The consultant's objectives were to assess the completeness and accuracy of the measures submitted, assess comparability amongst the utilities, and determine the suitability of each of the performance measures identified.

On April 20, 2016, the Commission issued an Order releasing the completed audit report and provided guidance on LDC response to the recommendations. Implementation plans to address each recommendation were subsequently due by May 20, 2016. In general, the consultant reported that the LDC's have complied with the intent of these performance measures and have, for the most part, accurately reported their respective data. Some of the consultants' recommendations included lack of written policies and procedures to address and collect data, instances where the methodology used to calculate the data has drifted over time, and minor inconsistencies among LDCs with the compilation of their respective data.

**Non-Compliances Identified through Audit Process**

An additional measure being introduced within this report is instances of non-compliances identified through the audit process, of the Commissions' pipeline safety regulations. Each year, Staff conducts audits and investigations of the LDCs to determine their compliance with the regulations. The non-compliances identified represents where an LDC failed to meet these minimum requirements as prescribed.

**Performance and Analysis for 2015**

Throughout this report, with the exception of the new measure, the figures display performance results from 2011 through 2015 for each LDC, with the grey columns in the bar graphs representing 2011 through 2014, and the black columns representing the 2015 results. For the new measure, the results from 2010 through 2014 are displayed based on the timing of when audits are completed. The blue horizontal lines on the bar graphs represent the 2015 statewide performance level. Red numbers in tables represent a decline in performance from the previous year.

**Damage Prevention**

Damage to underground gas facilities due to excavation activity is one of the leading causes of natural gas pipeline failures and accidents, both statewide and nationwide.

The damage-prevention procedures are designed to work as follows: (1) excavators provide notice of their intent to excavate to a one-call system,<sup>4</sup> which transmits an excavation notice (one-call ticket or ticket) to the member operators potentially affected by that excavation; (2) member operators clearly and accurately mark the location of their buried facilities in or near the excavation site; and (3) excavators work carefully around the marked facilities in order to avoid damaging them. Damages to underground facilities can be categorized by identifying where in this three-step process the root cause of an incident lies.

Evaluating the number of damages in relation to the volume of construction and excavation activity in an LDC's

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<sup>4</sup> New York has two one-call systems, one for New York City and Long Island, and the second for the remainder of the state.

operating territory provides a useful basis for assessing performance in this area. The data used in this analysis are contained in **Appendices A** and **B**. The method used to normalize each LDC's data is the number of facility damages per 1,000 one-call tickets for that LDC.

The numbers of damages are categorized as damages resulting from mismarks, excavator error, company and company contractor error, and no-calls. Each one-call ticket received provides an LDC the opportunity to mark its facilities correctly. Hence, for damage due to mismarks, the report examines the number of damages caused by mismarks per 1,000 tickets received for each LDC.

Once a one-call ticket is requested by an excavator by calling a toll free number or 811, and the facilities are marked correctly, the excavator can, if working carefully, avoid damage to underground facilities. Third party excavator error damages are historically the largest component of total damage, primarily because of the need to educate third party contractors in safe and best excavation practices. Most large excavators are well aware of the existence of the one-call centers and the requirement to notify it of planned excavation work. Many excavators are not as well-versed in the additional requirements such as respecting tolerance zones, verifying locations of underground facilities with hand-dug test holes, maintaining the marks, and maintaining clearances with powered equipment. Educating excavators on how to avoid underground facility damage once mark-outs have been requested requires more in-depth training and outreach. The Commission cannot order such training, therefore, all consent offers to reduce a penalty include a commitment from the excavator to taking the training offered.

Damage caused by LDC personnel, or by LDC direct contractors are also included in the damage analysis as a separate category. These personnel should have sufficient training and experience to work carefully near their own facilities. LDCs should also have better control over hired contractors who perform work for the LDC than they do over third party contractors. Thus, this category should be the smallest contributor to the total damages. The current measure tracks damages caused by all utility operations within a particular LDC. That is, for an electric and gas combination LDC, damage to gas facilities caused by electric crews or electric company contractors are combined.

Damages due to no-calls are instances where no ticket exists because the excavator failed to provide notice of their intent to excavate. This metric provides an indication of the general level of awareness excavators have about the one-call notification systems. A high percentage of damage in this category indicates that efforts are needed to make excavators aware of the dangers of working around buried facilities and the importance of using the one-call systems.

It is important to note that the damage prevention measures evaluate actual damages to LDCs' underground facilities. Based on the data reported in 2015, 99.8% of one-call tickets had no associated damage to natural gas facilities. This is consistent with the Common Ground Alliance's (CGA)<sup>5</sup> 2015 Damage Information Reporting Tool (DIRT) report which found that

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<sup>5</sup> The Common Ground Alliance is a national association of stakeholders involved in damage prevention that identifies and disseminates best practices, conducts public awareness programs, and collects and analyzes data regarding damages to underground utility facilities.

when a call is made prior to excavation, damage occurs less than 1.0% of the time.

There were a total of 1,746 instances of damage to natural gas LDC facilities in 2015, 184 more than in 2014. With an increase of 17,742 one-call tickets (1.9%) during 2015, the results actually show a decline (9.7%) in total damage performance per 1,000 one-call tickets. This decline in performance was shared among all of the damage categories and ranges from 3.1% to 13.3%. A single damage could lead to a catastrophic event, which is why it's critical that LDCs and excavators strive to minimize damage to facilities, by improving in this measure.

The Department enforces the Commission's damage prevention regulations, 16 NYCRR Part 753, Protection of Underground Facilities. Over the past five years approximately 1,585 citations have been issued, which has led to training sessions being completed by excavators with both New York 811 and Dig Safely NY; approximately \$920,528 in penalties having been collected.

**Figure #1** below displays the collective statewide performance regarding the damage prevention measures. Note the increase in the number of one-call tickets over the period, and a recent decline in performance for all four of the performance measure categories.



Metric	2011	2012	2013	2014	2015
Number of Tickets	735,041	771,749	832,841	915,194	932,936
Mismarks	0.45	0.44	0.36	0.37	0.42
Co. & Co. Contractor Error	0.10	0.10	0.08	0.08	0.09
Excavator Error	1.12	1.04	1.01	0.83	0.93
No-calls	0.47	0.43	0.46	0.43	0.44
Total Damages (per 1,000)	2.14	2.01	1.92	1.71	1.87

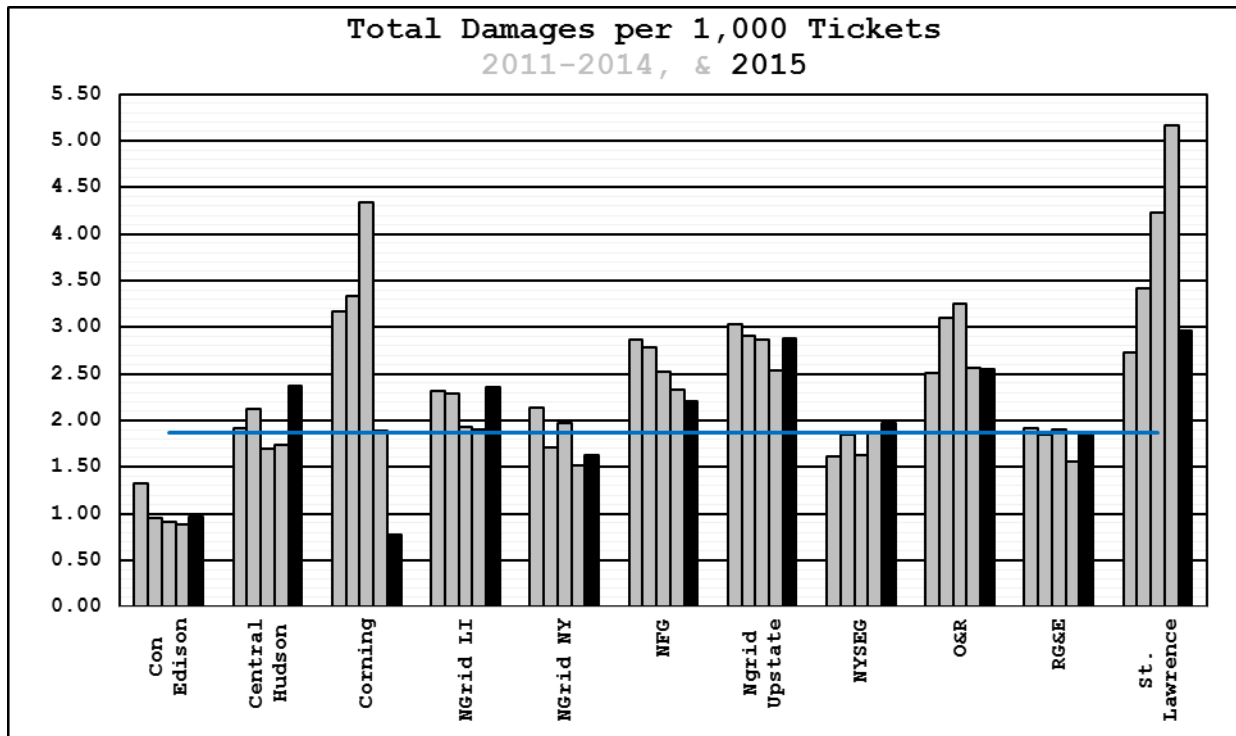
**Figure #1** - Damages per 1,000 Tickets Statewide

All four areas measured in this metric contributed to the decline in the total damage measure in 2015.<sup>6</sup> The largest decline in 2015 came in damage due to mismarks (13.3%), followed by excavator error (11.4%), and company/company contractor error (10.2%). For damage due to no-calls there was a slight decline in performance of 3.1%. The total number of tickets increased approximately 1.9% during 2015 as compared to 2014. The LDCs that experienced the largest increase in tickets were Central Hudson (11.2%), NGrid Upstate (8.0%), O&R (7.7%), NFG (7.4%), and Con Edison (5.1%). Increases were also experienced by NGrid NY, RG&E, and NYSEG. LDC’s numerical performance in each damage prevention area are located in **Appendices A** and **B**.

LDC performance in total damage per 1,000 tickets, regardless of cause, is displayed in **Figure #2** below.

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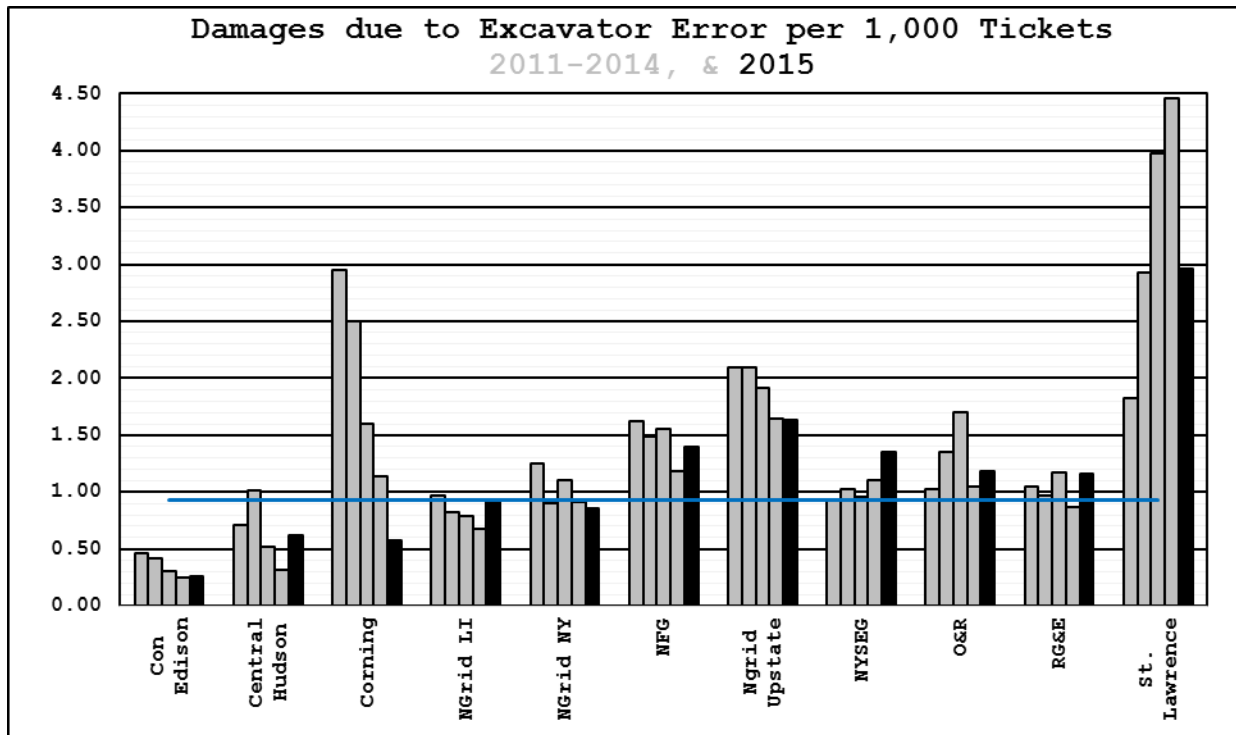
<sup>6</sup> The ‘total’ damage performance may not equal the sum of the four metrics due to rounding.



**Figure #2** - Total Damages per 1,000 Tickets

As seen in **Figure #2**, four LDCs improved and seven LDCs declined in 2015. Among those improving, significant gains were made by Corning (59.2%), St. Lawrence (42.6%), and NFG (5.5%). These improvements were driven by decreases in the total number of damage from 2014 to 2015. Corning’s total number of damage went from 10 in 2014, to 4 in 2015. Likewise, St. Lawrence’s total number of damage went from 22 to 12, respectively. These small swings, combined with having a lower total volume of one-call tickets, can have a greater impact from year-to-year on performance when compared with other LDCs. For those LDCs who experienced declines in performance, Central Hudson (36.2%), NGrid LI (23.8%), RG&E (20.3%), NGrid Upstate (13.4%), Con Edison (10.3%), and NGrid NY (6.7%), these decreases can be attributed to a variation of the total number of damages and one-call tickets.

LDC performance in damages due to third party excavator error per 1,000 tickets is displayed in **Figure #3**.

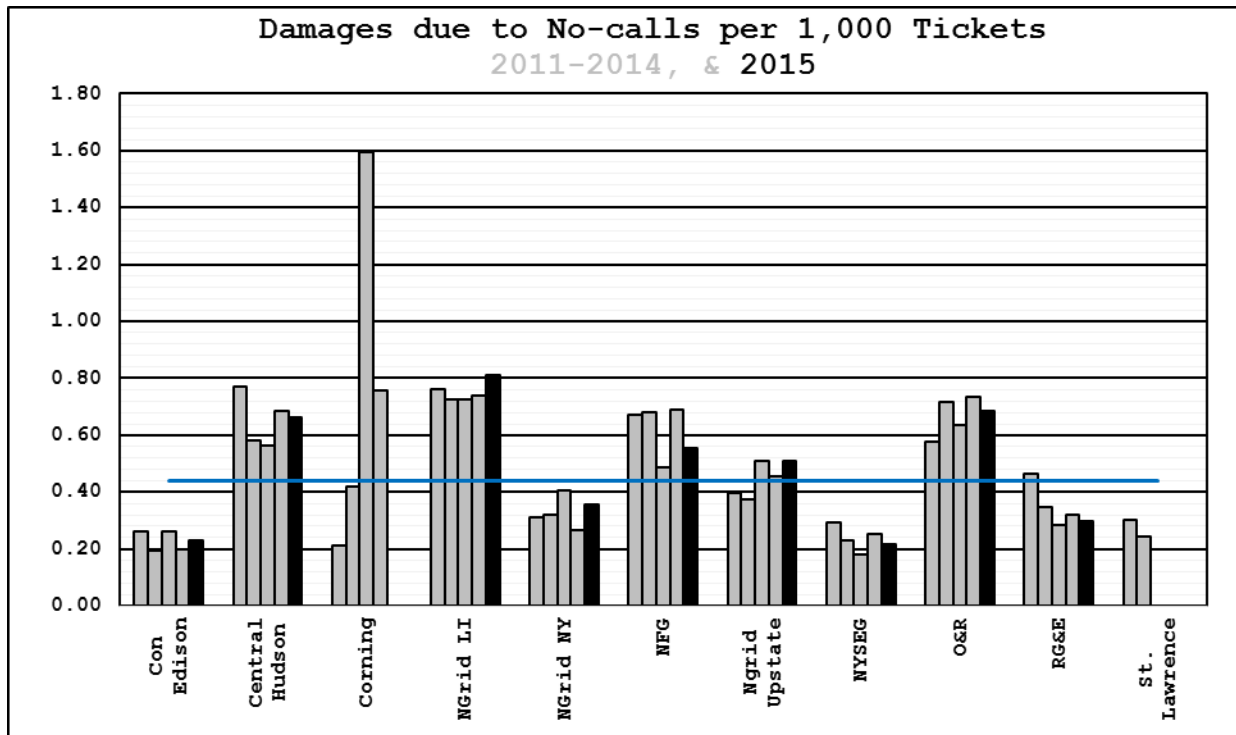


**Figure #3** - Excavator Error Damages per 1,000 Tickets

As seen in **Figure #3**, four LDCs improved and seven LDCs declined in 2015. Of those LDCs showing improvement, the most significant changes were made by Corning (49.1%), St. Lawrence (33.6%), and NGrid NY (6.0%). In 2014, NYSEG and St. Lawrence were identified as outliers who needed improvement in this area. As noted above, St. Lawrence showed improvement in 2015, whereas NYSEG declined in its performance (22.6%) for the second consecutive year.

It is recommended that RG&E, NYSEG, NFG, and O&R perform analyses of their damage prevention programs and outreach efforts to identify ways to reduce this level of damage.

LDC performance in damages due to no-calls per 1,000 tickets is displayed in **Figure #4** below.



**Figure #4** - No-call Damages per 1,000 Tickets

As seen in **Figure #4**, six LDCs improved, one remained consistent, and four declined in 2015. Overall, the statewide level showed a slight decline (3.1%) when compared with that of 2014. The largest improvement came with NFG going from 61 no-call damages in 2014, to 53 in 2015. When normalized with its decrease in one-call tickets (1,388) NFG saw a 19.1% improvement in this area. Other LDCs with improved performance included Central Hudson, Corning, NYSEG, O&R, and RG&E.

For the four LDCs that shared a decline in performance (Con Edison, NGrid LI, NGrid NY, and NGrid Upstate) the variations with increasing and decreasing number of damages and one-call tickets can be attributed to their performance change. Most notably, Con Edison and NGrid NY saw increases in both one-

call tickets (10,914 and 5,151) and damages (10 and 17) which led to 17.8% and 33.0% decreases in performance, respectively. NGrid LI also declined in its performance (9.7%) while having two fewer no-call damage (127) when compared to 2014. This overall normalized decline is due to a decrease in the total number of one-call tickets (17,869). NGrid LI's 127 damages due to no-calls is more than twice of that of the next LDC; NGrid NY (63).

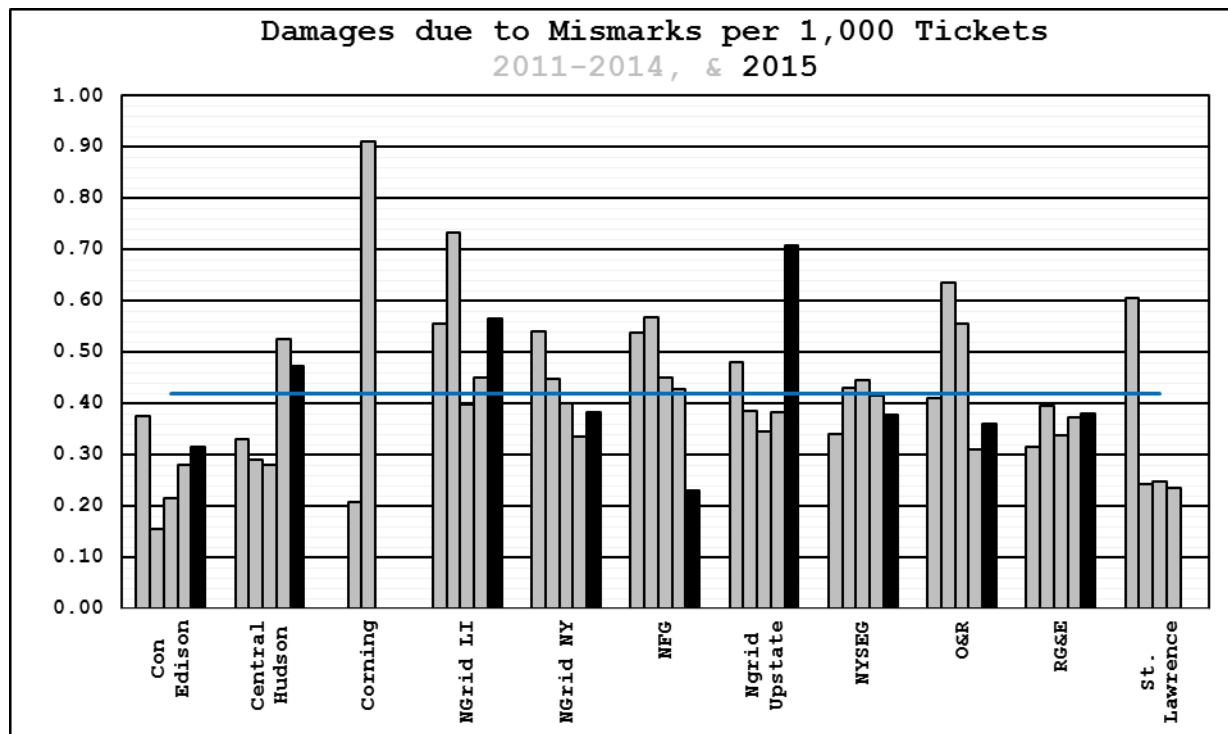
It is therefore recommended that NGrid LI perform an analysis of its damage prevention program, targeting damage due to no-calls, to identify efforts to further improve in this area. Its analysis of this year should include a review of the effectiveness of previous efforts and adopt new approaches where necessary.

The fairly consistent overall performance in damage due to no-calls indicates that excavators have remained aware of their obligation to utilize the one-call system. Key contributors in improving this metric came in the form of the three digit 811 dialing program, enforcement action for violations of 16 NYCRR Part 753, and outreach and training efforts made by LDCs and one-call centers.

To aid in the enforcement of 16 NYCRR Part 753, LDCs forward information about contractors who damaged underground facilities without having mark-out requests. Staff evaluates the details of each damage and pertinent information regarding the excavator, and takes enforcement actions where appropriate. This enforcement effort, coupled with higher penalties, is a deterrent to non-compliance. Where appropriate, enforcement cases are resolved by a "Consent Order" agreement in which the financial penalty may be reduced if, inter alia, the excavator attends free Dig Safely training provided by one-call centers.

All LDCs are encouraged to continue in their efforts to notify Staff of these contractors.

LDC performance in damages due to mismarks per 1,000 tickets is displayed in **Figure #5** below.



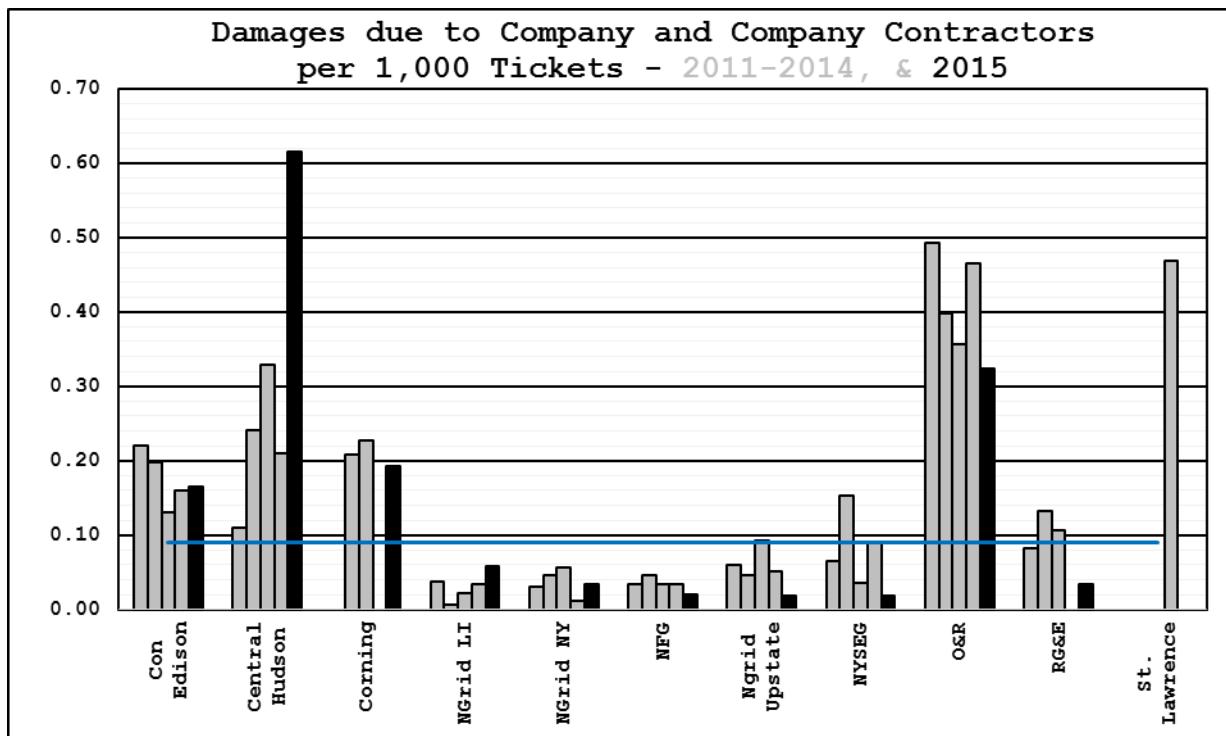
**Figure #5** - Mismark Damages per 1,000 Tickets

As seen in **Figure #5**, four LDCs improved, one remained consistent, and six declined in 2015 in accurately marking out their own facilities. The statewide performance level for this area declined for the second consecutive year and due to an increase in the total number of mismark damage; going from 336 in 2014, to 388 in 2015. In last year's report, Central Hudson and Con Edison were identified as poor performers in this area. While Central Hudson showed improvement (10.1%), Con Edison declined in performance for the third consecutive year (12.6%). Other notable changes in this area were decreases in performance for both NGrid LI (25.5%), and NGrid Upstate (85.2%). In raw

numbers, NGrid Upstate double its total number of damages due to mismarks, going from 37 in 2014, to 74 in 2015, which represents 71% of the statewide increase. NGrid Upstate's contract locator was purchased by another company during 2015, and its locating personnel's attention to detail declined due to uncertainty of their jobs. In addition, portions of the contract with the locating contractor needed improvement. NGrid Upstate has taken steps to modify the contract terms and improve the job terms for the locating personnel.

Staff typically expects to see general improvements in damage due to mismarks as LDCs continually adopt best practices to locate their facilities, remove older leak prone pipe that is less accurately identified on maps, and develop better controls over their locating contractors. It is recommended that Con Edison, NGrid LI, and NGrid Upstate evaluate their locating programs and adopt methods that could further improve mark-out accuracy.

LDC performance in damages due to company and company contractors per 1,000 tickets is displayed in **Figure #6** below.



**Figure #6 - Damaged due to Company and Company Contractors per 1,000 Tickets**

As seen in **Figure #6**, five LDCs improved and six LDCs declined in 2015. In last year's report, Con Edison and NGrid LI were identified as poor performers. In 2015, Con Edison (3.5%) declined in performance for a second consecutive year, and NGrid LI (67.1%) a third consecutive year.

LDCs that improved were NFG (3 damages in 2014 to 2 in 2015), NGrid Upstate (5 to 2), NYSEG (5 to 1), O&R (12 to 9), and St. Lawrence (2 to 0). LDCs that declined in performance were Central Hudson (4 damages in 2014 to 13 in 2015), Corning (0 to 1), NGrid NY (2 to 6), and RG&E (0 to 2).

With the Commission's support, the LDCs have increased the proactive replacement of leak-prone pipe in recent years. This leads to more excavation activity by company and company contractor forces near their own buried gas lines, which increases the opportunity for damages to occur. Even with this



increased excavation activity, however, statewide performance in this metric stayed relatively consistent with that of 2014. On the other hand, and as these annual performance measure reports have pointed out for many years, LDCs should also have better control over contractors they hire to perform work for them than they do over third party contractors, and these personnel should have the training and experience to work carefully near their own facilities. The LDCs point out that often these damages are to facilities that are in the process of being replaced; when damaged, their own crews and contractors are better prepared than third party contractors to promptly control the situation and make repairs. While true, Staff believes that LDCs should not minimize this category of damages. These damages still have the potential to harm workers and members of the public. All damages are not only safety concerns, but have the potential to lead to service outages and other disruptions, such as road closures and evacuations.

As noted above, this metric has the lowest raw number of damages, is the smallest contributor to the total number of damages, and is the smallest contributor to the total statewide damage measure. Further, the graphs' vertical scale in **Figure #6** makes the year-to-year changes appear more dramatic than they show in **Figures #2, #3, #4, and #5**. This graph's vertical scale exaggerates the fluctuations for the smaller LDCs. It has been noted several times that the smaller LDCs can have dramatic variations from year to year. For the second consecutive year, the data suggest that even the larger LDCs can experience sizable volatility in performance. As the actual numbers of damage get smaller, these swings become a larger percentage.

While there is value in evaluating recent trends in performance, it is worth taking a step back to look at this year's data in relation to the first year of reporting. **Figure**

#7 displays the collective statewide performance regarding the damage prevention measures from calendar years 2003 and 2015.

Metric	2003	2015
Number of Tickets	481,179	932,936
Mismarks	1.14	0.42
Co. & Co. Contractor Error	0.27	0.09
Excavator Error	3.28	0.93
No-calls	1.84	0.44
Total (per 1000)	6.53	1.87

**Figure #7** - Damage Comparison from 2003 to 2015

**Emergency Response**

16 NYCRR §255.825(d) requires that LDCs provide a monthly report to Staff that includes a breakdown of the total number of gas leak and emergency calls received during the month and responded to in intervals of 15 minutes during normal business hours, weekdays outside business hours, and weekends and holidays. The report also indicates the percentage of calls responded to within 30, 45, and 60 minutes. The following have been established as acceptable overall response time standards: 75% within 30 minutes, 90% within 45 minutes, and 95% within 60 minutes. Each company has a very small number of instances of response times exceeding 60 minutes.<sup>7</sup>

The intent of the reporting requirement and the performance measure is to evaluate company responses to gas

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<sup>7</sup> The LDCs are expected to review the circumstances of each instance exceeding 60 minutes and, where possible, work towards their elimination.

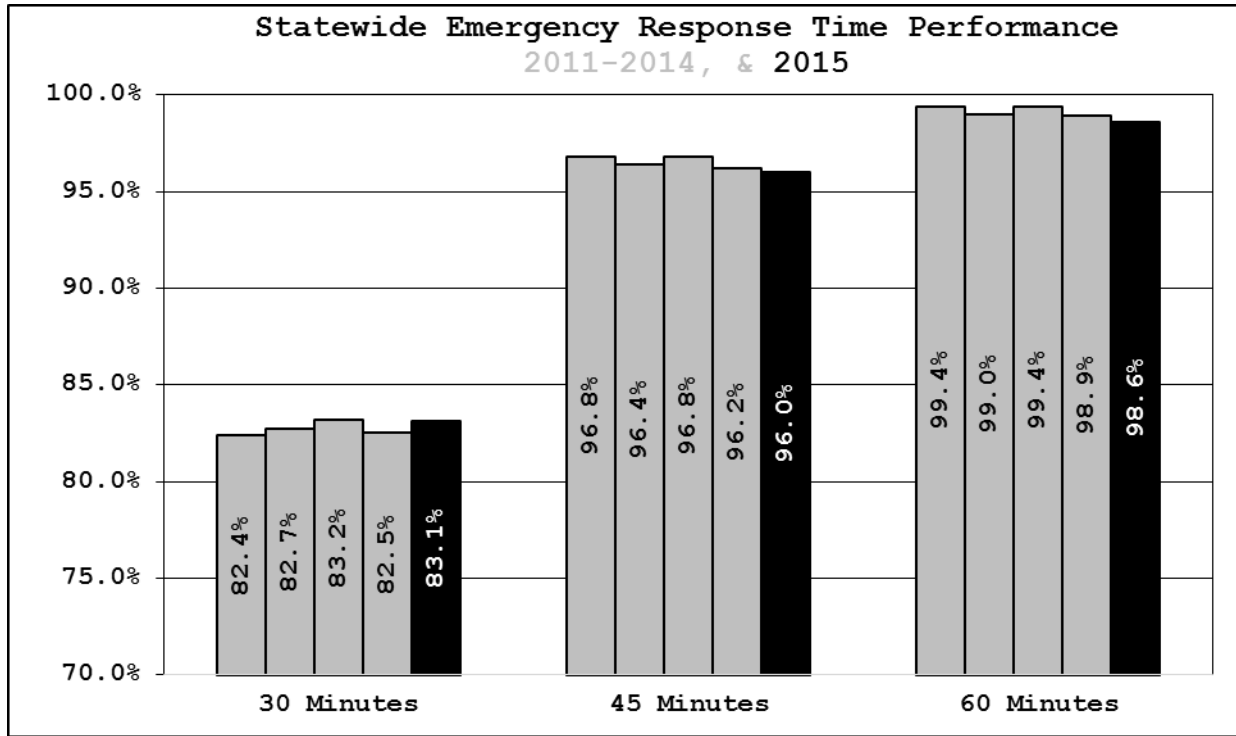
leak, odor, and emergency calls that are generated by the public and other authorities (e.g. police, fire, and municipalities). For the purposes of reporting, the response time is measured from the time the call is sent to the company dispatch to the time of arrival of qualified company personnel at the location.<sup>8</sup>

Any LDC that does not meet one of the target response levels at 30 minutes, 45 minutes, or 60 minutes must provide additional data showing when the targeted response level is actually achieved.

**Figure #8** displays the collective annual statewide emergency response time (ERT) performance for each goal since 2011, with the 2015 performance presented in black. The total number of emergency calls increased (12.6%) in 2015, reaching a level not seen since 2005. In 2015, the 30 minute statewide performance level improved, and the 45 minute, and 60 minute levels declined slightly when compared to that of 2014. All three categories exceeded their minimum goals of 75%, 90%, and 95%.

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<sup>8</sup> Qualified personnel are defined as company representatives who are properly trained and equipped to investigate gas leak and odor reports in accordance with accepted company procedures and 16 NYCRR §255.604 - Operator Qualification.



**Figure #8** - Emergency Response Time Performance Statewide

**Figure #9** presents data for calendar years 2011 through 2015 arranged by LDC and percentage of response times achieved within 30 minutes. Performances that did not meet the minimum goal of 75% are shown in red.

LDCs	2011	2012	2013	2014	2015
Con Edison	83.5	87.6	88.9	87.9	88.2
Central Hudson	78.3	79.7	78.5	78.7	77.0
Corning	83.8	88.0	81.9	79.9	79.1
NGrid LI	77.3	73.8	77.7	75.5	78.0
NGrid NY	77.1	76.0	76.7	75.6	75.9

NFG	91.8	91.6	92.7	92.5	93.3
NGrid Upstate	82.5	84.1	80.2	79.1	82.7
NYSEG	82.3	80.4	80.1	80.8	80.6
O&R	83.4	87.5	86.5	87.9	89.0
RG&E	90.3	88.9	84.7	87.4	81.4
St. Lawrence	75.5	74.5	71.3	84.4	83.6

**Figure #9** - Emergency Response Times for 30 Minutes (%)

All LDCs met the 30 minute, 45 minute, and 60 minute goals. The data for the 45 and 60 minute emergency response times are provided in **Appendix C**.

Over the previous thirteen years, leak and odor calls statewide have decreased from 227,905 in 2003 to 218,581 in 2015, or a 4.1% decrease. An even larger decrease was noted in 2013, but recent increases in 2014 and 2015 have returned this volume of calls to that of 2005. These increase are due, in part, to the LDC’s public awareness programs, and the Horseheads Proceeding, Case 11-G-0565, whereby LDCs assessed risks to their underground gas facilities posed by third party excavations and incorporated best practices for educating the public on the reporting of natural gas odors. Con Edison experienced a dramatic increase in odor calls after the East Harlem incident in 2014, a trend that is continuing. Part of the decline in calls may be attributed to the reduction of leak backlogs, which will be discussed further in the leak management section.

It is encouraging to see that all LDCs have made efforts over the years to reach the statewide goals jointly

established for this measure. Staff expects all LDCs to continue to evaluate and monitor their performance and identify areas where best practices can be implemented.

### Leak Management

The purpose of evaluating LDCs' leak management programs is to gauge performance in reducing the number of leaks that occur, eliminating potentially hazardous leaks that are found, and reducing the backlog of total leaks. The natural gas safety regulations contained in 16 NYCRR Part 255 include requirements for classifying leaks according to their relative hazard, considering factors such as whether gas migration is detected near buildings, in manholes, vaults or catch basins, or under paved versus unpaved areas, etc. All leaks classified as potentially hazardous must be monitored and repaired according to the gas safety regulations, and any hazardous conditions must be immediately eliminated. All other leaks must be reevaluated during the next required leakage survey or annually, whichever is less, but have no mandatory repair timeframe.

Unrepaired potentially hazardous leaks are an increased safety risk to the public. The risk is further exacerbated when there is frost in the ground due to the increased chance of gas migration into buildings (the frost acts as a blanket that does not allow the gas to readily vent to the atmosphere through the soil). Although a leak backlog on any particular day is a snapshot in time, the end of the calendar year is significant since it generally coincides with the beginning of the frost season. Thus, all data analyses are presented as of December 31 for each year. The data as reported by the LDCs related to Leak Management are contained in **Appendices D, E, and F**. The leak management measure looks at the year-end backlog of potentially hazardous leaks and in

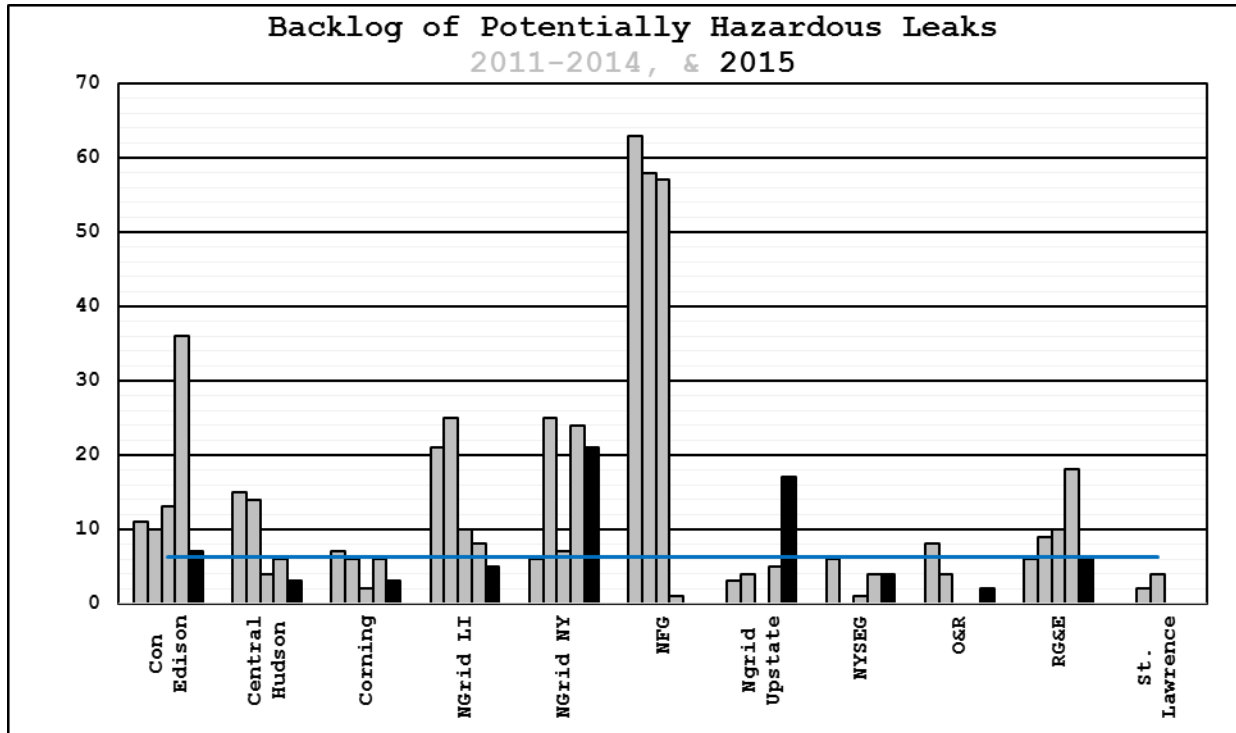
total. This measure does not substitute for, and is not a reflection upon, any LDC's compliance with the gas safety regulations.

The data reported by the LDCs include leaks found; leaks repaired on mains and services categorized by leak type classification; leaks repaired on mains by type of pipe material; leaks repaired on services by type and pipe material; and backlog of leaks by classification type.

Analysis of leakage data can also provide an indication of the pipe material's susceptibility to leakage. As a means of continuously improving leak management programs, Staff encourages the identification and removal of leak prone pipe, such as cast iron, bare, or poorly coated steel pipe that are difficult to protect against corrosion, and certain brittle plastic materials. Incentive programs to replace deteriorating and leak prone infrastructure and/or reducing leak backlogs have been incorporated into past and current rate agreements for LDCs. The Public Service Commission has recently begun an initiative to review how this pipe may be replaced at a higher rate. The long-term goal is to eliminate pipeline infrastructure that, due to its vulnerability to leaks, presents greater safety risks to the public. As the aging pipe infrastructure is replaced by more modern materials, general leak concerns should decrease with time.

The statewide year-end backlog of potentially hazardous leaks significantly decreased from 2014 to 2015, going from 108 to 61, and is down 94.7% when compared to 1,154 in 2003. This demonstrates that LDCs have sustained a continued effort paying more attention to managing leak surveys and are completing them earlier in the year, to allow for time to repair discovered leaks before heading into the frost season.

**Figure #10** displays the backlog of potentially hazardous leaks (Type 1, 2A, and 2)<sup>9</sup> on December 31<sup>st</sup> of 2011 through 2015. Numerical leak data is contained in **Appendix E**.



**Figure #10** - Potentially Hazardous Leak Backlog from 2011 through 2015

As seen in **Figure #10**, eight of the LDCs ended 2015 within 3 leaks, plus or minus, of where they finished in 2014. Con Edison saw the most significant change when compared to 2014, going from 36 to 7. Also improving their performance were

<sup>9</sup>A backlog of leaks requiring repair is defined as active leaks in the system consisting of: Type 1, requiring immediate effort to protect life and property, continuous action to eliminate the hazard, and repairs on a day-after-day basis or the condition kept under daily surveillance until corrected; Type 2A, monitored every two weeks and repaired within six months; and Type 2, monitored every two months and repaired within one year.

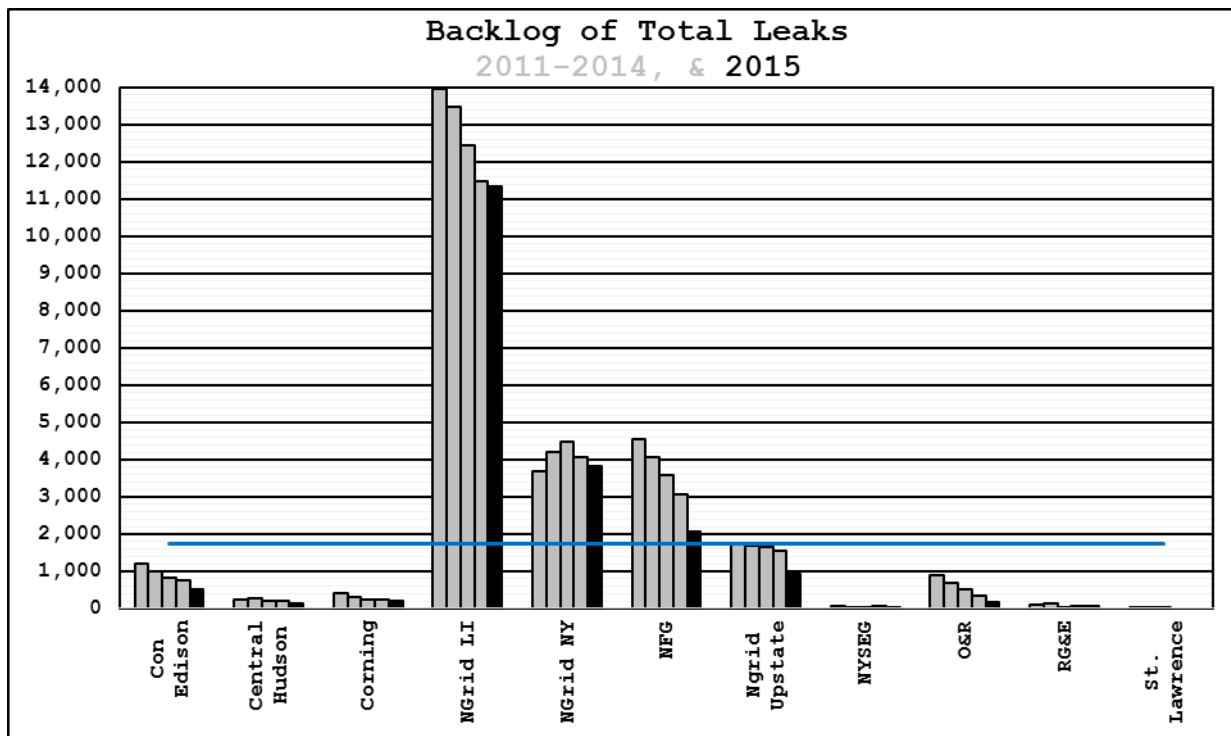


RG&E (18 to 6), Central Hudson (6 to 3), Corning (6 to 3), NGrid LI (8 to 5), NGrid NY (24 to 21), and NFG (1 to 0).

NGrid Upstate and O&R both declined in performance when compared to 2014. NGrid Upstate went from 5 potentially hazardous leaks to 17, and O&R from 0 to 2.

LDC performance as it relates to total leak backlogs include all potentially hazardous leaks, as identified above, in addition to the remaining Type 3 leaks. Type 3 leaks are defined as not being potentially hazardous at the time of detection and are reasonably expected to remain that way. However, Type 3 leaks must be reevaluated during the next required leakage survey or annually, whichever is less, though they have no mandatory repair timeframe.

Without this mandatory repair timeframe, LDCs could have, but not in recent years, allowed this backlog to grow exponentially. **Figure #11** displays the backlog of total leaks (Type 1, 2A, 2, and 3) on December 31<sup>st</sup> of 2011 through 2015. Numerical leak data is contained in **Appendix F**.



**Figure #11** - Total Leak Backlog from 2011 through 2015

As seen in **Figure #11**, eight of the LDCs appear to have placed an emphasis on maintaining a lower year-end total leak backlog. Three of the LDCs have a year-end backlog of greater than 1,000 total leaks, with the more notable LDC being NGrid LI (11,330). Their level of performance is nearly three times that of the NGrid NY (3,820).

Of those LDCs that improved, the most notable is NFG, which has reduced its backlog by a total of 987 leaks. This is a 32.3% improvement from 2014. Similar improvements were made by NGrid Upstate (reducing their backlog by a total of 616 leaks), NGrid NY (248), and Con Edison (217).

As the replacement of leak prone pipe increases over the next several years, it is to be expected that these totals will decrease. In the meantime, it is recommended that NGrid LI respond to this report by outlining efforts it will make to further decrease their year-end total leak backlog.

**Non-Compliances Identified through Audit Process**

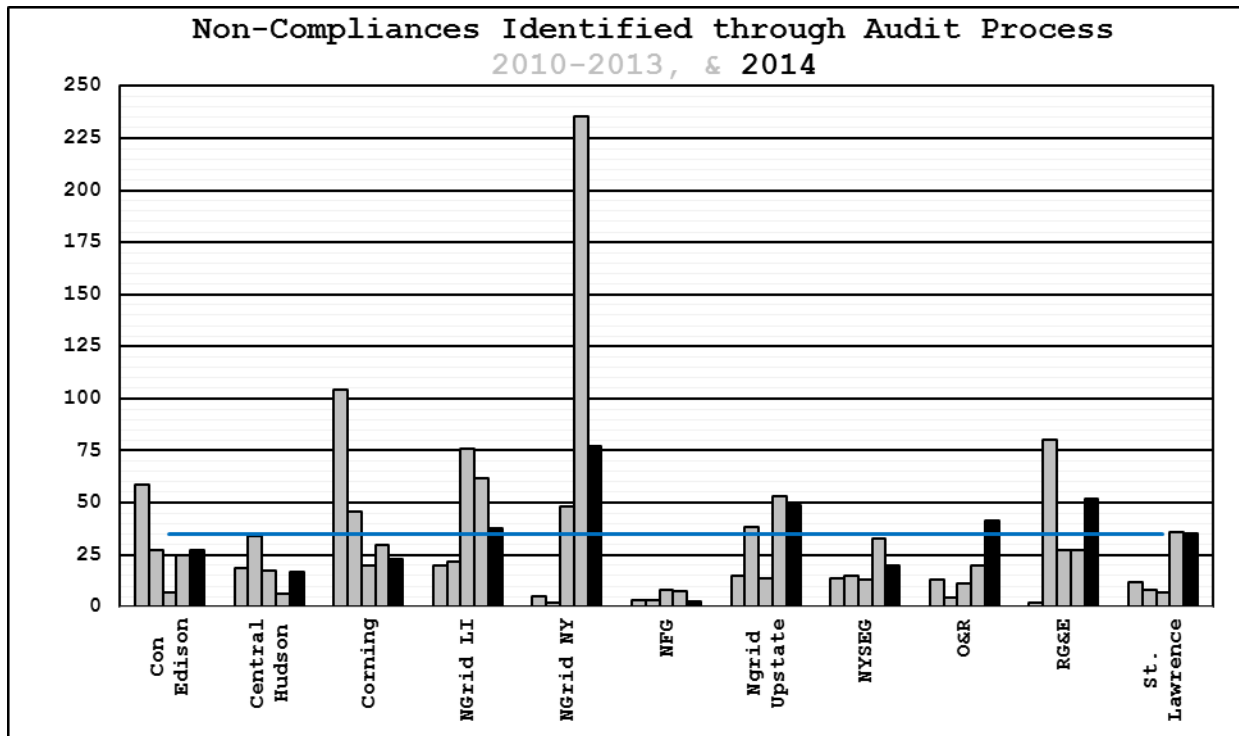
For the first time, LDCs will also be evaluated on their non-compliances with the Commission's pipeline safety regulations identified in routine Department audits. Each year, Staff conducts audits and investigations of the LDCs to determine their compliance with Commission safety regulations. Each non-compliance identified represent an area where an LDC failed to meet these minimum requirements as prescribed.

Staff conducts compliance audits on a calendar year basis. These audits typically include a review of record and field activities. For the record audit, Staff reviews the previous calendar year's documentation and reports on any instances of non-compliance with the regulations. Throughout the remainder of the year, Staff conducts field audits of the actual work being performed and compares those tasks with the requirements of the regulations and the LDCs' procedures. Similar to the record audit, any instances of non-compliance are documented and then reported.

For this measure, the year identified will consist of both the record and the field audits of a calendar year.<sup>10</sup> Since the 2015 record audits are in progress, **Figure #12** below only displays the total number of non-compliances from 2010 through 2014. The total number of non-compliances are then normalized by the number of operating head-quarters, OHQs, within a given LDC. For each OHQ, Staff conducts a separate audit of all functions as identified by the five year audit plan. The associated data per LDC, and the number of OHQs are located in **Appendices G and H.**

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<sup>10</sup> This typically includes records generated during the specific calendar year and field activities conducted during the specific calendar year.



**Figure #12** - Non-Compliances from 2010 through 2014

As seen in **Figure #12**, the data varies greatly from year to year. This, in part, is due to Staff's five year audit plan, in which sections of the pipeline safety regulations are reviewed on varying frequencies based on the likelihood of risk to public safety (life, property, and the environment). The regulations are either identified as high risk, in which an audit is conducted annually, or other risk, which is audited on a two to five year frequency, but does not exceed five years. The specific code sections identified as high and other risk are contained within **Appendices I** and **J**.

In 2014, non-compliances were identified in all eleven of the LDCs' operating service territories. Staff's focus is on compliance with the minimum pipeline safety regulations, but also includes areas in which LDCs, based upon past experiences and perceived risks, have chosen to exceed these minimum standards. The non-compliances identified were found based on a

randomly selected statistical sample and can indicate, among other things, a lack of Company control, an issue with internal quality assurance, or a culture within the Company that is willing to accept a certain level of non-compliance with the regulations. This culture is further demonstrated by the LDCs' repeated inability to comply with the minimum pipeline safety regulations, which is why mechanisms are being included within their respective rate cases to attach an associated liability for each non-compliance identified.

### **Conclusion**

Natural gas is a safe and reliable energy commodity if handled and transported properly. Safety performance measures are an important management tool that provide Staff and LDCs the ability to evaluate trends in key areas of gas safety (damage prevention, emergency response times, leak management, and non-compliances with the regulations). The LDCs must continue to focus on these areas to further reduce risks in distributing natural gas to consumers.

Over the past thirteen years, LDCs have worked to improve performance in the key areas of safety identified in this report. There has been a 72.5% improvement in total damage performance; the 30-minutes emergency response time has improved from 76.8% to 83.1%; and the year-end backlog of potentially hazardous leaks has decreased 94.7%, from 1,154 to 61. Over the past six years the total leak backlog has decreased 25.9%, going from 25,980 to 19,263. As LDCs continue their outreach efforts, adopt better practices in responding to leak and odor calls, and work to replace aging leak prone infrastructure, Staff expects further improvements will occur.

Staff will continue to evaluate LDCs' performance via the measures contained in this report and will send letters to

those LDCs mentioned as having improvement opportunities. Staff will request that those LDCs provide the Pipeline Safety Section of the Office of Electric, Gas, and Water specific details on how the LDC plans to improve. It is recommended that those LDCs evaluate their current and past practices, as well as reach out to the other LDCs that experienced higher performance levels to determine the incremental and, if necessary, entirely new approaches to pursue in order to achieve improvement.

Those LDCs that were able to make significant improvements are further encouraged to respond to this report and share best practices which enabled them to make these gains in performance. Staff will continue to meet with LDCs on a regular basis and monitor LDC performance. Performance trends will be discussed with LDCs at these meetings and will be analyzed in future performance measure reports. Staff continues to incorporate lessons learned in investigating the cause of natural gas incidents in New York State and across the country.

**Recommendations**

For each of the measures listed below, it is recommended that the LDCs identified self-assess their performance. Staff will send letters to these LDCs, requesting responses within 45 days. The identified LDCs should take into consideration (1) the analysis and recommendations in this report; and (2) the effectiveness of efforts made in response to previous performance measure reports. The LDCs will be directed to respond with improved action plans identifying their self-assessment and outlining incremental efforts on how they will improve in the future.

Mismark Damages:

- Con Edison, NGrid LI, and NGrid Upstate

No-Call Damages:

- NGrid LI

Company & Company Contractor Damages:

- Central Hudson, Con Edison, and NGrid LI

Excavator Error Damages:

- NFG, NYSEG, O&R, and RG&E

Year-End Total Leak Backlog:

- NGrid LI

**Appendix A**

## Number of One-call Tickets

LDCs	2011	2012	2013	2014	2015
Con Edison	159,355	166,749	177,102	213,612	224,526
Central Hudson	18,206	20,714	21,305	19,002	21,136
Corning	4,735	4,794	4,386	5,291	5,193
NGrid LI	134,852	139,274	188,412	174,833	156,964
NGrid NY	95,974	109,298	125,030	172,673	177,824
NFG	89,292	87,916	88,621	88,724	95,284
NGrid Upstate	83,091	88,109	86,500	96,672	104,422
NYSEG	61,757	65,086	56,039	55,299	55,468
O&R	24,315	25,130	25,193	25,809	27,790
RG&E	60,168	60,579	56,232	59,014	60,274
St. Lawrence	3,296	4,100	4,021	4,265	4,055

## Number of Damages due to Mismarks

LDCs	2011	2012	2013	2014	2015
Con Edison	60	26	38	60	71
Central Hudson	6	6	6	10	10
Corning	0	1	4	0	0
NGrid LI	75	102	75	79	89
NGrid NY	52	49	50	58	68
NFG	48	50	40	38	22
NGrid Upstate	40	34	30	37	74
NYSEG	21	28	25	23	21
O&R	10	16	14	8	10
RG&E	19	24	19	22	23
St. Lawrence	2	1	1	1	0

## Damages due to Mismarks per 1,000 Tickets

LDCs	2011	2012	2013	2014	2015
Con Edison	0.38	0.16	0.21	0.28	0.32
Central Hudson	0.33	0.29	0.28	0.53	0.47
Corning	0.00	0.21	0.91	0.00	0.00
NGrid LI	0.56	0.73	0.40	0.45	0.57
NGrid NY	0.54	0.45	0.40	0.34	0.38
NFG	0.54	0.57	0.45	0.43	0.23
NGrid Upstate	0.48	0.39	0.35	0.38	0.71
NYSEG	0.34	0.43	0.47	0.42	0.38
O&R	0.41	0.64	0.56	0.31	0.36
RG&E	0.32	0.40	0.34	0.37	0.38
St. Lawrence	0.61	0.24	0.25	0.23	0.00



**Appendix A (Continued)**

## Number of Damages due to No-calls

LDCs	2011	2012	2013	2014	2015
Con Edison	42	32	46	42	52
Central Hudson	14	12	12	13	14
Corning	1	2	7	4	0
NGrid LI	103	101	137	129	127
NGrid NY	30	35	51	46	63
NFG	60	60	43	61	53
NGrid Upstate	33	33	44	44	53
NYSEG	18	15	10	14	12
O&R	14	18	16	19	19
RG&E	28	21	16	19	18
St. Lawrence	1	1	0	0	0

## Damages due to No-calls per 1,000 Tickets

LDCs	2011	2012	2013	2014	2015
Con Edison	0.26	0.19	0.26	0.20	0.23
Central Hudson	0.77	0.58	0.56	0.68	0.66
Corning	0.21	0.42	1.60	0.76	0.00
NGrid LI	0.76	0.73	0.73	0.74	0.81
NGrid NY	0.31	0.32	0.41	0.27	0.35
NFG	0.67	0.68	0.49	0.69	0.56
NGrid Upstate	0.40	0.37	0.51	0.46	0.51
NYSEG	0.29	0.23	0.18	0.25	0.22
O&R	0.58	0.72	0.64	0.74	0.68
RG&E	0.47	0.35	0.28	0.32	0.30
St. Lawrence	0.30	0.24	0.00	0.00	0.00

## Number of Damages due to Excavator Error

LDCs	2011	2012	2013	2014	2015
Con Edison	73	69	54	52	58
Central Hudson	13	21	11	6	13
Corning	14	12	7	6	3
NGrid LI	130	115	148	119	145
NGrid NY	120	98	138	157	152
NFG	145	131	138	105	133
NGrid Upstate	174	185	166	159	171
NYSEG	57	67	54	61	75
O&R	25	34	43	27	33
RG&E	63	59	66	51	70
St. Lawrence	6	12	16	19	12

**Appendix A (Continued)**

## Damages due to Excavator Error per 1,000 Tickets

LDCs	2011	2012	2013	2014	2015
Con Edison	0.46	0.41	0.30	0.24	0.26
Central Hudson	0.71	1.01	0.52	0.32	0.62
Corning	2.96	2.50	1.60	1.13	0.58
NGrid LI	0.96	0.83	0.79	0.68	0.92
NGrid NY	1.25	0.90	1.10	0.91	0.85
NFG	1.62	1.49	1.56	1.18	1.40
NGrid Upstate	2.09	2.10	1.92	1.64	1.64
NYSEG	0.92	1.03	0.96	1.10	1.35
O&R	1.03	1.35	1.71	1.05	1.19
RG&E	1.05	0.97	1.17	0.86	1.16
St. Lawrence	1.82	2.93	3.98	4.45	2.96

## Number of Damages due to Co. &amp; Co. Contractor Error

LDCs	2011	2012	2013	2014	2015
Con Edison	35	33	23	34	37
Central Hudson	2	5	7	4	13
Corning	0	1	1	0	1
NGrid LI	5	1	4	6	9
NGrid NY	3	5	7	2	6
NFG	3	4	3	3	2
NGrid Upstate	5	4	8	5	2
NYSEG	4	10	2	5	1
O&R	12	10	9	12	9
RG&E	5	8	6	0	2
St. Lawrence	0	0	0	2	0

## Damages due to Co. &amp; Co. Contractor Error per 1,000 Tickets

LDCs	2011	2012	2013	2014	2015
Con Edison	0.22	0.20	0.13	0.16	0.16
Central Hudson	0.11	0.24	0.33	0.21	0.62
Corning	0.00	0.21	0.23	0.00	0.19
NGrid LI	0.04	0.01	0.02	0.03	0.06
NGrid NY	0.03	0.05	0.06	0.01	0.03
NFG	0.03	0.05	0.03	0.03	0.02
NGrid Upstate	0.06	0.05	0.09	0.05	0.02
NYSEG	0.06	0.15	0.04	0.09	0.02
O&R	0.49	0.40	0.36	0.46	0.32
RG&E	0.08	0.13	0.11	0.00	0.03
St. Lawrence	0.00	0.00	0.00	0.47	0.00

**Appendix A (Continued)**

## Number of Total Damages

<b>LDCs</b>	2011	2012	2013	2014	2015
Con Edison	210	160	161	188	218
Central Hudson	35	44	36	33	50
Corning	15	16	19	10	4
NGrid LI	313	319	364	333	370
NGrid NY	205	187	246	263	289
NFG	256	245	224	207	210
NGrid Upstate	252	256	248	245	300
NYSEG	100	120	91	103	109
O&R	61	78	82	66	71
RG&E	115	112	107	92	113
St. Lawrence	9	14	17	22	12

## Total Damages per 1,000 Tickets

<b>LDCs</b>	2011	2012	2013	2014	2015
Con Edison	1.32	0.96	0.91	0.88	0.97
Central Hudson	1.92	2.12	1.69	1.74	2.37
Corning	3.17	3.34	4.33	1.89	0.77
NGrid LI	2.32	2.29	1.93	1.90	2.36
NGrid NY	2.14	1.71	1.97	1.52	1.63
NFG	2.87	2.79	2.53	2.33	2.20
NGrid Upstate	3.03	2.91	2.87	2.53	2.87
NYSEG	1.62	1.84	1.62	1.86	1.97
O&R	2.51	3.10	3.25	2.56	2.55
RG&E	1.91	1.85	1.90	1.56	1.87
St. Lawrence	2.73	3.41	4.23	5.16	2.96

**Appendix B<sup>11</sup>**

<b>Con Edison</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	159,355	166,749	177,102	213,612	224,526	932,936
Mismarks	0.38	0.16	0.21	0.28	0.32	0.42
No-Calls	0.26	0.19	0.26	0.20	0.23	0.44
Excavator Error	0.46	0.41	0.30	0.24	0.26	0.93
Co. & Co. Contractor Error	0.22	0.20	0.13	0.16	0.16	0.09
Total	1.32	0.96	0.91	0.88	0.97	1.87

<b>Central Hudson</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	18,206	20,714	21,305	19,002	21,136	932,936
Mismarks	0.33	0.29	0.28	0.53	0.47	0.42
No-Calls	0.77	0.58	0.56	0.68	0.66	0.44
Excavator Error	0.71	1.01	0.52	0.32	0.62	0.93
Co. & Co. Contractor Error	0.11	0.24	0.33	0.21	0.62	0.09
Total	1.92	2.12	1.69	1.74	2.37	1.87

<b>Corning</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	4,735	4,794	4,386	5,291	5,193	932,936
Mismarks	0.00	0.21	0.91	0.00	0.00	0.42
No-Calls	0.21	0.42	1.60	0.76	0.00	0.44
Excavator Error	2.96	2.50	1.60	1.13	0.58	0.93
Co. & Co. Contractor Error	0.00	0.21	0.23	0.00	0.19	0.09
Total	3.17	3.34	4.33	1.89	0.77	1.87

<sup>11</sup> The 'total' damage performance may not equal the sum of the four metrics due to rounding.

**Appendix B<sup>9</sup> (Continued)**

<b>NGrid LI</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	134,852	139,274	188,412	174,833	156,964	932,936
Mismarks	0.56	0.73	0.40	0.45	0.57	0.42
No-Calls	0.76	0.73	0.73	0.74	0.81	0.44
Excavator Error	0.96	0.83	0.79	0.68	0.92	0.93
Co. & Co. Contractor Error	0.04	0.01	0.02	0.03	0.06	0.09
Total	2.32	2.29	1.93	1.90	2.36	1.87

<b>NGrid NY</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	95,974	109,298	125,030	172,673	177,824	932,936
Mismarks	0.54	0.45	0.40	0.34	0.38	0.42
No-Calls	0.31	0.32	0.41	0.27	0.35	0.44
Excavator Error	1.25	0.90	1.10	0.91	0.85	0.93
Co. & Co. Contractor Error	0.03	0.05	0.06	0.01	0.03	0.09
Total	2.14	1.71	1.97	1.52	1.63	1.87

<b>NFG</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	89,292	87,916	88,621	88,724	95,284	932,936
Mismarks	0.54	0.57	0.45	0.43	0.23	0.42
No-Calls	0.67	0.68	0.49	0.69	0.56	0.44
Excavator Error	1.62	1.49	1.56	1.18	1.40	0.93
Co. & Co. Contractor Error	0.03	0.05	0.03	0.03	0.02	0.09
Total	2.87	2.79	2.53	2.33	2.20	1.87

**Appendix B<sup>9</sup> (Continued)**

<b>NGrid Upstate</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	83,091	88,109	86,500	96,672	104,422	932,936
Mismarks	0.48	0.39	0.35	0.38	0.71	0.42
No-Calls	0.40	0.37	0.51	0.46	0.51	0.44
Excavator Error	2.09	2.10	1.92	1.64	1.64	0.93
Co. & Co. Contractor Error	0.06	0.05	0.09	0.05	0.02	0.09
Total	3.03	2.91	2.87	2.53	2.87	1.87

<b>NYSEG</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	61,757	65,086	56,039	55,299	55,468	932,936
Mismarks	0.34	0.43	0.47	0.42	0.38	0.42
No-Calls	0.29	0.23	0.18	0.25	0.22	0.44
Excavator Error	0.92	1.03	0.96	1.10	1.35	0.93
Co. & Co. Contractor Error	0.06	0.15	0.04	0.09	0.02	0.09
Total	1.62	1.84	1.62	1.86	1.97	1.87

<b>O&amp;R</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	24,315	25,130	25,193	25,809	27,790	932,936
Mismarks	0.41	0.64	0.56	0.31	0.36	0.42
No-Calls	0.58	0.72	0.64	0.74	0.68	0.44
Excavator Error	1.03	1.35	1.71	1.05	1.19	0.93
Co. & Co. Contractor Error	0.49	0.40	0.36	0.46	0.32	0.09
Total	2.51	3.10	3.25	2.56	2.55	1.87

**Appendix B<sup>9</sup> (Continued)**

<b>RG&amp;E</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	60,168	60,579	56,232	59,014	60,274	932,936
Mismarks	0.32	0.40	0.34	0.37	0.38	0.42
No-Calls	0.47	0.35	0.28	0.32	0.30	0.44
Excavator Error	1.05	0.97	1.17	0.86	1.16	0.93
Co. & Co. Contractor Error	0.08	0.13	0.11	0.00	0.03	0.09
Total	1.91	1.85	1.90	1.56	1.87	1.87

<b>St. Lawrence</b>	2011	2012	2013	2014	2015	<b>Statewide</b>
Number of Tickets	3,296	4,100	4,021	4,265	4,055	932,936
Mismarks	0.61	0.24	0.25	0.23	0.00	0.42
No-Calls	0.30	0.24	0.00	0.00	0.00	0.44
Excavator Error	1.82	2.93	3.98	4.45	2.96	0.93
Co. & Co. Contractor Error	0.00	0.00	0.00	0.47	0.00	0.09
Total	2.73	3.41	4.23	5.16	2.96	1.87

**Appendix C**

## Emergency Response Times for 45 Minutes (%)

<b>LDCs</b>	2011	2012	2013	2014	2015
Con Edison	98.5	99.2	99.4	99.2	99.2
Central Hudson	98.6	98.7	99.1	98.7	98.6
Corning	96.3	98.2	97.5	95.2	95.3
NGrid LI	96.0	93.0	94.9	93.8	94.4
NGrid NY	96.1	95.0	95.9	93.9	92.4
NFG	97.7	97.7	98.0	97.3	98.1
NGrid Upstate	95.0	95.9	94.6	94.4	95.3
NYSEG	95.1	95.1	95.5	95.7	93.8
O&R	97.8	98.4	98.9	99.1	99.0
RG&E	98.6	97.8	96.9	97.6	95.4
St. Lawrence	95.5	95.6	92.9	95.0	95.3



**Appendix C (Continued)**

## Emergency Response Times for 60 Minutes (%)

<b>LDCs</b>	2011	2012	2013	2014	2015
Con Edison	99.9	99.9	99.9	99.9	99.9
Central Hudson	99.8	99.7	99.9	99.9	99.7
Corning	99.0	99.8	99.4	98.5	98.1
NGrid LI	99.7	97.4	99.4	99.1	98.7
NGrid NY	99.3	98.5	99.4	98.2	96.6
NFG	99.4	99.4	99.5	98.5	99.3
NGrid Upstate	98.4	98.5	98.2	98.1	98.6
NYSEG	98.2	99.0	99.2	98.8	97.9
O&R	99.9	99.9	99.9	99.9	99.9
RG&E	99.8	99.6	99.4	99.5	98.9
St. Lawrence	99.8	99.8	99.2	98.9	97.9

**Appendix D**

## Total Leak Repairs on Mains by Material

<b>LDCs</b>	Unprot. Bare	Unprot. Coated	Prot. Bare	Prot. Coated	Plastic	Cast / Wrought Iron	Copper	Other
Con Edison	3,840	100	0	224	62	4,518	0	0
Central Hudson	134	0	0	92	20	166	0	0
Corning	181	10	12	5	2	0	0	0
NGrid LI	660	118	15	26	73	239	0	0
NGrid NY	170	0	0	87	17	2,673	0	0
NFG	2,643	0	0	115	173	234	0	27
NGrid Upstate	77	136	0	151	75	970	0	0
NYSEG	108	0	0	69	38	0	0	17
O&R	179	0	0	18	41	28	0	0
RG&E	21	0	0	209	19	10	0	13
St. Lawrence	0	0	0	2	0	0	0	0

**Appendix D (Continued)**

## Total Leak Repairs on Services by Material

<b>LDCs</b>	Unprot. Bare	Unprot. Coated	Prot. Bare	Prot. Coated	Plastic	Cast / Wrought Iron	Copper	Other
Con Edison	2,622	254	0	1,085	560	0	196	0
Central Hudson	53	0	0	56	57	53	0	0
Corning	141	10	0	1	8	0	0	0
NGrid LI	931	189	36	51	180	0	28	0
NGrid NY	390	0	0	470	279	0	358	0
NFG	617	0	0	77	252	0	0	54
NGrid Upstate	311	219	0	190	341	40	28	0
NYSEG	103	0	0	74	121	0	0	2
O&R	425	0	0	57	163	0	0	0
RG&E	16	0	0	209	71	4	5	15
St. Lawrence	0	0	0	0	0	0	0	0

**Appendix E**

## Backlog of Potentially Hazardous Leaks

LDCs	2011	2012	2013	2014	2015
Con Edison	11	10	13	36	7
Central Hudson	15	14	4	6	3
Corning	7	6	2	6	3
NGrid LI	21	25	10	8	5
NGrid NY	6	25	7	24	21
NFG	63	58	57	1	0
NGrid Upstate	3	4	0	5	17
NYSEG	6	0	1	4	4
O&R	8	4	0	0	2
RG&E	6	9	10	18	6
St. Lawrence	0	2	4	0	0

**Appendix E (Continued)**

## Repaired Potentially Hazardous Leaks

<b>LDCs</b>	2011	2012	2013	2014	2015
Con Edison	6,032	5,540	5,267	8,283	10,700
Central Hudson	201	211	273	327	352
Corning	129	66	45	102	194
NGrid LI	2,509	2,331	2,050	2,318	2,332
NGrid NY	3,114	2,287	2,839	4,457	4,236
NFG	1,589	1,995	1,747	2,025	2,195
NGrid Upstate	1,164	778	798	1,136	1,533
NYSEG	477	267	210	274	308
O&R	520	422	406	430	487
RG&E	322	195	292	284	306
St. Lawrence	7	52	4	12	8

**Appendix F**

## Backlog of Total Leaks

<b>LDCs</b>	2011	2012	2013	2014	2015
Con Edison	1,203	997	811	740	523
Central Hudson	246	261	201	197	126
Corning	406	320	242	225	200
NGrid LI	13,965	13,475	12,433	11,494	11,330
NGrid NY	3,682	4,191	4,475	4,068	3,820
NFG	4,561	4,056	3,575	3,053	2,066
NGrid Upstate	1,735	1,679	1,650	1,552	936
NYSEG	46	20	18	49	39
O&R	886	682	496	330	170
RG&E	88	122	40	68	60
St. Lawrence	1	3	4	0	0

**Appendix G**

## High Risk Non-Compliances Identified through Audit Process

<b>LDCs</b>	2010	2011	2012	2013	2014	<b># of OHQs</b>
Con Edison	36	132	22	100	83	5
Central Hudson	18	46	68	19	34	5
Corning	30	29	7	18	10	1
NGrid LI	29	41	98	85	32	2
NGrid NY	10	4	31	179	89	2
NFG	23	27	44	64	25	9
NGrid Upstate	94	356	57	293	114	11
NYSEG	86	131	110	185	105	13
O&R	12	7	11	18	12	2
RG&E	2	78	26	22	40	1
St. Lawrence	9	6	6	13	15	1

**Appendix H**

## Other Risk Non-Compliances Identified through Audit Process

<b>LDCs</b>	2010	2011	2012	2013	2014	<b># of OHQs</b>
Con Edison	258	4	12	24	54	5
Central Hudson	75	125	20	12	50	5
Corning	74	17	13	12	13	1
NGrid LI	11	2	54	38 <sup>12</sup>	44	2
NGrid NY	0	0	65	292	65	2
NFG	8	1	30	2	1	9
NGrid Upstate	69	67	96	292	424	11
NYSEG	90	64	59	238	150	13
O&R	14	2	11 <sup>13</sup>	22	71	2
RG&E	0	2	1	5	12	1
St. Lawrence	3	2	1	23	20	1

<sup>12</sup> Two of the 34 violations noted were for 16 NYCRR §255.481(a), and 16 NYCRR §255.491(b)(2). There were a total of 1,239 occurrences documented in the respective audit letter.

<sup>13</sup> One of the 11 violations noted was for 16 NYCRR §255.744(c). There were a total of 1,608 occurrences documented in the respective audit letter.



**Appendix I**

## High Risk Code Sections

<b>Code Section Title</b>	<b>Code Reference</b>
Material - General	255.53(a),(b),(c)
Transportation of Pipe	255.65
Pipe Design - General	255.103
Design of Components - General Requirements	255.143
Design of Components - Flexibility	255.159
Design of Components - Supports and anchors	255.161
Compressor Stations: Emergency shutdown	255.167
Compressor Stations: Pressure limiting devices	255.169
Compressor Stations: Ventilation	255.173
Valves on pipelines to operate at 125 psig or more	255.179
Distribution line valves	255.181
Vaults: Structural Design requirements	255.183
Vaults: Drainage and waterproofing	255.189
Protection against accidental over pressuring	255.195
Control of the pressure of gas delivered from high pressure distribution systems	255.197
Requirements for design of pressure relief and limiting devices	255.199
Required capacity of pressure relieving and limiting stations	255.201
Qualification of welding procedures	255.225
Qualification of Welders	255.227
Protection from weather	255.231
Miter Joints	255.233
Preparation for welding	255.235
Inspection and test of welds	255.241(a),(b)
Nondestructive testing-Pipeline to operate at 125 PSIG or more	255.243(a)-(e)
Welding inspector	255.244(a),(b),(c)
Repair or removal of defects	255.245
Joining Of Materials Other Than By Welding - General	255.273
Joining Of Materials Other Than By Welding - Copper Pipe	255.279
Joining Of Materials Other Than By Welding - Plastic Pipe	255.281
Plastic pipe: Qualifying persons to make joints	255.285(a),(b),(d)
Notification requirements	255.302
Compliance with construction standards	255.303

Inspection: General	255.305
Inspection of materials	255.307
Repair of steel pipe	255.309
Repair of plastic pipe	255.311
Bends and elbows	255.313(a),(b),(c)
Wrinkle bends in steel pipe	255.315
Installation of plastic pipe	255.321
Underground clearance	255.325
Customer meters and service regulators: Installation	255.357(d)
Service lines: Installation	255.361(e),(f),(g),(h),(i)
Service lines: Location of valves	255.365(b)
External corrosion control: Buried or submerged pipelines installed after July 31, 1971	255.455(d),(e)
External corrosion control: Buried or submerged pipelines installed before August 1, 1971	255.457
External corrosion control: Protective coating	255.461(c)
External corrosion control: Cathodic protection	255.463
External corrosion control: Monitoring	255.465(a),(e)
Internal corrosion control: Design and construction of transmission line	255.476(a),(c)
Remedial measures: General	255.483
Remedial measures: transmission lines	255.485(a),(b)
Strength test requirements for steel pipelines to operate at 125 PSIG or more	255.505(a),(b),(c),(d)
General requirements (Upgrades)	255.553(a),(b),(c),(f)
Upgrading to a pressure of 125 PSIG or more in steel pipelines	255.555
Upgrading to a pressure less than 125 PSIG	255.557
Conversion to service subject to this Part	255.559(a)
General provisions	255.603
Operator Qualification	255.604
Essentials of operating and maintenance plan	255.605
Change in class location: Required study	255.609
Damage prevention program	255.614
Emergency Plans	255.615
Customer education and information program	255.616
Maximum allowable operating pressure: Steel or plastic pipelines	255.619
Maximum allowable operating pressure: High pressure distribution systems	255.621
Maximum and minimum allowable operating pressure: Low pressure distribution systems	255.623
Odorization of gas	255.625(a),(b)
Tapping pipelines under pressure	255.627
Purging of pipelines	255.629

Control Room Management	255.631(a)
Transmission lines: Patrolling	255.705
Leakage Surveys - Transmission	255.706
Transmission lines: General requirements for repair procedures	255.711
Transmission lines: Permanent field repair of imperfections and damages	255.713
Transmission lines: Permanent field repair of welds	255.715
Transmission lines: Permanent field repair of leaks	255.717
Transmission lines: Testing of repairs	255.719
Distribution systems: Leak surveys and procedures	255.723
Compressor stations: procedures	255.729
Compressor stations: Inspection and testing relief devices	255.731
Compressor stations: Additional inspections	255.732
Compressor stations: Gas detection	255.736
Pressure limiting and regulating stations: Inspection and testing	255.739(a), (b)
Regulator Station Overpressure Protection	255.743(a), (b)
Transmission Line Valves	255.745
Prevention of accidental ignition	255.751
Protecting cast iron pipelines	255.755
Replacement of exposed or undermined cast iron piping	255.756
Replacement of cast iron mains paralleling excavations	255.757
Leaks: Records	255.807(d)
Leaks: Instrument sensitivity verification	255.809
Leaks: Type 1	255.811(b), (c), (d), (e)
Leaks: Type 2A	255.813(b), (c), (d)
Leaks: Type 2	255.815(b), (c), (d)
Leak Follow-up	255.819(a)
High Consequence Areas	255.905
Required Elements (IMP)	255.911
Knowledge and Training (IMP)	255.915
Identification of Potential Threats to Pipeline Integrity and Use of the Threat Identification in an Integrity Program (IMP)	255.917
Baseline Assessment Plan(IMP)	255.919
Conducting a Baseline Assessment (IMP)	255.921
Direct Assessment (IMP)	255.923
External Corrosion Direct Assessment (ECDA)(IMP)	255.925
Internal Corrosion Direct Assessment (ICDA)(IMP)	255.927
Confirmatory Direct Assessment (CDA)(IMP)	255.931

Addressing Integrity Issues (IMP)	255.933
Preventive and Mitigative Measures to Protect the High Consequence Areas (IMP)	255.935
Continual Process of Evaluation and Assessment (IMP)	255.937
Reassessment Intervals (IMP)	255.939
General requirements of a GDPIM plan	255.1003
Implementation requirements of a GDPIM plan.	255.1005
Required elements of a GDPIM plan.	255.1007
Required report when compression couplings fail.	255.1009
Requirements a small liquefied petroleum gas (LPG) operator must satisfy to implement a GDPIM plan	255.1015
Operation and maintenance plan	261.15
Leakage Survey	261.17(a),(c)
Carbon monoxide prevention	261.21
Warning tag procedures	261.51
HEFPA Liaison	261.53
Warning Tag Inspection	261.55
Warning tag: Class A condition	261.57
Warning tag: Class B condition	261.59

**Appendix J**

## Other Risk Code Sections

<b>Code Section Title</b>	<b>Code Reference</b>
Preservation of records	255.17
Compressor station: Design and construction	255.163
Compressor station: Liquid removal	255.165
Compressor stations: Additional safety equipment	255.171
Vaults: Accessibility	255.185
Vaults: Sealing, venting, and ventilation	255.187
Calorimeter or calorimeter structures	255.190
Design pressure of plastic fittings	255.191
Valve installation in plastic pipe	255.193
Instrument, control, and sampling piping and components	255.203
Limitations On Welders	255.229
Quality assurance program	255.230
Preheating	255.237
Stress relieving	255.239
Inspection and test of welds	255.241(c)
Nondestructive testing-Pipeline to operate at 125 PSIG or more	255.243(f)
Plastic pipe: Qualifying joining procedures	255.283
Plastic pipe: Qualifying persons to make joints	255.285(c)(e)
Plastic pipe: Inspection of joints	255.287
Bends and elbows	255.313(d)
Protection from hazards	255.317
Installation of pipe in a ditch	255.319
Casing	255.323
Cover	255.327
Customer meters and regulators: Location	255.353
Customer meters and regulators: Protection from damage	255.355
Customer meters and service regulators: Installation	255.357(a)-(c)
Customer meter installations: Operating pressure	255.359
Service lines: Installation	255.361(a),(b),(c),(d)
Service lines: valve requirements	255.363
Service lines: Location of valves	255.365(a),(c)
Service lines: General requirements for connections to main piping	255.367
Service lines: Connections to cast iron or ductile iron mains	255.369
Service lines: Steel	255.371
Service lines: Cast iron and ductile iron	255.373
Service lines: Plastic	255.375
Service lines: Copper	255.377

New service lines not in use	255.379
Service lines: excess flow valve performance standards	255.381
External corrosion control: Buried or submerged pipelines installed after July 31, 1971	255.455(a)
External corrosion control: Examination of buried pipeline when exposed	255.459
External corrosion control: Protective coating	255.461(a),(b),(d),(e),(f),(g)
External corrosion control: Monitoring	255.465(b)(c)(d)(f)
External corrosion control: Electrical isolation	255.467
External corrosion control: Test stations	255.469
External corrosion control: Test lead	255.471
External corrosion control: Interference currents	255.473
Internal corrosion control: General	255.475(a)(b)
Atmospheric corrosion control: General	255.479
Atmospheric corrosion control: Monitoring	255.481
Remedial measures: transmission lines	255.485(c)
Remedial measures: Pipelines lines other than cast iron or ductile iron lines	255.487
Remedial measures: Cast iron and ductile iron pipelines	255.489
Direct Assessment	255.490
Corrosion control records	255.491
General requirements (Testing)	255.503
Strength test requirements for steel pipelines to operate at 125 PSIG or more	255.505(e),(h),(i)
Test requirements for pipelines to operate at less than 125 PSIG	255.507
Test requirements for service lines	255.511
Environmental protection and safety requirements	255.515
Records (Testing)	255.517
Notification requirements (Upgrades)	255.552
General requirements (Upgrades)	255.553(d)(e)
Conversion to service subject to this Part	255.559(b)
Change in class location: Confirmation or revision of maximum allowable operating pressure	255.611(a),(d)
Continuing surveillance	255.613
Odorization	255.625 (e)(f)
Pipeline Markers	255.707(a),(c),(d),(e)
Transmission lines: Record keeping	255.709
Distribution systems: Patrolling	255.721(b)
Test requirements for reinstating service lines	255.725
Inactive Services	255.726
Abandonment or inactivation of facilities	255.727(b)-(g)
Compressor stations: storage of combustible materials	255.735
Pressure limiting and regulating stations: Inspection and testing	255.739(c),(d)
Pressure limiting and regulating stations: Telemetry or recording gauges	255.741
Regulator Station MAOP	255.743(c)

Service Regulator - Min. & Oper. Load, Vents	255.744
Distribution Line Valves	255.747
Valve maintenance: Service line valves	255.748
Regulator Station Vaults	255.749
Caulked bell and spigot joints	255.753
Reports of accidents	255.801
Emergency lists of operator personnel	255.803
Leaks General	255.805(a),(b),(e),(g),(h)
Leaks: Records	255.807(a)-(c)
Type 3	255.817
Interruptions of service	255.823(a)-(b)
Logging and analysis of gas emergency reports	255.825
Annual Report	255.829
Reporting safety-related conditions	255.831
General (IMP)	255.907
Changes to an Integrity Management Program (IMP)	255.909
Low Stress Reassessment (IMP)	255.941
Measuring Program Effectiveness (IMP)	255.945
Records (IMP)	255.947
Records an operator must keep	255.1011
High Pressure Piping - Annual Notice	261.19
Warning tag: Class C condition	261.61
Warning tag: Action and follow-up	261.63(a)-(h)
Warning Tag Records	261.65