

STATE OF NEW YORK
DEPARTMENT OF PUBLIC SERVICE

CASE 22-G-0165 - In the Matter of Staff's Analysis of Local
Distribution Company (LDC) Performance
Related to the Pipeline Safety Measures.

2021 PIPELINE SAFETY
PERFORMANCE MEASURES REPORT

Pipeline Safety and Reliability Section
Office of Electric, Gas and Water
June 16, 2022

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Executive Summary

The pipeline safety performance measures that make up this report are the result of collaborative efforts beginning in the 1990's between New York's 11 major natural gas local distribution companies (LDCs) and the New York State Department of Public Service (DPS). Revised in 2017, these measures improve identification and tracking in areas that are critical to pipeline safety. Most of the data used in the report was gathered and submitted by the LDCs using processes developed from these collaborative efforts.

This report examines the results of LDCs performance in specific safety areas that include damage prevention, emergency response, and leak management for 2021, as well as the results of Staff's audits and investigations that verify compliance with the minimum pipeline safety regulations. The Pipeline Safety and Reliability Section of the Office of Electric, Gas and Water has been producing this report since 2004.

Performance related to the total damage prevention measure shows improvement from the previous calendar year, from a rate of 1.85 to a rate of 1.62 per 1,000 one call tickets in 2021. Although in 2021 there was a 6.0% increase in the number of one-call tickets (or about 43,150), going from 765,498 to 808,652, the total number of damages decreased by 7.0%, going from 1,414 to 1,312. The 30-minute, 45-minute, and 60-minute emergency response time performances all improved slightly, and the total year-end leak backlog improved about 14.4% from the previous calendar year, going from 9,872 to 8,454. Both the total number of leaks discovered and the number of leak repairs increased from 14,188 in 2020 to 14,847 in 2021, and from 16,487 in 2020 to 17,209 in 2021, respectively. In 2020, non-

compliances were identified in all 11 of the major LDCs' operating service territories.

Overall, the data indicates that performance has substantially improved for LDCs across the state over the nineteen-year period Staff has been reporting performance to the New York State Public Service Commission (Commission). More notably, some LDCs performance improved, and others remained consistent throughout the impact of COVID-19. It is important to note that the LDCs maintained focus on these performance measures which ensured the same, if not a greater level of public safety. As LDCs continue their outreach and education efforts, adopt better practices in responding to leak, odor, and emergency reports, work to replace leak-prone infrastructure, work to replace leak-prone infrastructure, and QA/QC programs continue to mature Staff expects further performance improvements will occur. A high-level discussion of the results for each performance measure follows below.

The first measure, damage prevention, gauges the LDCs achievement in minimizing damages to buried natural gas facilities caused by excavation activities. The damage prevention measure is broken down into four categories: damages due to (1) mismarks, or the inaccurate marking by the LDC of its affected underground facility; (2) LDC's and its contractors; (3) third party excavator error; and (4) no-calls, or failure of an excavator to provide notice of intent to excavate to the one-call notification system. Three of the four categories saw improvements as follows: mismarks damage rate decreased from 0.42 per 1,000 one-call tickets in 2020, to 0.38 in 2021 (8.60%); third party damage rate had improved 18.7%, from 0.97 to 0.79, and the no-calls damage rate showed a slight improvement, from 0.38 per 1,000 one-call tickets, to 0.37

(0.10%) in 2021. For operators' and their contractors, performance remained consistent at 0.08 damages per 1,000 one-call tickets. Each one-call ticket is a request for mark-outs of the affected underground facility prior to the commencement of excavation.

The second measure, emergency response, reflects the LDCs' ability to respond promptly to reports of leak, odor, and emergency notifications by examining the percentage of reports that were responded to within three response time intervals. The first criterion is response to 75% of emergency reports within 30 minutes; the second, response to 90% within 45 minutes; and the third, response to 95% within 60 minutes.

LDCs performance for each of the emergency response time intervals improved in 2021. 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 leak, odor, or emergency reports, and have continued placing or adding personnel, in certain geographical areas during times of day that have historically high volumes of emergency notifications. In addition, the Commission has begun to incorporate incentives or positive revenue adjustments within the LDCs' respective rate proposals to encourage further improvements.

The third measure, leak management, examines LDCs' performances related to their leak inventories in addition to the evaluation of leaks discovered and leaks repaired. Potentially hazardous leaks include any leak that requires repair pursuant to Title 16 New York Codes Rules and Regulations (16 NYCRR) Part 255 (Types 1, 2A, and 2). Type 3 leaks, which do not have a prescribed repair timeframe 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 that a public safety concern has not developed. While Type 3 leaks are not expected to become a safety concern, LDCs continue to eliminate these leaks on their systems because it reduces lost gas, maintenance costs, the total number of emergency reports, methane leakage as a contributor to greenhouse gas emissions, and any dampening effect the persistent odor has on negatively impacting 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 natural gas migration into a building because the natural gas cannot vent as readily through the soil to the atmosphere due to the blanket of frost. In general, all LDCs have demonstrated improvement in these measures over the past several years. The total year-end leak backlog improved by approximately 14.4% from the previous calendar year, or by approximately 1,410 leaks (reduced from 9,871 to 8,454). The repairable year-end leak backlog decreased 8.9%, from 45 leaks in 2020 to 41 leaks in 2021. The total number of leaks discovered increased by 4.6% or 659 leaks, from 14,188 to 14,847, and total number of leaks repaired also increased by 4.4% or 722 leaks, going from 16,487 in 2020, to 17,209 in 2021.

For the fourth measure, non-compliances identified by Staff through annual audit activity, LDCs are evaluated on their compliance with the Commission's minimum pipeline safety regulations. This measure looks at non-compliance issues identified by Staff during audits and investigations of the LDCs. Each year, Staff conducts statistically based audits and investigations of the LDCs to determine their compliance. Each

non-compliance identified by Staff represents an area where an LDC failed to meet these minimum requirements as prescribed.

The data reported varies greatly from year to year, which is due, in part, to Staff's five-year audit cycle. These audits and investigations of the pipeline safety regulations are conducted on varying frequencies determined by the risk each regulation poses to public safety. The regulations are identified either as "high risk", in which an audit is conducted annually, or as "other risk", which are evaluated on a frequency (two, three, four, or five-years) not to exceed five years.

In 2020, Staff identified non-compliances in all 11 of the major LDCs' operating service territories. Although in 2020 some LDCs show an increase in the number of violations, the past seven years data still shows an overall downward trend. Regardless of the efforts made thus far, the goal for each LDC should remain the complete elimination of all non-compliances with pipeline safety regulations.

Introduction

The pipeline safety performance measures were developed as a means of evaluating LDC performance in areas presenting higher safety risks. Performance measures are tools used to gauge whether LDCs sustain and improve the safe and reliable operation and maintenance of natural gas distribution systems. These measures show how companies are performing from year to year, as well as the performance trends over time.

In developing the performance measures, Staff first identified areas in the LDCs' systems or operations that carry greater potential for harm to the public if performance is sub-standard. Methods were then developed for recording and tracking data, so they could be used as a practical management tool. This process resulted in identifying three performance measures: damage prevention - which examines damage to the LDCs' buried facilities resulting from excavator activities, which is a leading cause of incidents involving natural gas pipelines both within New York State and nationally; emergency response - which examines the amount of time that it takes an LDC to reach the site of a reported gas leak, odor, or emergency notification; and leak management - which examines LDC performance in reducing and managing leak inventory levels at year-end, and the evaluation of leaks discovered, and leaks repaired, in total, and per each LDC's respective system mileage.

On August 15, 2013,¹ the Commission issued a request for proposals for an independent consultant to perform a focused operational audit of the performance measure data as submitted

¹ Case 13-M-0314, Central Hudson Gas & Electric Corporation, et al. - Operational Audit, Letters to LCDs (issued August 15, 2013).

by nine of the 11 LDCs mentioned in this report. The audit's objectives were to assess the completeness and accuracy of the performance measure data submitted by LDCs and assess comparability among LDCs.

On April 20, 2016, the Commission issued an Order² releasing the completed audit report and provided guidance on LDCs response to the recommendations. Implementation plans to address each recommendation were due by May 20, 2016. In general, the consultant reported that the LDCs complied with the intent of these performance measures and, for the most part, accurately reported their respective data. Some of the consultant's recommendations focused on the LDCs' lack of written policies and procedures to address and collect data, instances where the methodology used to calculate the data has varied, and minor inconsistencies among LDCs in the compilation of their respective data.

An example of where the data has varied is in the use of classifications of resent, refreshed, revised, retransmitted, reissued, or relocated one-call notifications. In short, the terminology used between the one-call centers is inconsistent - which may have led to these tickets having been accounted for differently among LDCs. Per the guidance Staff provided each LDC in December 2015, that retransmits, or refreshes, are defined as a one-call ticket, which has the same requesting party and location as the proposed scope of work. Retransmits, or refreshes, should be excluded by all LDCs from the one-call ticket count for the purposes of the damage prevention measure.

² Case 13-M-0314, supra, Order Releasing Report and Providing Guidance on Response (issued April 20, 2016).

On March 10, 2017, the Commission issued an Order³ approving the implementation plans submitted by LDCs and directed the LDCs to implement those plans. As a result of the Order, the issue identified with how retransmitted or refreshed one-call tickets are counted should resolve itself within the next few years as LDCs make changes to their existing programs. Thus, the data represented in this year's report may vary per LDC based on the extent to which each LDC has incorporated into its reporting process the treatment of these specific types of one-call tickets and how well the LDC followed the 2017 guidance and submitted implementation plans.

For the final measure, non-compliances identified by Staff, LDCs are evaluated on their compliance with the Commission's minimum pipeline safety regulations. This measure looks at non-compliance issues as identified by Staff during audits and investigations of the LDCs. Each year, Staff conducts audits and investigations of the LDCs to determine their compliance. Each non-compliance identified represents an area in which an LDC failed to meet the prescribed minimum requirements.

Non-compliance with pipeline safety regulations could cause or contribute to a major incident. For this reason, it's important these audit findings are publicly transparent and continue to track performance, as well as repeat violations, over time. A further deterrent to non-compliances are negative revenue adjustments, which have been incorporated into all of the 11th LDCs' respective rate plans.

³ Case 13-M-0314, supra, Order Approving Implementation Plans (issued March 10, 2017).

Performance and Analysis

Throughout this report, except for the compliance measure, the figures display performance results from 2017 through 2021 for each LDC.⁴ The grey columns in the bar graphs represent 2017 through 2020, and the black column represents the 2021 performance. For the compliance measure, the results from 2016 through 2020 are displayed based on the timing of when audits were completed. The blue horizontal lines on the bar graphs represent the combined LDC performance levels for the specifically identified measure.

Damage Prevention

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

Damage prevention procedures are designed to work as follows: (1) an excavator provides notice of their intent to excavate to a one-call notification system⁵ and waits two full working days for underground facilities to be marked; (2) the one-call notification system transmits an excavation notice ("one-call ticket" or "ticket") to the member operators whose facilities may be affected by that excavation activity; (3) the affected operators clearly and accurately mark the location of their buried facilities in or near the excavation area; and (4)

⁴ Historical calendar year data and associated Case numbers can be found in Appendix A of this report.

⁵ New York State has two one-call notification systems, one for New York City and Long Island, New York 811, and the second for the remainder of the state, UDig NY (formerly known as Dig Safely New York).

excavators work carefully around the marked facilities to avoid damages. Damages to underground facilities can be categorized by identifying where in this four-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 respective service territory provides a useful basis for assessing performance. The data used in these analyses are contained in Appendices B and C. The method used to normalize each LDC's data is the number of damages per 1,000 one-call tickets. As previously mentioned, inconsistencies were identified through the operational audit. Thus, the data represented in this year's report may vary by LDC when compared to prior performance measure reports.

The numbers of damages are then categorized as damages resulting from mismarks, excavator error, company employees and contractors, and no-calls. Each ticket received provides an LDC with the opportunity to mark its affected facilities accurately. Hence, for damages due to mismarks, the report examines the number of damages caused by mismarks per 1,000 tickets received for each LDC and so on for each of the other categories.

Once a one-call ticket is requested by calling the toll-free telephone number (811) and the facilities are marked, the excavator can, if working carefully, avoid damage to underground facilities. Third party excavator error damages are historically the largest component of total damages, primarily because of the need to educate third party contractors in safe excavation and best practices. Most large excavators are aware of the existence of the one-call systems and their requirement to provide notification. Many excavators, especially small excavators, are not as well-versed in the additional

requirements - such as respecting tolerance zones, verifying locations of underground facilities by means of hand-dug test holes, notifying operators of unverifiable marked facilities, maintaining the markings, and maintaining four inches of clearance with powered equipment and the verified facility. Educating excavators on how to avoid underground facility damage once mark-outs have been requested requires more in-depth outreach and training. The Commission cannot order such training for non-utility excavator personnel. This is one of the reasons why, through its enforcement process, the Commission considers reducing penalties contingent upon successful completion of training provided by the one-call centers.

Damages caused by LDCs' personnel or by its contractors are also included in the damage analysis as a separate category. The LDCs' personnel should have sufficient training, knowledge, qualifications, and experience to work carefully near the LDC's facilities. LDCs should also have better control over the contractors they hire to perform work than they have over unaffiliated excavators. Thus, this category should be the smallest contributor to the total damages and, in theory, the easiest to improve. The current measure tracks damages caused by all utility operations within an LDC. That is, for an electric and gas combination utility, damages to gas facilities caused by electric crews or electric company contractors are combined.

Damages due to no-calls are instances where an excavator failed to provide notice of their intent to excavate to either of the one-call notification systems. This measure 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 additional

and more effective efforts are needed by the LDC to make excavators aware of the dangers of working around buried facilities and the importance of using the one-call notification systems.

It is important to note that the damage prevention measure evaluates actual damages to an LDC's underground natural gas facilities.

A total of 1,312 underground damages were reported in 2021 for the 11 major natural gas LDC facilities. For the previous ten years, the average number of total damages has been 1,545. This consistency demonstrates that any performance improvements or declines have primarily been driven by the number of one-call tickets. In 2021 there was a slight increase in the total number of one-call tickets (going from 765,498 to 808,652, or 5.6%), however, the number of total damages continue to decrease in 2021, going from 1,414 to 1,312, or 7.2%.

Staff supports the LDCs' and excavators' efforts by enforcing the Commission's damage prevention regulations prescribed within 16 NYCRR Part 753 - Protection of Underground Facilities. Over the past five years, approximately 2,077 citations that were issued, and that led to 437 training sessions that were completed by excavators with either New York 811 or UDig NY as part of the Commission's enforcement process. Additionally, approximately \$4,350,793 in penalties have been collected for this same period.

Figure 1 below displays the collective performance regarding the damage prevention measures.

Damage Prevention Measure	2017	2018	2019	2020	2021
Number of Tickets	978,049	777,371	841,849	765,498	808,652
	0.37	0.52	0.48	0.42	0.38

Mismarks					
Co. & Co. Contractor Error	0.08	0.11	0.08	0.08	0.08
Excavator Error	0.78	1.01	0.88	0.97	0.79
No-Calls	0.37	0.41	0.40	0.38	0.37
Total Damages (per 1,000)	1.60	2.05	1.84	1.85	1.62

Figure 1 - Collective Damage Prevention Performance

As previously mentioned, there was a 5.6% increase in the number of one-call tickets.⁶ A review of the number of damages, shows that there were 10 fewer mismark damages, going from 319 in 2020 to 309 in 2021, and 14 more no-call damages going from 288 in 2020 to 302 in 2021. The increase in the number of no-call damages might indicate that more effort is still to be made in that of educating the excavators of the importance and the need of using the one call notification system of their intent to excavate. For LDC's and their contractors, the number of damages remained the same at 64. For third-party damages, there was a drop in the number of damages, 13.2% (going from 743 in 2020 to 645 in 2021). Specific operator performance for each of the damage prevention categories are located in Appendices B and C.

Individual LDC performance for total damages per 1,000 tickets, is displayed in Figure 2 below.

⁶ The total damage performance may not equal the sum of the four categories due to rounding.

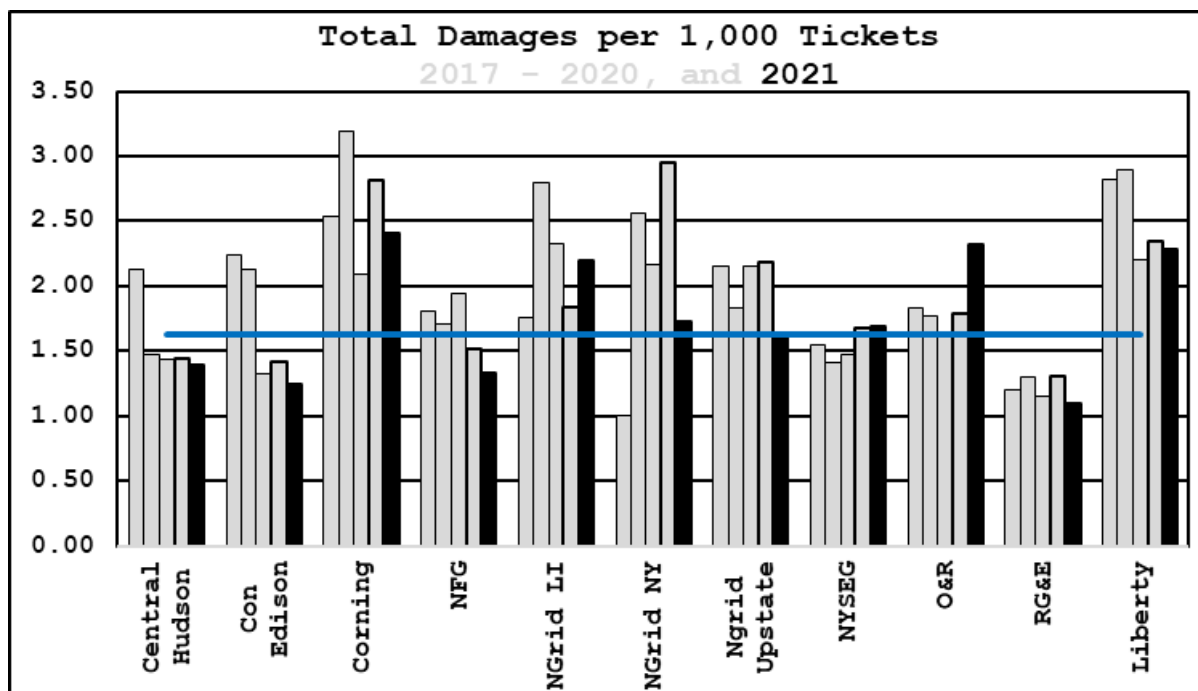


Figure 2 - Total Damages per 1,000 Tickets

As seen in Figure 2, eight LDCs improved, one remained the same as the previous year, and two LDCs performed worse than the previous year. Specifically: Central Hudson Gas & Electric Corporation (Central Hudson) slightly improved (3.8%) when normalized by 227 fewer tickets, going from 44 total damages in 2020 to 42 total damages in 2021; Consolidated Edison Company of New York, Inc. (Con Edison) performance improved (12.0%) with 18,219 more tickets, going from 140 total damages in 2020 to 138 in 2021; Corning Natural Gas Corporation's (Corning) performance (14.6%) with 278 less tickets going from 16 total damages in 2020 to 13 total damages in 2021; National Fuel Gas Distribution Corporation (NFG) also improved (11.8%) with 13,941 more tickets going from 174 total damages in 2020 to 172 total damages in 2021; Keyspan Gas East Corporation d/b/a National Grid (NGrid LI) performed worse than previous year (19.2%) with 14,335 less tickets going from 278 total damages in 2020 to 300 total

damages in 2021; The Brooklyn Union Gas Company d/b/a National Grid NY (NGrid NY) shows a significant improvement (41.3%) with 9,918 more tickets going from 267 total damages in 2020 to 174 or 93 less damages in 2021; Niagara Mohawk Power Corporation d/b/a National Grid (NGrid Upstate) also shows significant improvement in 2021 (25.5%) with 7,474 more tickets going from 230 total damages in 2020 to 185 or 45 less damages in 2021; New York State Electric & Gas Corporation (NYSEG) performed about the same as in previous year(0.3%) with 791 less in tickets in 2021, going from 102 total damages to 101 total damages; Orange & Rockland Utilities, Inc. (O&R) performed worse than previous year (29.7%) with 2,966 more tickets, going from 61 total damages in 2020 to 86 total damages in 2021; Rochester Gas & Electric Corporation (RG&E) performed better than previous year (15.85%) with 5,713 more tickets going from 90 total damages in 2020 to 82 damages in 2021; and Liberty Utilities Corp. (Liberty) performed slightly better than the previous year (2.7%) with 554 more tickets, going from nine total damages in 2020 to 11 damages in 2021.

LDCs performance for excavator error damages per 1,000 tickets, is displayed in Figure 3 below.

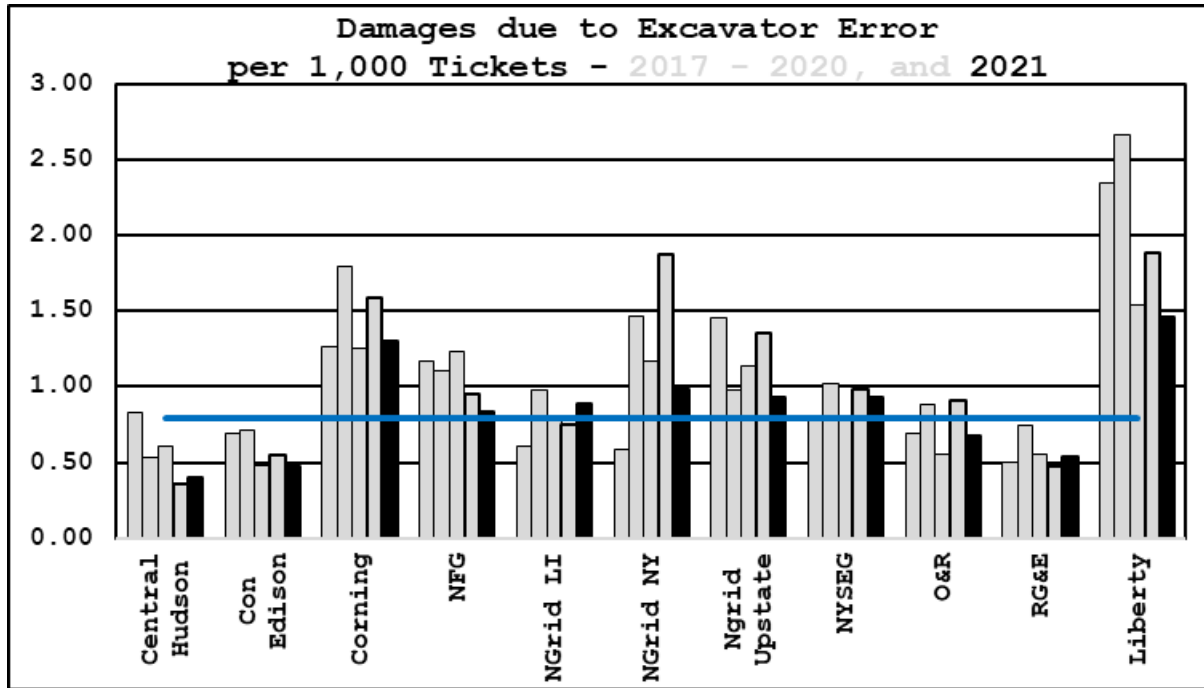


Figure 3 - Excavator Error Damages per 1,000 Tickets

As seen in Figure 3, eight LDCs improved and three LDCs performed worse than the previous year. Among those showing significant improvement are NGrid NY (47.2%) going from 169 in 2020 to 99 excavator error damages in 2021, and NGrid Upstate (31.24%) going from 144 in 2020 to 106 in 2021. As LDCs continue their outreach, education, and training efforts, the public and excavators will be more informed as to the required safe digging protocols prescribed within the one-call regulations, found in 16 NYCRR Part 753.

LDC performance for no-call damages per 1,000 tickets, is displayed in Figure 4 below.

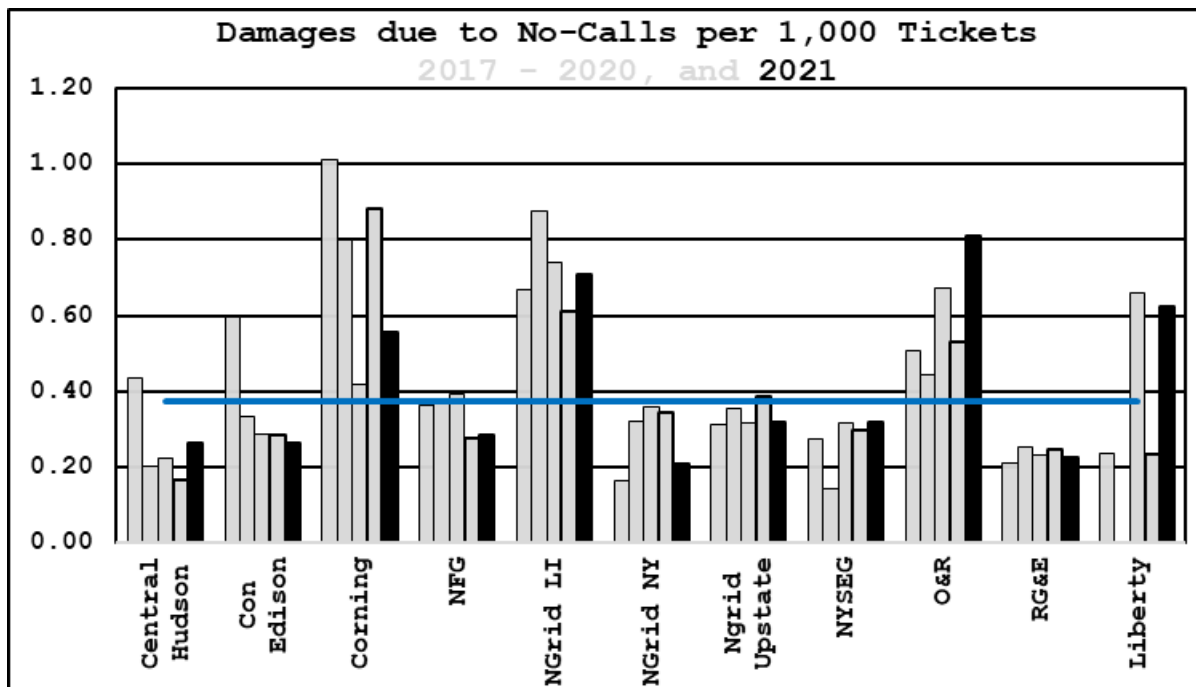


Figure 4 - No-call Damages per 1,000 Tickets

As seen in Figure 4, five LDCs improved, five LDCs performed worse than the previous year, and one LDC remained the same as previous year. Among those improving, gains were made by: Con Edison (6.5%) going from 28 no-call damages in 2020, to 31 in 2021; Corning (36.9%) going from five to three; NGrid NY (38.95%) going from 31 to 21; NGrid Upstate (18.0%) going from 41 to 36. RG&E remained the same as the previous year at 17 damages due to no call.

Use of the three-digit 811 dialing system, consistent enforcement taken by Staff for violations of 16 NYCRR Part 753, newer legislation,⁷ and public outreach, education, and training efforts taken by LDCs and the one-call systems, all contributed to raising excavator awareness regarding their obligations to

⁷ Case 18-M-0777, In the Matter of Excavator Training Requirements to Comply with Chapter 333 of the Laws of 2018.

not only participate in the one-call system, but to excavate safely around underground facilities.

To aid in the enforcement of 16 NYCRR Part 753, LDCs voluntarily forward information they collect about excavators who damaged underground facilities without having mark-out requests. In a more recent effort, some LDCs have also begun reporting more of their damages, regardless of cause or entity that damaged the facility, allowing Staff to perform more damage investigations in real-time.

Once notified, Staff evaluates the specifics of each damage, performs on-site interviews and investigations, identifies the root cause, or causes, of the damage, obtains any pertinent information (such as photographs, measurements, etcetera), and pursues enforcement actions where appropriate. This enforcement effort, coupled with increased reporting frequencies and associated penalties, are deterrents to non-compliance. Where appropriate, enforcement cases are resolved by a consent order agreement in which the financial penalty is often reduced if the excavator agrees to attend either a free training session provided by the one-call system covering the area where the damage occurred, or complete UDig NY's Certified Excavator Program. All LDCs are encouraged to continue with their efforts in notifying Staff of 16 NYCRR Part 753 incidents.

LDC performance for mismark damages per 1,000 tickets is displayed in Figure 5 below.

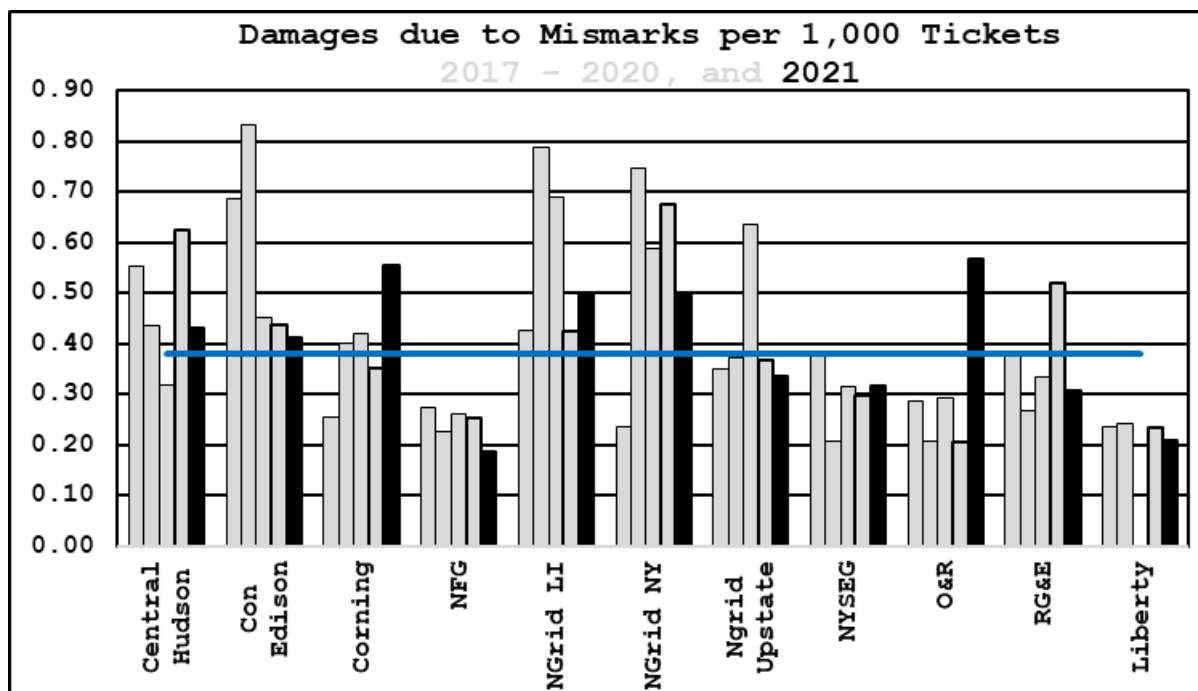


Figure 5 - Mismark Damages per 1,000 Tickets

As seen in Figure 5, seven LDCs improved and five LDCs performed worse than the previous year. Among those improving, gains were made by: Central Hudson (31.6%) going from 19 mismark damages in 2020, to 13 in 2021; Con Edison (5.8%) going from 43 to 48; NFG (26.2%) going from 29 in 2020 to 24 in 2021; NGrid NY (26.3%) going from 61 to 50; NGrid Upstate (9.0%) going from 39 to 38; RG&E (41.0%) going from 36 to 23.; and SLG 11.5% which even though in 2021 there were 554 more one-call tickets, the number of mismark remained the same as in the previous year at one mismark damage. Overall, the LDCs showed a 3.13% improvement in performance going from 319 mismark damages in 2020, to 309 in 2021.

Staff typically expects to see general improvements for damages due to mismarks as LDCs continually adopt best practices to locate their facilities, as they remove older leak-prone pipe, which is more difficult to accurately identify on

facility records than the newer pipe that replaced it, whose exact locations are known, and as LDCs develop better controls over their locating contractors.

LDC performance for company and its contractor damages per 1,000 tickets is displayed in Figure 6 below.

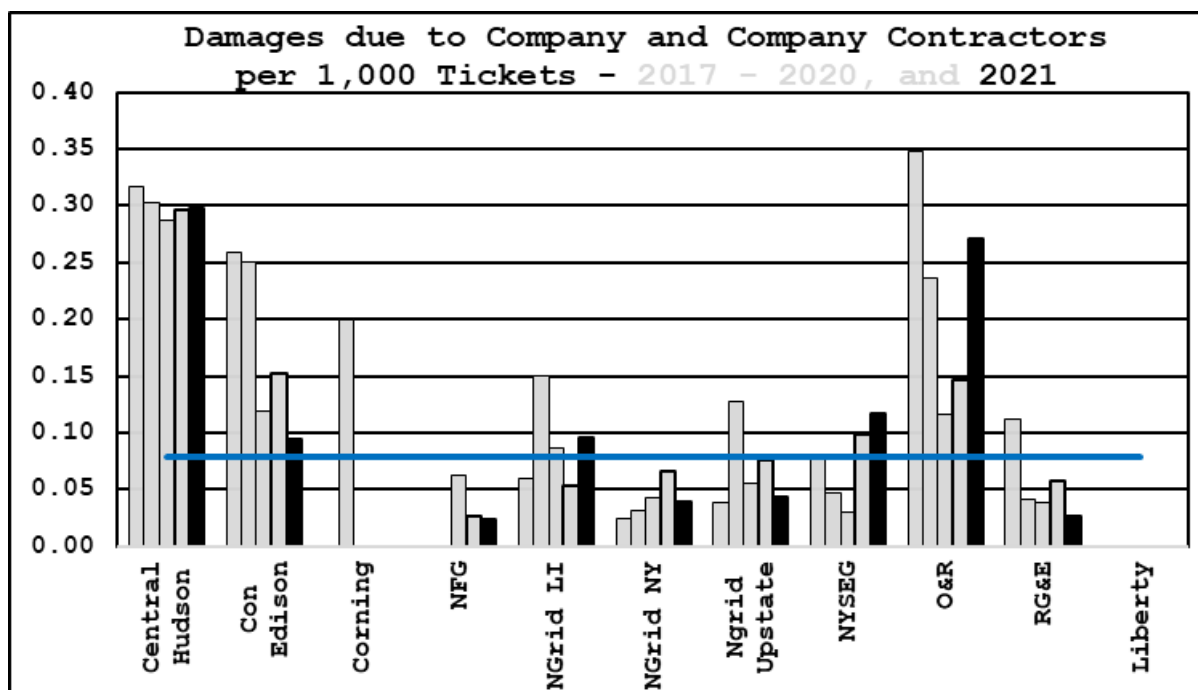


Figure 6 - Damages due to Company and Company Contractors per 1,000 Tickets

As seen in Figure 6, five LDCs improved, two LDCs, Central Hudson and NFG remained the same as the previous year, and four LDCs performed worse than the previous year. Among those improving, gains were made by: Con Edison (38.1%) going from 15 company and its contractor damages in 2020, to 11 in 2021, and NGrid NY (39.9%) going from six to four in 2021. Corning maintained zero damages.

With the Commission's support and encouragement, the LDCs have increased their proactive removal of leak-prone pipe.

This leads to more excavation from both the LDCs' and their contractors near and around buried natural gas facilities and, in turn, increases the opportunity for damage. Despite the increased excavation activity, performance in this category remained at 64 damages in 2021.

On the other hand, LDCs are expected to maintain better control over the contractors they hire to perform work for them than they have over third-party excavators. These employees/contractors should have the training, knowledge, qualifications, and experience to work carefully near and around underground natural gas facilities. The LDCs point out that often these damages are to facilities that are in the process of being removed. When a damage occurs, the LDCs own crews and contractors are more prepared than third-party excavators to promptly control the situation.

While it's true that damages to facilities can occur while they are removed, 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, therefore should be avoided. All damages not only pose safety concerns but have the potential to lead to service outages and other disruptions, such as road closures and evacuations.

As noted above, this measure has the lowest number of damages, and is the smallest contributor to the overall damage prevention measure. Further, the graph's vertical scale in Figure 6 makes the year-to-year changes appear more dramatic than those displayed 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 (such as Corning and Liberty) can have great variations from year to year because of the relative lack of one-call tickets

within their service territories. In fact, the data suggests that even the larger LDCs can experience sizable volatility in performance, especially in 2020 and 2021, in the context of pandemic, with reduced construction activities due the impact COVID 19 had in all areas.

Figure 7 below displays a comparison between 2012 and 2021 of the collective damage prevention performance, broken down by damage category:

Metric	2012	2021
Number of Tickets	685,263	808,652
Mismarks	0.49	0.38
Co. & Co. Contractor Error	0.12	0.08
Excavator Error	1.17	0.79
No-calls	0.48	0.37
Total (per 1,000)	2.26	1.62

Figure 7 - Comparison between 2012 and 2021

Emergency Response

Commission regulation 16 NYCRR §255.825(d) requires that LDCs provide a monthly report that includes a breakdown of the total number of leak, odor, and emergency reports received and responded to during the month in intervals of 15 minutes during normal business hours, weekdays outside business hours, and weekends and holidays. The following have been established as expected emergency response standards: respond to 75% of

leak, odor, and emergency reports within 30 minutes; 90% within 45 minutes; and 95% within 60 minutes. Typically, LDCs have few instances of response times exceeding 60 minutes.⁸

The intent of the reporting requirement and the performance measure is to evaluate LDCs response to natural gas leak, odor, and emergency notifications that are generated by the public or other authorities (for example, police, fire, and municipalities). For the purposes of reporting, the response times are measured from the time the notification is sent from the company dispatch to the time qualified company personnel arrive at the location.⁹

Figure 8 displays the 11 major LDCs' annual emergency response time performance for each standard since 2017, with the 2021 performance presented in black. Although in 2021 the total number of leak, odor, and emergency reports was slightly higher (2.0%), going from 152,005 in 2020 to 154,996 in 2021, the LDCs performed better than the previous year, again, exceeding the 75%, 90%, and 95%, minimum standards for the respective calendar year.

⁸ The LDCs are expected to review the circumstances of each instance exceeding 60 minutes and, where possible, work towards their elimination.

⁹ Qualified personnel are defined as company representatives who are properly trained and equipped to investigate leak, odor, and emergency reports in accordance with approved company procedures and 16 NYCRR §255.604, operator qualification requirements.

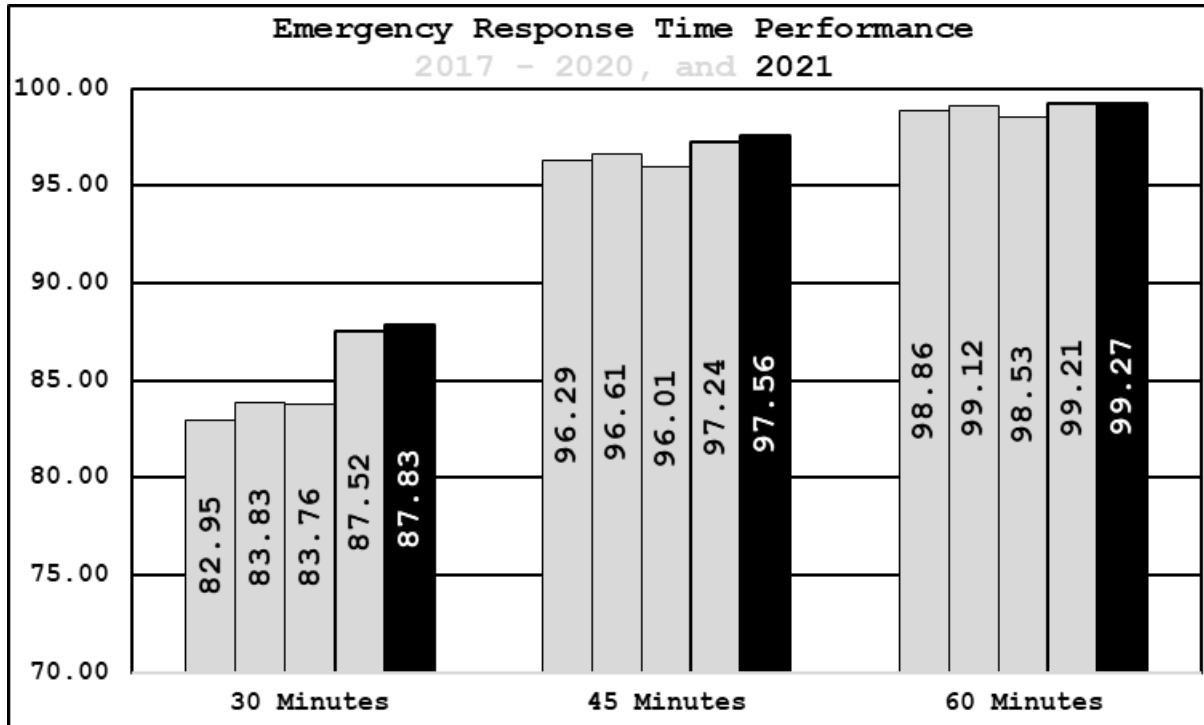


Figure 8 - Emergency Response Time Performance

The past 10 years data, 2012 through 2021, shows a downward trendline in number of calls, with an average of 177,272 leak, odor, and emergency notifications per year across the LDCs. The decline in number of notifications may be attributed to the reduction of leaks, which will be discussed below in the leak management section, and also due to a more aggressive and proactive leak prone pipe removal programs approved by the Commission within rate case proceedings, which also reduces the number of leaks.

Figure 9 below presents the percentage of emergency response times achieved within 30 minutes by each LDC in the past five calendar years, 2017 through 2021.

LDCs	2017	2018	2019	2020	2021
Central Hudson	79.2	82.8	83.3	84.4	84.3

Con Edison	90.0	92.0	94.9	98.3	95.9
Corning	86.6	77.2	79.9	77.3	86.5
NFG	94.0	94.7	95.0	95.4	95.8
NGrid LI	74.3	74.1	75.4	83.1	82.1
NGrid NY	77.3	78.9	78.1	81.5	78.7
NGrid Upstate	80.4	79.3	79.4	80.5	84.3
NYSEG	79.0	76.1	72.5	76.7	83.6
O&R	89.0	88.2	92.4	93.2	91.8
RG&E	75.5	75.6	64.3	77.9	89.1
Liberty	79.6	79.6	81.9	75.4	77.7

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

As seen in Figure 9, all eleven LDCs met the 30-minute standard. The data for the 45- and 60-minute response times are provided in Appendices D and E, respectively.

It is encouraging to see that all LDCs have made efforts over the years to reach and exceed the emergency response time standards jointly established for this measure. Staff expects that all LDCs continue to evaluate and monitor their performance and to identify areas where best practices can be implemented to further exceed the benchmarks.

Leak Management

The purpose of evaluating the LDCs' leak management programs is to gauge how the LDCs are responding to and addressing leaks on their systems, eliminating potentially hazardous leaks that are found, reducing total leak backlogs, and evaluating the number of leaks discovered and leaks repaired, in total and per each LDC's respective system mileage.

The natural gas pipeline safety regulations contained in 16 NYCRR Part 255 include requirements for classifying leaks according to their relative hazard by considering factors such as whether natural gas migration is detected near buildings, in manholes, vaults, catch basins, under paved versus unpaved areas, etcetera. All leaks classified as potentially hazardous must be monitored and repaired according to the pipeline safety regulations, with any hazardous conditions being immediately eliminated. All other leaks must be reevaluated during the next required leakage survey or annually, whichever is less, but have no mandatory repair timeframes.

Unrepaired, potentially hazardous leaks pose an increased safety risk to the public. The risk is further exacerbated when the ground contains frost, which increases the chance natural gas will migrate into buildings. The frost acts essentially as a blanket that does not allow the gas to readily vent to atmosphere through the soil, allowing the natural gas to find underground pathways and enter structures. Although leak backlogs on any day are 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 the last two weeks in December.

The data reported by the LDCs related to leak management are contained in Appendices F through L. 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 pipeline safety regulations. The data reported include leak repairs on mains and services by material type; the backlogs of potentially hazardous leaks and in total; and repaired and discovered potentially hazardous leaks.

Analysis of leak management data can also provide an indication of the material type's susceptibility to leakage. As a means of continuously improving leak management programs, Staff encourages LDCs to identify and remove leak prone pipe, such as cast or wrought iron, bare or ineffectively coated steel, and certain brittle plastic materials. Incentive programs to remove deteriorating and leak prone infrastructure and/or reduce leak backlogs have been incorporated into most of the LDCs' past and current rate plans. The long-term goal is the elimination of aging pipeline infrastructure that, due to its vulnerability to leaks, presents greater safety risks to the public. Thus, the aging pipeline infrastructure is removed and replaced with modern materials that have shown to be less likely to leak. These replacement programs are the primary driver in the significant reduction of hazardous leaks, total leaks, and the associated fugitive methane emissions.

The overall year-end backlog of potentially hazardous leaks decreased from 45 in 2020 to 41 in 2021 and is down 96.03% when compared to 1,178 in 2003. This demonstrates that LDCs have maintained continual efforts in managing leak surveys and are completing them earlier in the year, to allow for time to repair discovered leaks.

Figure 10 displays the backlog of potentially hazardous leaks¹⁰ from 2017 through 2021. The numerical leak data for this category is contained in Appendix H.

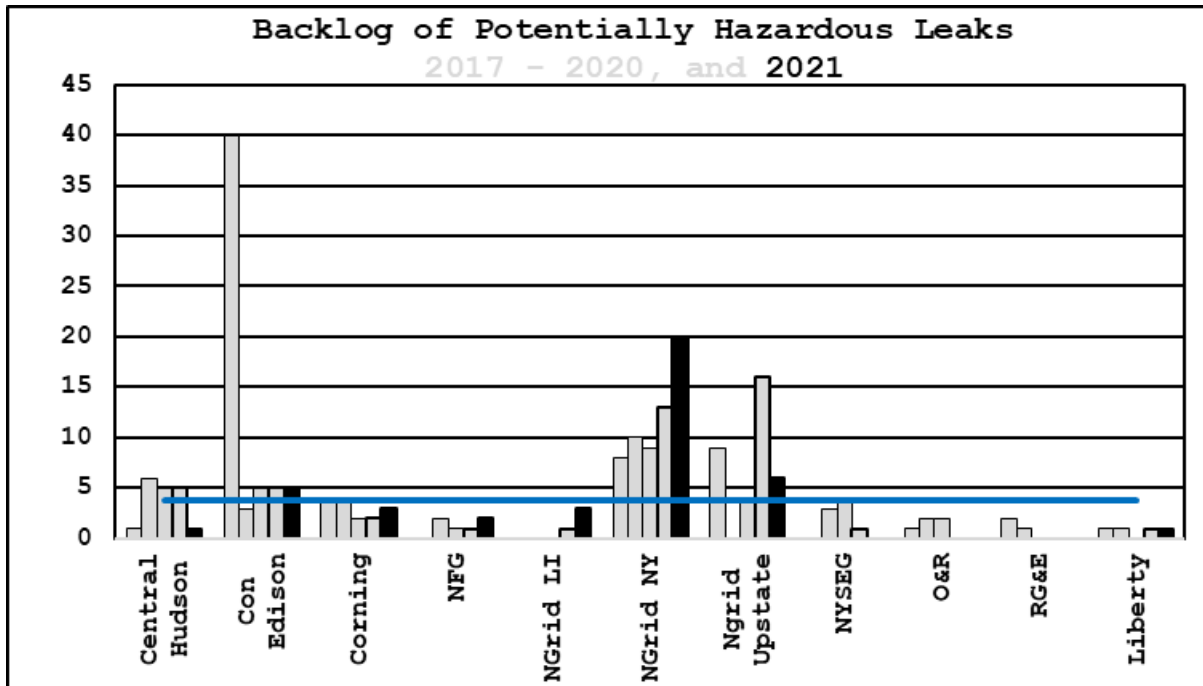


Figure 10 - Backlog of Potentially Hazardous Leaks

As seen in Figure 10, LDCs' continued efforts have led to negligible backlogs for potentially hazardous leaks entering the frost season, the last two weeks in December.

Total leak backlogs include all potentially hazardous leaks, as identified above, and Type 3 leaks. Type 3 leaks are defined as not potentially hazardous at the time of inspection

¹⁰ The 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.

and are reasonably expected to remain that way. However, Type 3 leaks must be reevaluated during the next regularly scheduled required leakage survey or annually, whichever is less, though they have no mandatory repair timeframe.

Without a mandatory repair timeframe, LDCs could allow the total leak backlog to grow while still meeting the minimum pipeline safety regulations. In recent years, and like that of potentially hazardous leak backlogs, negative revenue adjustments have been incorporated into most of the respective LDC's rate plans for total leak backlogs. In addition, some LDCs' rate plans provide for positive revenue adjustments, as incentives for LDCs to continue reducing Type 3 leaks, that would result a reduction of methane emission, which is in line with State's goal to reduce carbon footprint and meet the requirements of Climate Leadership and Community Protection Act.

Figure 11 displays the backlog of total leaks (Type 1, 2A, 2, and 3) from 2017 through 2021. The numerical leak data is contained in Appendix K.

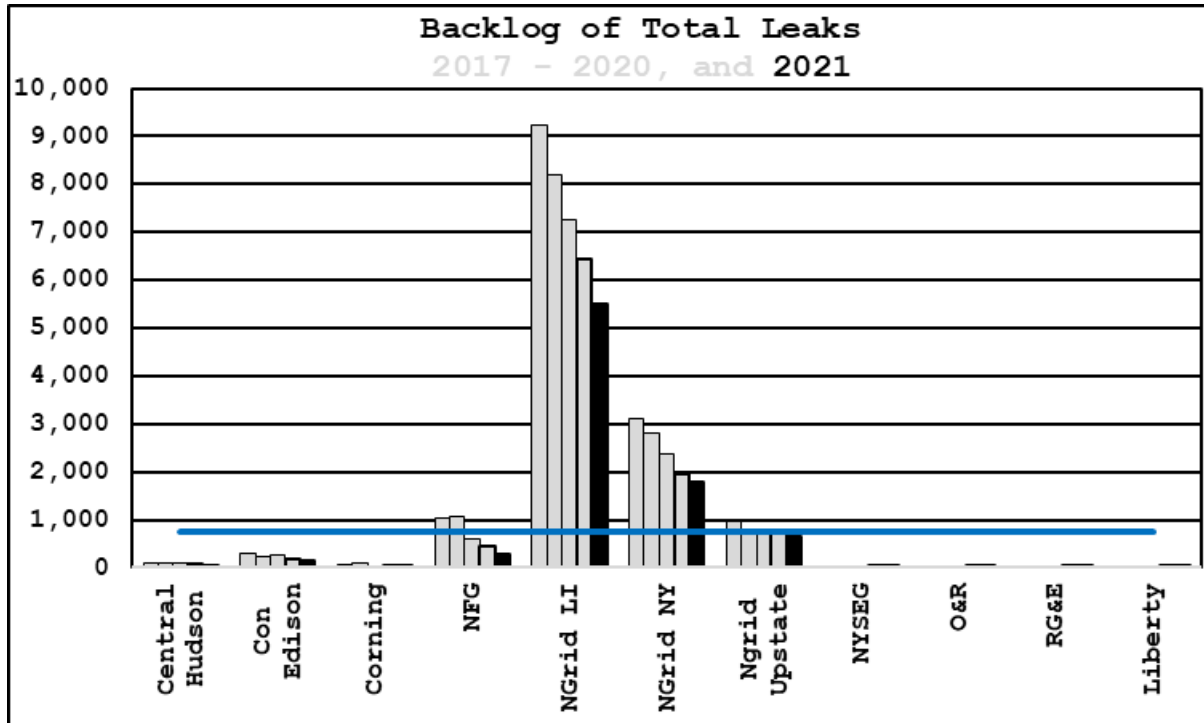


Figure 11 - Backlog of Total Leaks

As seen in Figure 11, NGrid LI and NY continue to be outliers in this category but nonetheless have improved from the previous calendar year. NGrid LI and NY improved 14.6% and 8.5%, respectively, when comparing 2021 to 2020. This resulted in a total of 1,106 fewer leaks in 2021. Their total leak backlogs, however, are considerably higher than that of the next highest LDC, NGrid Upstate, and accounts for 74% of the overall total leak backlog. Taken in total, National Grid LI, NY, and NGrid Upstate account for 80.2% of the LDCs' total leak backlog. The past five years data shows a downward trendline for the overall leak backlog. However, given the fact that over 80% of the total leak backlog is reported by NGrid companies, it is expected that going forward NGrid companies will make every effort to reduce the leak backlog numbers, by ramping up their leak repair and accelerating the elimination of leak prone pipe from their systems.

Statistically, performance improvements within this measure include the following: O&R (33.31%) going from a total leak backlog of three in 2020 to two in 2021; RG&E (40.0%) going from ten to six; Con Edison (20.8%) going from 173 to 137; NFG (34.4%) going from 453 to 297; NGrid NY (8.5%) going from 1,944 to 1,779; NGrid LI (14.6%) going from 6,435 to 5,494; NGrid Upstate (8.5%) going from 714 to 648; Central Hudson (42.0%) going from 80 to 47; NYSEG (76.9%) going from 13 to three; and Corning (11.1%) going from 45 to 40. As the accelerated removal of leak prone pipe continues over the next several years, Staff expects that the backlog of total leaks will continue to improve.

Figures 12 and 13 display the number of leaks discovered per leak type, and per system mileage, respectively. Figures 14 and 15 display the number of leaks repaired per leak type, and per system mileage, respectively. Figures 16 and 17 display the number of leaks repaired per material type, and per system mileage, respectively.

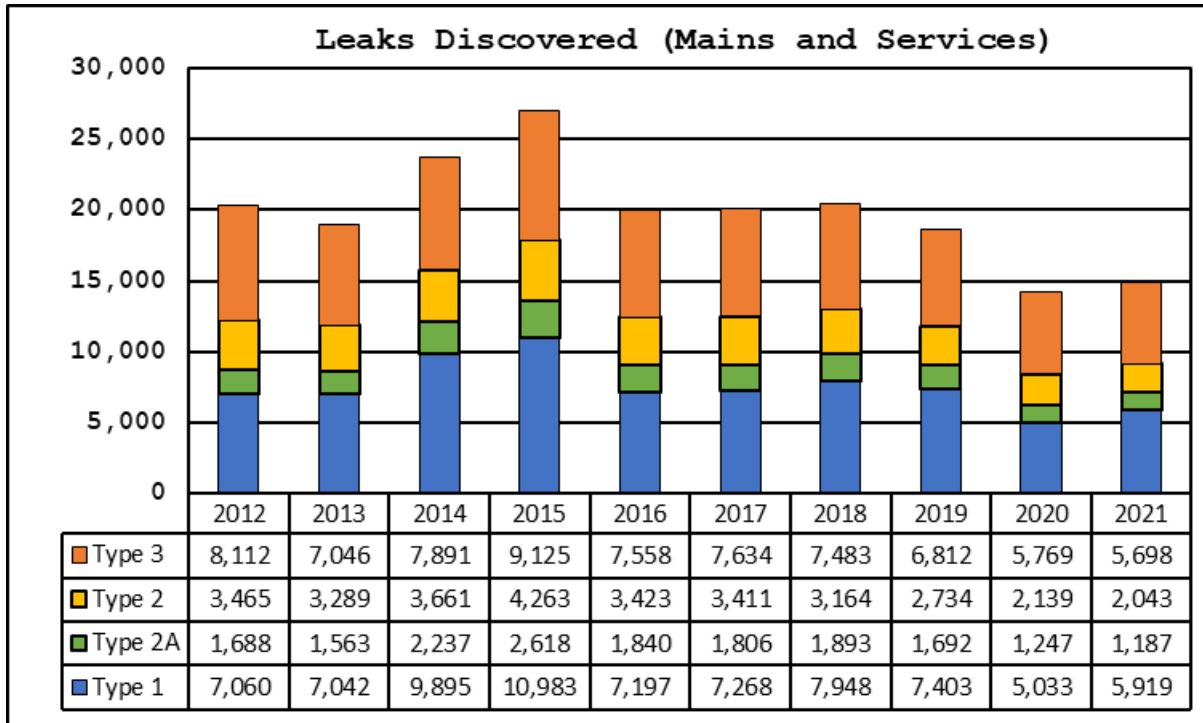


Figure 12 - Leaks Discovered by Type

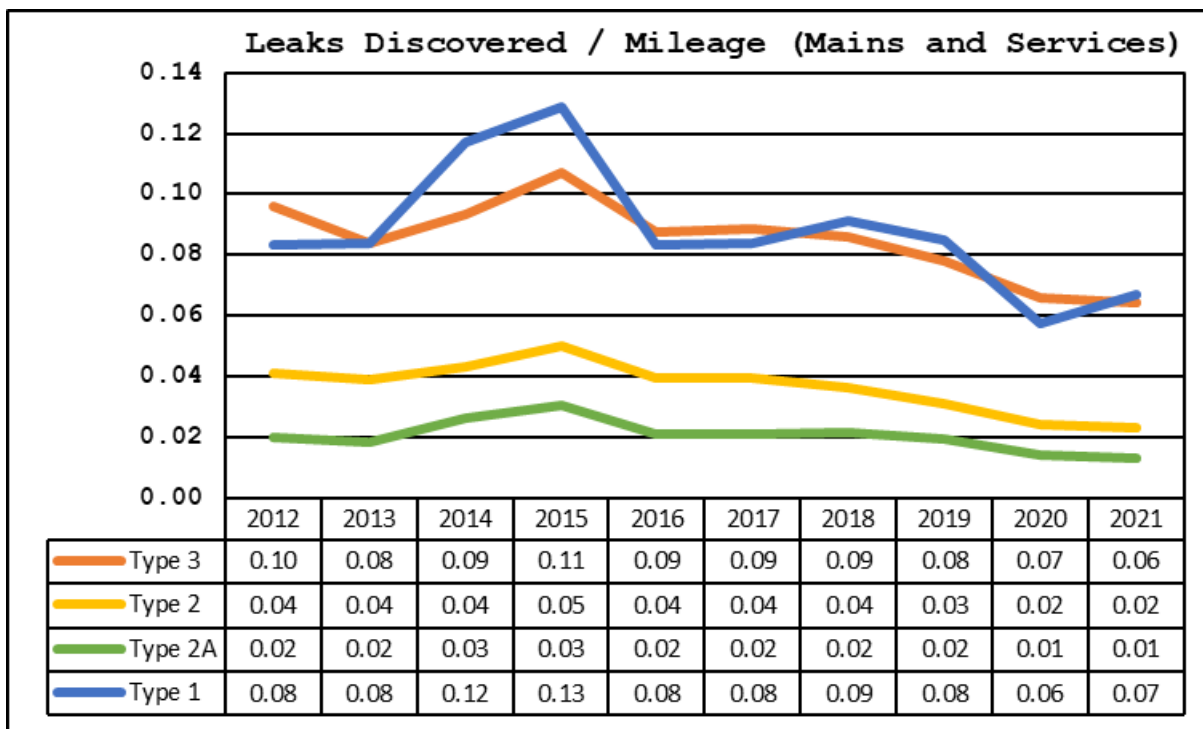


Figure 13 - Leaks Discovered by Type / Mileage

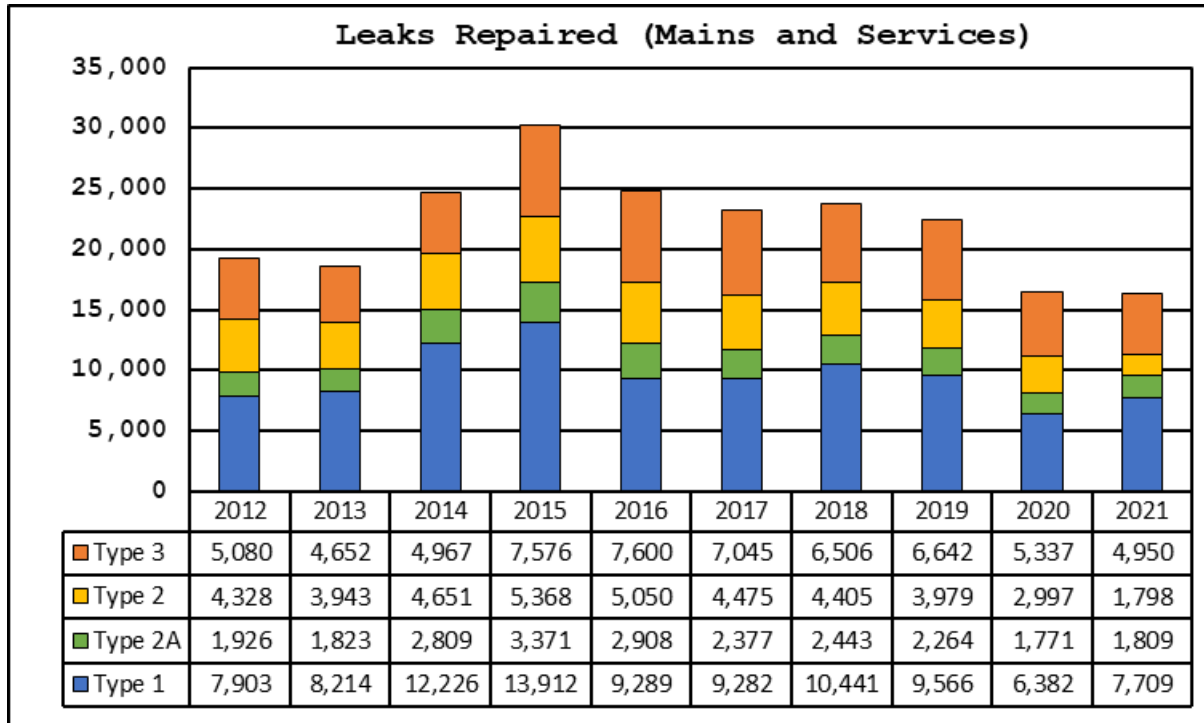


Figure 14 - Leaks Repaired by Type

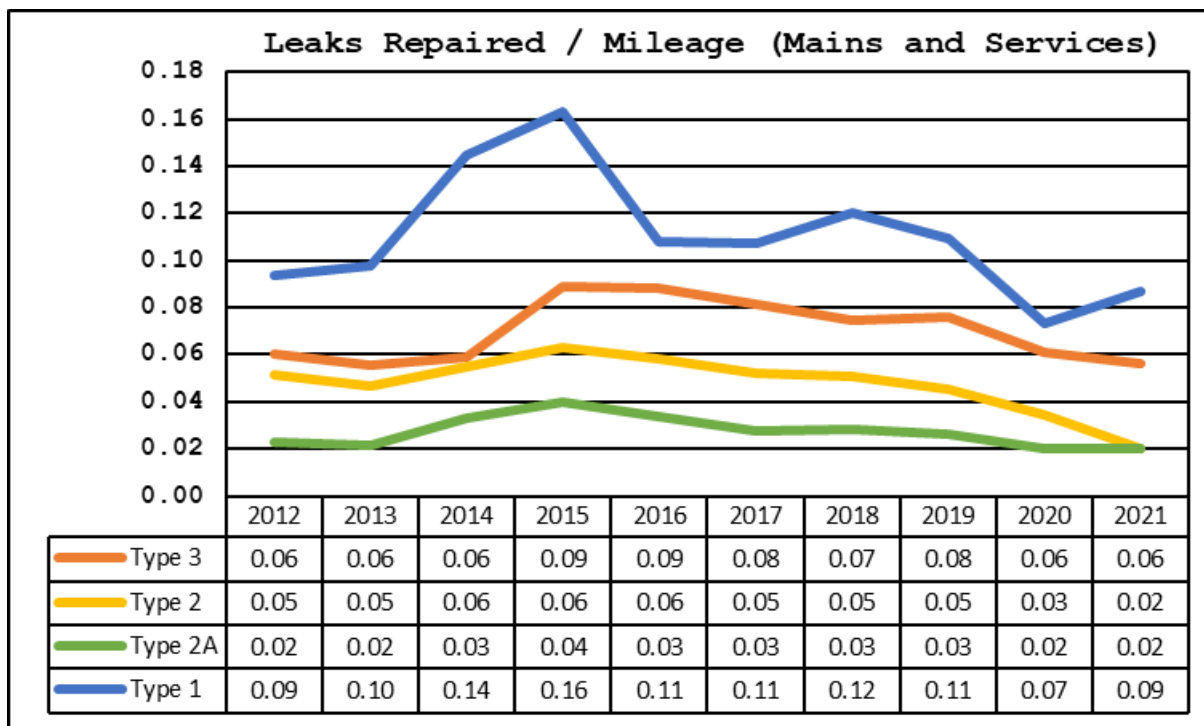


Figure 15 - Leaks Repaired by Type / Mileage

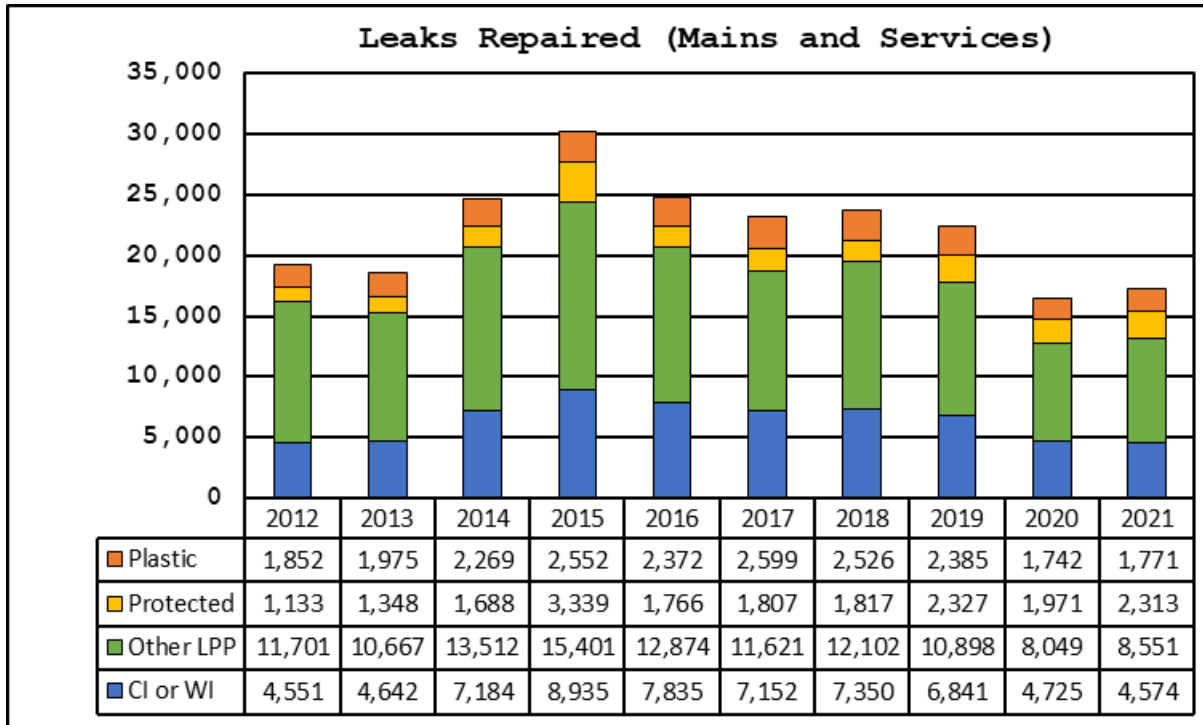


Figure 16 - Leaks Repaired by Material

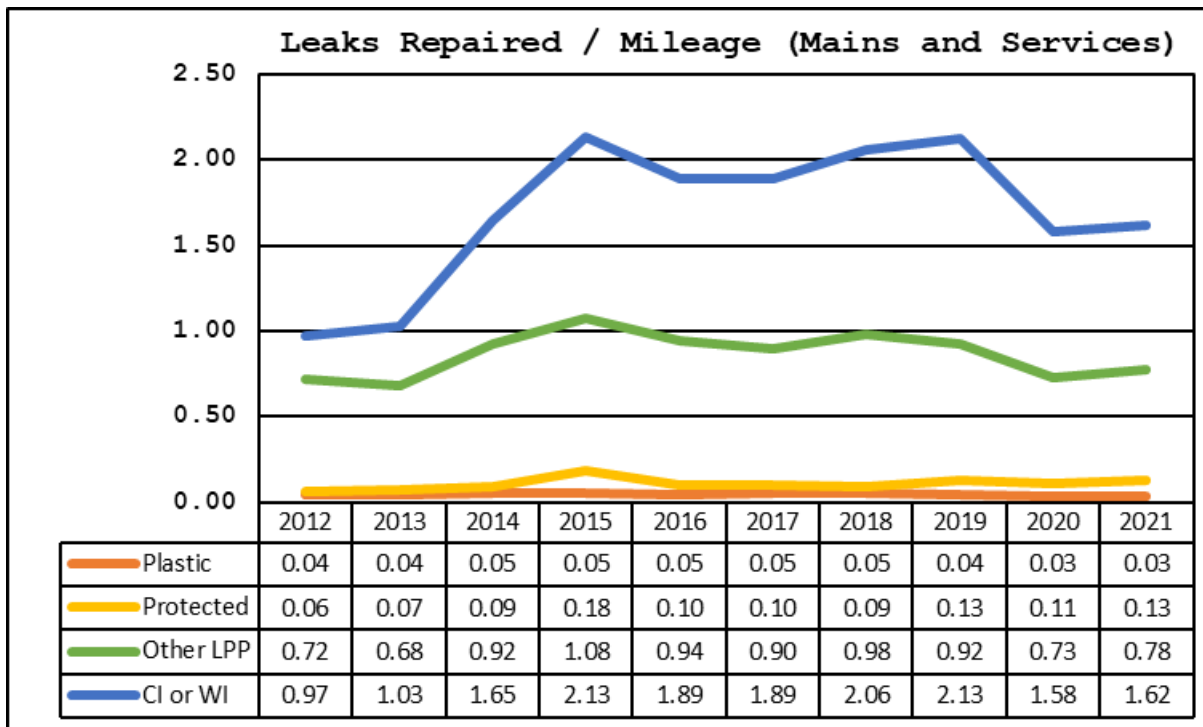


Figure 17 - Leaks Repaired by Material / Mileage

As seen in Figures 12 through 15, in 2021 there was a fluctuation in the number of leaks discovered and repairs by leak type and material. For instance, the number of Type 1 leaks discovered and repaired in 2021 was higher compared to 2020; the number of Type 2A and Type 3 leaks discovered and repaired was maintained at approximately the same level as in 2020, and the number of Type 2 leaks discovered and repaired was lower in 2021 compared to 2020. The fluctuation in the number of leaks discovered and repaired by leak type and material could be attributed to the removal of leak prone infrastructure and the impact of COVID 19 that might have affected the LDCs' ability to fully perform the required work during the calendar year 2021.

Figure 16 shows the number of leaks repaired per material type (plastic, protected, other leak prone pipe not including cast and wrought-iron, and cast and wrought-iron). It is worth noting that in 2021 that there was a higher number of leaks repaired on other leak prone pipe (8,551) than on cast and wrought iron (4,574). However, when normalizing these figures by the respective materials system mileage, as seen in Figure 17, a opposite relationship is shown. While more leaks are repaired on other leak prone pipe, the rate for leaks repaired on cast and wrought iron (1.62) is more than double that of other leak prone pipe (0.73). This data suggests that cast and wrought iron pipelines have a greater potential for leakage than other leak prone pipe, with other leak prone pipe being five times more likely to leak than non-leak prone pipe.

The LDCs account for this within their leak prone pipe removal programs by assigning weighted factors to each material type. When the risk assessment models are finalized, these prioritized listings of leak prone pipe segments are used by

LDCs to focus their replacement efforts. This provides a higher level of public safety.

Non-Compliances Identified through Audits and
Investigations Process

For the final measure, non-compliances identified by Staff through the audit process, LDCs are being evaluated on their compliance with the Commission's minimum pipeline safety regulations. This measure looks at non-compliance issues as identified by Staff during audits and investigations of the LDCs. Each year, Staff conducts statistically based audits and investigations of the LDCs to determine their compliance with the Commission's regulations. Each non-compliance identified represents an area in which an LDC failed to meet these minimum requirements as prescribed.

Staff conducts compliance audits and investigations on a calendar year basis. The statistically based audits typically include a review of record and field activities. For the record audits, Staff reviews the previous calendar year's documentation and reports on any instances of non-compliance with the pipeline safety regulations. Throughout the remainder of the year, Staff observes LDC crews as they perform field audits of the actual work being performed and compares those tasks with the regulations and the LDCs' applicable procedures. Like the record audit, any instances of non-compliance are documented and then reported.

For investigations, Staff is made aware, either through mandatory reporting or notifications, that an accident or incident has occurred. Once notified, Staff evaluates the details of the event, performs on-site investigations and/or interviews, identifies the root cause or causes of the accident

or incident, obtains any pertinent information or photographs, and documents any instances of non-compliance.

For this measure, the year identified includes both the statistically based audits and investigations for that calendar year.¹¹ Since the 2022 audits of 2021 records are in progress, Figure 18 below displays the total number of non-compliances from 2016 through 2020. The total number of non-compliances are then normalized by the number of operating headquarters (OHQs) within an LDC. For each OHQ, Staff conducts a separate audit of activities as prescribed by Staff’s five-year audit plan. The associated data per LDC and the number of OHQs are located in Appendices M and N.

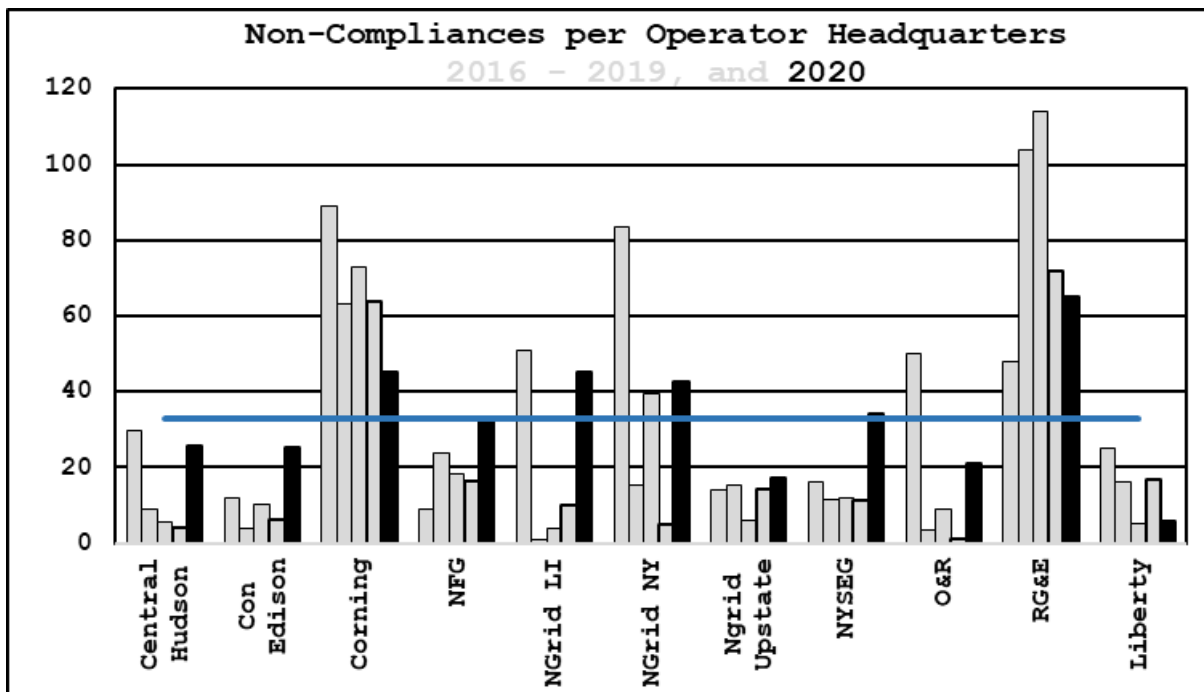


Figure 18 - Non-Compliances Identified through Audits

¹¹ This typically includes records generated, field activities, or accidents and incidents which were performed or occurred during the specific calendar year.

As seen in Figure 18, the data varies greatly from year to year. Therefore, the year-to-year graph does not represent a direct comparison of year-to-year compliance. This is due, in part, to Staff's five-year audit plan, which reviews sections of the pipeline safety regulations 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", which are audited annually, or as "other risk", which are audited on a two, three, four, or five-year frequency, but does not exceed five years.

Staff's focus is on compliance with the minimum pipeline safety regulations, but also includes areas in which LDCs, based upon historic experiences and identified risks, have chosen to exceed these minimum standards. In 2020, non-compliances were identified in all 11 of the major LDCs' operating service territories. Although in 2020 some LDCs show an increase in the number of violations, the past seven years data still shows an overall downward trend.

Conclusion

Natural gas is a safe and reliable energy commodity when handled and transported properly. Pipeline safety performance measures are an important management tool that provide the ability to evaluate trends in key areas such as damage prevention, emergency response, leak management, and non-compliances with the Commission's regulations. The LDCs must continue to focus on these areas to further reduce risks in distributing natural gas to consumers.

Over the past ten years, LDCs have worked to improve performance in the key areas of safety as identified within this

report. Over this time, damage prevention performance improved 28.3% going from 2.26 in 2020 to 1.62 in 2021, in total damages per 1,000 one-call notifications; response to leak, odor, and emergency reports within 30-minutes improved from 82.7% to 87.8%; and the year-end backlogs of potentially hazardous leaks and in total have decreased 73.9% and 67.2%, respectively, going from 157 and 25,806 in 2012, to 41 and 8,454 in 2021, respectively. As LDCs continue their outreach and education efforts, adopt best practices in responding to leak, odor, and emergency reports, work to remove leak prone pipe, and QA/QC programs continue to mature Staff's expectation is that further improvements will occur.

Staff will continue to evaluate LDCs' performance via the measures contained within this report and encourage LDCs to evaluate their past and current practices. LDCs with clear opportunities for improvement when compared to their peers should reach out to the LDCs that showed superior performance levels to determine the incremental and, if necessary, entirely new approaches needed to achieve improvement.

Those LDCs that made significant improvements are further encouraged to respond to this report and share the best practices that have enabled them to make these improvements. Staff will continue to meet with LDCs on a regular basis and will continue to monitor LDCs performance. Performance trends will be discussed with LDCs at these meetings and will be analyzed in future performance measure reports.

As indicated earlier, monitoring LDCs' performances, and making significant improvements to these metrics is important in that of increased safety. In addition to increased safety, there are also a series of benefits associated with increased performance. As indicated earlier eliminating leak

prone pipe should result a reduction in the number of leaks, reduction in the costs associated with responding to leak calls, repairing and monitoring leaks, and a reduction of methane releases, and methane is known to be a greenhouse gas, thus, helping the environment and the State meet its goals pursuant to Climate Leadership and Community Protection Act.

Appendix A

Historical Case Numbers¹²

Year Analyzed	Case Number
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
2015	16-G-0254
2016	17-G-0245
2017	18-G-0260
2018	19-G-0298
2019	20-G-0195
2020	21-G-0165

¹² 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.

Appendix B

Number of One-Call Tickets

LDCs	2017	2018	2019	2020	2021
Central Hudson	25,302	29,795	31,422	30,414	30,187
Con Edison	100,397	111,669	126,182	98,678	116,897
Corning	3,952	5,010	4,772	5,676	5,398
NFG	98,714	101,503	111,451	115,115	129,056
NGrid LI	185,313	126,872	137,703	151,040	136,705
NGrid NY	283,474	128,359	139,826	90,473	100,391
NGrid Upstate	102,770	101,798	107,008	106,054	113,528
NYSEG	61,600	62,853	66,504	60,685	59,894
O&R	31,820	33,777	34,209	34,004	36,970
RG&E	80,447	71,598	78,227	69,105	74,818
Liberty	4,260	4,137	4,545	4,254	4,808

Number of Damages due to Mismarks

LDCs	2017	2018	2019	2020	2021
Central Hudson	14	13	10	19	13
Con Edison	69	93	57	43	48
Corning	1	2	2	2	3
NFG	27	23	29	29	24
NGrid LI	79	100	95	64	68
NGrid NY	67	96	82	61	50
NGrid Upstate	36	38	68	39	38
NYSEG	23	13	21	18	19
O&R	9	7	10	7	21
RG&E	31	19	26	36	23
Liberty	1	1	0	1	1

Damages due to Mismarks per 1,000 Tickets

LDCs	2017	2018	2019	2020	2021
Central Hudson	0.55	0.44	0.32	0.62	0.43
Con Edison	0.69	0.83	0.45	0.44	0.41
Corning	0.25	0.40	0.42	0.35	0.56
NFG	0.27	0.23	0.26	0.25	0.19
NGrid LI	0.43	0.79	0.69	0.42	0.50
NGrid NY	0.24	0.75	0.59	0.67	0.50
NGrid Upstate	0.35	0.37	0.64	0.37	0.33
NYSEG	0.37	0.21	0.32	0.30	0.32
O&R	0.28	0.21	0.29	0.21	0.57
RG&E	0.39	0.27	0.33	0.52	0.31
Liberty	0.23	0.24	0.00	0.24	0.21

Appendix B (Continued)

Number of Damages due to No-calls

LDCs	2017	2018	2019	2020	2021
Central Hudson	11	6	7	5	8
Con Edison	60	37	36	28	31
Corning	4	4	2	5	3
NFG	36	38	44	32	37
NGrid LI	124	111	102	92	97
NGrid NY	47	41	50	31	21
NGrid Upstate	32	36	34	41	36
NYSEG	17	9	21	18	19
O&R	16	15	23	18	30
RG&E	17	18	18	17	17
Liberty	1	0	3	1	3

Damages due to No-calls per 1,000 Tickets

LDCs	2017	2018	2019	2020	2021
Central Hudson	0.43	0.20	0.22	0.16	0.27
Con Edison	0.60	0.33	0.29	0.28	0.27
Corning	1.01	0.80	0.42	0.88	0.56
NFG	0.36	0.37	0.39	0.28	0.29
NGrid LI	0.67	0.87	0.74	0.61	0.71
NGrid NY	0.17	0.32	0.36	0.34	0.21
NGrid Upstate	0.31	0.35	0.32	0.39	0.32
NYSEG	0.28	0.14	0.32	0.30	0.32
O&R	0.50	0.44	0.67	0.53	0.81
RG&E	0.21	0.25	0.23	0.25	0.23
Liberty	0.23	0.00	0.66	0.24	0.62

Number of Damages due to Excavator Error

LDCs	2017	2018	2019	2020	2021
Central Hudson	21	16	19	11	12
Con Edison	70	80	60	54	56
Corning	5	9	6	9	7
NFG	115	112	137	110	108
NGrid LI	112	124	111	114	122
NGrid NY	165	188	164	169	99
NGrid Upstate	149	100	122	144	106
NYSEG	50	64	54	60	56
O&R	22	30	19	31	25
RG&E	40	53	43	33	40
Liberty	10	11	7	8	7

Appendix B (Continued)

Damages due to Excavator Error per 1,000 Tickets

LDCs	2017	2018	2019	2020	2021
Central Hudson	0.83	0.54	0.60	0.36	0.40
Con Edison	0.70	0.72	0.48	0.55	0.48
Corning	1.27	1.80	1.26	1.59	1.30
NFG	1.16	1.10	1.23	0.96	0.84
NGrid LI	0.60	0.98	0.81	0.75	0.89
NGrid NY	0.58	1.46	1.17	1.87	0.99
NGrid Upstate	1.45	0.98	1.14	1.36	0.93
NYSEG	0.81	1.02	0.81	0.99	0.93
O&R	0.69	0.89	0.56	0.91	0.68
RG&E	0.50	0.74	0.55	0.48	0.53
Liberty	2.35	2.66	1.54	1.88	1.46

Number of Damages due to Co. & Co. Contractor Error

LDCs	2017	2018	2019	2020	2021
Central Hudson	8	9	9	9	9
Con Edison	26	28	15	15	11
Corning	0	1	0	0	0
NFG	0	0	7	3	3
NGrid LI	11	19	12	8	13
NGrid NY	7	4	6	6	4
NGrid Upstate	4	13	6	8	5
NYSEG	5	3	2	6	7
O&R	11	8	4	5	10
RG&E	9	3	3	4	2
Liberty	0	0	0	0	0

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

LDCs	2017	2018	2019	2020	2021
Central Hudson	0.32	0.30	0.29	0.30	0.30
Con Edison	0.26	0.25	0.12	0.15	0.09
Corning	0.00	0.20	0.00	0.00	0.00
NFG	0.00	0.00	0.06	0.03	0.02
NGrid LI	0.06	0.15	0.09	0.05	0.10
NGrid NY	0.02	0.03	0.04	0.07	0.04
NGrid Upstate	0.04	0.13	0.06	0.08	0.04
NYSEG	0.08	0.05	0.03	0.10	0.12
O&R	0.35	0.24	0.12	0.15	0.27
RG&E	0.11	0.04	0.04	0.06	0.03
Liberty	0.00	0.00	0.00	0.00	0.00

Appendix B (Continued)

Number of Total Damages

LDCs	2017	2018	2019	2020	2021
Central Hudson	54	44	45	44	42
Con Edison	225	238	168	140	146
Corning	10	16	10	16	13
NFG	178	173	217	174	172
NGrid LI	326	354	320	278	300
NGrid NY	286	329	302	267	174
NGrid Upstate	221	187	230	232	185
NYSEG	95	89	98	102	101
O&R	58	60	56	61	86
RG&E	97	93	90	90	82
Liberty	12	12	10	10	11

Total Damages per 1,000 Tickets

LDCs	2017	2018	2019	2020	2021
Central Hudson	2.13	1.48	1.43	1.45	1.39
Con Edison	2.24	2.13	1.33	1.42	1.25
Corning	2.53	3.19	2.10	2.82	2.41
NFG	1.80	1.70	1.95	1.51	1.33
NGrid LI	1.76	2.79	2.32	1.84	2.19
NGrid NY	1.01	2.56	2.16	2.95	1.73
NGrid Upstate	2.15	1.84	2.15	2.19	1.63
NYSEG	1.54	1.42	1.47	1.68	1.69
O&R	1.82	1.78	1.64	1.79	2.33
RG&E	1.21	1.30	1.15	1.30	1.10
Liberty	2.82	2.90	2.20	2.35	2.29

Appendix C¹³

Central Hudson	2017	2018	2019	2020	2021	LDCs
Number of Tickets	25,302	29,795	31,422	30,414	30,187	808,652
Mismarks	0.55	0.44	0.32	0.62	0.43	0.38
No-Calls	0.43	0.20	0.22	0.16	0.27	0.37
Excavator Error	0.83	0.54	0.60	0.36	0.40	0.79
Co. & Co. Contractor Error	0.32	0.30	0.29	0.30	0.30	0.08
Total	2.13	1.48	1.43	1.45	1.39	1.62

Con Edison	2017	2018	2019	2020	2021	LDCs
Number of Tickets	100,397	111,669	126,182	98,678	116,897	808,652
Mismarks	0.69	0.83	0.45	0.44	0.41	0.38
No-Calls	0.60	0.33	0.29	0.28	0.27	0.37
Excavator Error	0.70	0.72	0.48	0.55	0.48	0.79
Co. & Co. Contractor Error	0.26	0.25	0.12	0.15	0.09	0.08
Total	2.24	2.13	1.33	1.42	1.25	1.62

Corning	2017	2018	2019	2020	2021	LDCs
Number of Tickets	3,952	5,010	4,772	5,676	5,398	808,652
Mismarks	0.25	0.40	0.42	0.35	0.56	0.38
No-Calls	1.01	0.80	0.42	0.88	0.56	0.37
Excavator Error	1.27	1.80	1.26	1.59	1.30	0.79
Co. & Co. Contractor Error	0.00	0.20	0.00	0.00	0.00	0.08
Total	2.53	3.19	2.10	2.82	2.41	1.62

¹³ The "Total" performance level may not equal the sum of the four-metrics due to rounding.

Appendix C¹⁵ (Continued)

NFG	2017	2018	2019	2020	2021	LDCs
Number of Tickets	98,714	101,503	111,451	115,115	129,056	808,652
Mismarks	0.27	0.23	0.26	0.25	0.19	0.38
No-Calls	0.36	0.37	0.39	0.28	0.29	0.37
Excavator Error	1.16	1.10	1.23	0.96	0.84	0.79
Co. & Co. Contractor Error	0.00	0.00	0.06	0.03	0.02	0.08
Total	1.80	1.70	1.95	1.51	1.33	1.62

NGrid LI	2017	2018	2019	2020	2021	LDCs
Number of Tickets	185,313	126,872	137,703	151,040	136,705	808,652
Mismarks	0.43	0.79	0.69	0.42	0.50	0.38
No-Calls	0.67	0.87	0.74	0.61	0.71	0.37
Excavator Error	0.60	0.98	0.81	0.75	0.89	0.79
Co. & Co. Contractor Error	0.06	0.15	0.09	0.05	0.10	0.08
Total	1.76	2.79	2.32	1.84	2.19	1.62

NGrid NY	2017	2018	2019	2020	2021	LDCs
Number of Tickets	283,474	128,359	139,826	90,473	100,391	808,652
Mismarks	0.24	0.75	0.59	0.67	0.50	0.38
No-Calls	0.17	0.32	0.36	0.34	0.21	0.37
Excavator Error	0.58	1.46	1.17	1.87	0.99	0.79
Co. & Co. Contractor Error	0.02	0.03	0.04	0.07	0.04	0.08
Total	1.01	2.56	2.16	2.95	1.73	1.62

Appendix C¹⁵ (Continued)

NGrid Upstate	2017	2018	2019	2020	2021	LDCs
Number of Tickets	102,770	101,798	107,008	106,054	113,528	808,652
Mismarks	0.35	0.37	0.64	0.37	0.33	0.38
No-Calls	0.31	0.35	0.32	0.39	0.32	0.37
Excavator Error	1.45	0.98	1.14	1.36	0.93	0.79
Co. & Co. Contractor Error	0.04	0.13	0.06	0.08	0.04	0.08
Total	2.15	1.84	2.15	2.19	1.63	1.62

NYSEG	2017	2018	2019	2020	2021	LDCs
Number of Tickets	61,600	62,853	66,504	60,685	59,894	808,652
Mismarks	0.37	0.21	0.32	0.30	0.32	0.38
No-Calls	0.28	0.14	0.32	0.30	0.32	0.37
Excavator Error	0.81	1.02	0.81	0.99	0.93	0.79
Co. & Co. Contractor Error	0.08	0.05	0.03	0.10	0.12	0.08
Total	1.54	1.42	1.47	1.68	1.69	1.62

O&R	2017	2018	2019	2020	2021	LDCs
Number of Tickets	31,820	33,777	34,209	34,004	36,970	808,652
Mismarks	0.28	0.21	0.29	0.21	0.57	0.38
No-Calls	0.50	0.44	0.67	0.53	0.81	0.37
Excavator Error	0.69	0.89	0.56	0.91	0.68	0.79
Co. & Co. Contractor Error	0.35	0.24	0.12	0.15	0.27	0.08
Total	1.82	1.78	1.64	1.79	2.33	1.62

Appendix C¹⁵ (Continued)

RG&E	2017	2018	2019	2020	2021	LDCs
Number of Tickets	80,447	71,598	78,227	69,105	74,818	808,652
Mismarks	0.39	0.27	0.33	0.52	0.31	0.38
No-Calls	0.21	0.25	0.23	0.25	0.23	0.37
Excavator Error	0.50	0.74	0.55	0.48	0.53	0.79
Co. & Co. Contractor Error	0.11	0.04	0.04	0.06	0.03	0.08
Total	1.21	1.30	1.15	1.30	1.10	1.62

Liberty	2017	2018	2019	2020	2021	LDCs
Number of Tickets	4,260	4,137	4,545	4,254	4,808	808,652
Mismarks	0.23	0.24	0.00	0.24	0.21	0.38
No-Calls	0.23	0.00	0.66	0.24	0.62	0.37
Excavator Error	2.35	2.66	1.54	1.88	1.46	0.79
Co. & Co. Contractor Error	0.00	0.00	0.00	0.00	0.00	0.08
Total	2.82	2.90	2.20	2.35	2.29	1.62

Appendix D

Emergency Response Times for 45 Minutes (%)

LDCs	2017	2018	2019	2020	2021
Central Hudson	99.0	98.8	98.9	99.4	99.1
Con Edison	99.4	99.5	99.7	99.9	99.2
Corning	98.1	95.6	96.9	95.0	97.0
NFG	98.7	98.7	98.9	99.1	99.3
NGrid LI	95.6	95.3	96.0	97.7	96.9
NGrid NY	93.8	94.8	95.3	96.2	95.6
NGrid Upstate	95.1	94.3	94.3	93.7	95.9
NYSEG	93.4	92.9	89.1	93.0	96.3
O&R	99.1	99.1	99.3	99.3	99.0
RG&E	90.9	95.5	82.5	93.8	98.2
Liberty	93.7	93.2	91.7	92.0	93.5

Appendix E

Emergency Response Times for 60 Minutes (%)

LDCs	2017	2018	2019	2020	2021
Central Hudson	99.9	99.8	99.9	99.9	99.9
Con Edison	99.9	99.9	99.9	99.9	99.4
Corning	99.2	98.6	98.7	98.6	98.5
NFG	99.7	99.6	99.7	99.8	99.9
NGrid LI	99.5	99.6	99.5	99.7	99.5
NGrid NY	97.7	98.5	98.8	99.1	98.9
NGrid Upstate	98.5	98.2	98.1	97.4	98.4
NYSEG	98.4	97.8	94.6	97.9	99.1
O&R	99.9	99.9	99.9	99.9	99.9
RG&E	95.7	97.7	89.2	98.2	99.7
Liberty	98.5	98.2	95.7	97.3	98.5

Appendix F

Leak Repairs on Mains by Material

LDCs	Unprot. Bare	Unprot. Coated	Prot. Bare	Prot. Coated	Plastic	Cast / Wrought Iron	Copper	Other
Central Hudson	51	0	0	43	18	82	0	0
Con Edison	3,002	183	0	263	100	2,496	0	0
Corning	21	3	3	8	3	0	0	0
NFG	1,137	0	0	91	52	103	0	6
NGrid LI	295	44	0	1	58	117	0	0
NGrid NY	148	0	0	42	23	1,581	0	0
NGrid Upstate	3	6	0	41	13	149	0	0
NYSEG	19	0	0	11	14	2	0	8
O&R	75	0	0	6	25	0	0	0
RG&E	1	0	0	84	8	0	0	67
Liberty	0	0	0	1	0	0	0	0

Appendix G

Leak Repairs on Services by Material

LDCs	Unprot. Bare	Unprot. Coated	Prot. Bare	Prot. Coated	Plastic	Cast / Wrought Iron	Copper	Other
Central Hudson	37	0	0	63	51	39	0	0
Con Edison	1,809	146	0	1,173	344	0	121	0
Corning	19	8	0	13	20	0	0	0
NFG	210	0	0	43	332	0	0	3
NGrid LI	430	48	26	0	153	0	27	0
NGrid NY	185	0	0	128	220	0	159	0
NGrid Upstate	36	70	0	84	122	5	13	0
NYSEG	13	0	0	14	40	0	0	2
O&R	132	0	0	36	130	0	0	0
RG&E	0	0	0	138	45	0	7	7
Liberty	0	0	3	1	0	0	0	0

Appendix H

Backlog of Potentially Hazardous Leaks

LDCs	2017	2018	2019	2020	2021
Central Hudson	1	6	5	5	1
Con Edison	40	3	5	5	5
Corning	4	4	2	2	3
NFG	0	2	1	1	2
NGrid LI	0	0	0	1	3
NGrid NY	8	10	9	13	20
NGrid Upstate	9	0	4	16	6
NYSEG	0	3	4	1	0
O&R	1	2	2	0	0
RG&E	2	1	0	0	0
Liberty	1	1	0	1	1

Appendix I

Repaired Potentially Hazardous Leaks

LDCs	2017	2018	2019	2020	2021
Central Hudson	324	326	224	170	198
Con Edison	7,149	7,713	7,406	5,814	6,869
Corning	60	98	133	54	66
NFG	1,020	1,069	843	707	839
NGrid LI	1,958	2,226	2,085	1,225	1,048
NGrid NY	3,955	4,356	4,095	2,168	2,399
NGrid Upstate	858	775	586	590	446
NYSEG	196	171	87	102	77
O&R	307	291	239	187	177
RG&E	305	260	110	132	136
Liberty	2	4	0	1	4

Appendix J

Discovered Potentially Hazardous Leaks

LDCs	2017	2018	2019	2020	2021
Central Hudson	283	304	208	158	176
Con Edison	4,146	4,259	3,814	2,903	3,738
Corning	69	95	118	49	67
NFG	1,023	1,071	826	693	831
NGrid LI	1,801	1,997	1,947	1,239	1,050
NGrid NY	3,270	3,340	3,400	2,129	2,317
NGrid Upstate	1,068	1,145	836	739	528
NYSEG	198	199	145	149	94
O&R	298	297	250	180	178
RG&E	327	294	285	178	166
Liberty	2	4	0	2	4

Appendix K

Backlog of Total Leaks

LDCs	2017	2018	2019	2020	2021
Central Hudson	111	91	87	80	47
Con Edison	312	250	262	173	137
Corning	73	115	48	45	40
NFG	1,028	1,073	608	453	297
NGrid LI	9,232	8,199	7,256	6,435	5,494
NGrid NY	3,118	2,803	2,382	1,944	1,779
NGrid Upstate	979	815	803	714	648
NYSEG	8	10	14	13	3
O&R	6	10	7	3	2
RG&E	11	14	23	10	6
Liberty	1	1	0	1	1

Appendix L

System Totals (Mains and Services)

Year	Steel (in Miles)			
	Unprotected		Protected	
	Bare	Coated	Bare	Coated
2012	10,729	3,475	582	18,040
2013	10,230	3,420	614	17,963
2014	9,362	3,385	541	18,036
2015	9,313	3,141	533	18,049
2016	8,795	3,196	543	17,699
2017	7,878	3,518	338	17,832
2018	7,570	3,300	339	18,794
2019	7,073	3,331	332	17,692
2020	6,659	3,154	324	17,792
2021	6,501	3,134	320	17,713

Appendix L (Continued)

System Totals (Mains and Services)

Year	Plastic (in Miles)	Cast and Wrought Iron (in Miles)	Copper (in Miles)	Other (in Miles)
2012	44,902	4,700	1,664	342
2013	45,283	4,521	1,651	305
2014	46,823	4,356	1,729	151
2015	48,157	4,194	1,712	134
2016	50,200	4,150	1,539	109
2017	51,499	3,783	1,414	100
2018	51,970	3,570	1,355	99
2019	54,304	3,217	1,349	93
2020	55,207	2,983	1,185	92
2021	56,689	2,826	1,276	88

Appendix L (Continued)

System Totals (Mains and Services)

Year	Average Service Length (in Feet)	Number of Services	System Totals (in Miles)
2012	64.36	3,227,688	84,433
2013	64.40	3,180,639	83,987
2014	64.97	3,173,759	84,383
2015	66.15	3,143,133	85,232
2016	65.70	3,203,732	86,232
2017	65.80	3,200,736	86,361
2018	65.77	3,233,062	86,998
2019	65.79	3,248,187	87,391
2020	66.23	3,261,548	87,397
2021	66.83	3,294,803	88,546

Appendix M

High Risk Non-Compliances Identified through Audit Process

LDCs	2016	2017	2018	2019	2020	# of OHQs
Central Hudson	56	36	123	14	5	5
Con Edison	21	17	17	27	30	5
Corning	72	8	36	34	13	1
NFG	31	116	55	57	56	9
NGrid LI	84	2	8	13	11	2
NGrid NY	49	19	16	5	24	2
NGrid Upstate	50	45	44	38	74	11
NYSEG	61 ¹⁴	71	74	79	338	13
O&R	11	5	5	2	5	2
RG&E	29	22	45	57	52	1
Liberty	9	9	3	8	2	1

¹⁴ One of the 61 violations noted was for 16 NYCRR Part 255.557(c)(8). There was a total of 822 occurrences documented in the respective audit letter.

Appendix N

Other Risk Non-Compliances Identified through Audit Process

LDCs	2016	2017	2018	2019	2020	# of OHQs
Central Hudson	92	9	4	6	124	5
Con Edison	38	3	35	5	97	5
Corning	17	55	37	30	32	1
NFG	50	100	108	92	243	9
NGrid LI	18	0	0	4	79	2
NGrid NY	115	12	63	5	61	2
NGrid Upstate	105	125	21	121	117	11
NYSEG	149	77	83	66	109	13
O&R	89	2	13	0	37	2
RG&E	19	82	69	15	13	1
Liberty	16	7	2	9	4	1