

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service
Commission held in the City of
Albany on May 14, 2015

COMMISSIONERS PRESENT:

Audrey Zibelman, Chair
Patricia L. Acampora
Gregg C. Sayre
Diane X. Burman

CASE 14-G-0212 - Proceeding on Motion of the Commission to
Investigate the Practices of Qualifying Person
to Perform Plastic Fusions on Natural Gas
Facilities.

ORDER REQUIRING LOCAL DISTRIBUTION COMPANIES
TO FOLLOW AND COMPLETE REMEDIATION PLANS
AS MODIFIED BY THIS ORDER
AND TO IMPLEMENT NEW INSPECTION PROTOCOLS

(Issued and Effective May 15, 2015)

BY THE COMMISSION:

INTRODUCTION

On May 29, 2014, Department of Public Service Staff
(Department, Staff) learned that Consolidated Edison Company of
New York, Inc. (CECONY) procedures for qualifying and
requalifying persons performing plastic or Polyethylene fusions
(PE fusions, plastic fusions) on CECONY natural gas facilities
were not in compliance with Title 16 of the New York State
Codes, Rules and Regulations Part 255 (Part 255).¹ The

¹ Plastic fusions are joints made on plastic pipe and are
completed by applying heat and pressure to join two pieces of
plastic pipe and/or fitting. See 16 NYCRR §§255.273 (General
Requirements); 255.281 (Plastic Pipe); 255.283 (Plastic Pipe,
Qualifying Joining Procedures); 255.285 (Plastic Pipe,
Qualifying Persons to Make Joints); 255.287 (Plastic Pipe,
Inspection of Joints).

Commission commenced this proceeding to investigate the extent to which CECONY's failure to comply with the Part 255 PE fusion qualification requirements may have compromised CECONY's gas distribution facilities. To further safeguard the integrity of gas distribution systems statewide, the Commission also sought to determine if any other local gas distribution companies (LDCs) had failed to comply with PE fusion requirements and the extent to which any such failures impacted gas facilities statewide.

Therefore, on June 27, 2014, the Commission issued two orders, one directed to CECONY and one directed to all the other LDCs in New York State, commencing a PE fusion investigation.² Among other things, the CECONY Order required CECONY to report what actions it had taken and what actions it planned to take to address its non-compliance with Part 255 qualification protocols and to identify any safety risks posed by such non-compliance. The LDCs Order required all other LDCs to review their plastic fusion qualification/requalification procedures for compliance with Commission rules, and to either certify compliance with Part 255 or stop all PE fusion work until all workers performing PE fusions were requalified in compliance with 16 NYCRR Part 255. The LDCs Order required the LDCs that were found to be in non-compliance with Part 255 to report what actions each had taken and what actions each planned to take to address any non-compliance and any safety risks posed by such non-compliance.

² See Order Instituting Proceeding To Investigate Consolidated Edison Company Of New York, Inc.'s Practices And Obtain Information Concerning Plastic Fusions On Natural Gas Facilities (issued June 27, 2014) (CECONY Order) and Order Investigating the Practices and Obtaining Information Concerning Plastic Fusions on Natural Gas Facilities (issued June 27, 2014) (LDCs Order) (June 27 Orders).

Six LDCs, including CECONY, reported some level of non-compliance with the 16 NYCRR Part 255 qualification requirements for persons performing PE fusions.³ The LDCs that reported non-compliance then submitted plans to assess the risk posed by such non-compliance. These plans were published for public comment in the New York State Register. The comment period for the latest publication ended on February 14, 2015. No comments were received.

Further, a Secretary's Notice was issued on April 17, 2015 (April 17 Secretary's Notice) that requested comments on Department of Public Service (Department) Staff (Staff) proposed requirements, which are addressed in this Order. CECONY, New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., Rochester and Gas Electric Corporation, Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid (collectively, National Grid), Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., and Valley Energy, Inc. submitted comments. The comments received are addressed in the body of this Order.

By this Order, the Commission directs CECONY, National Fuel Gas Distribution Corporation (NFGD), New York State

³ The LDCs that self-reported and certified their qualification/testing of PE fusion workers is in compliance with Part 255 do not need to file remediation plans at this time and may stop performing continuous leakage surveys. They include: Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, and the Village of Hamilton Municipal Utilities Commission.

Electric and Gas Corporation (NYSEG), Rochester Gas and Electric Corporation (RG&E), Orange and Rockland Utilities (ORU), and Central Hudson Gas and Electric Corporation (CHG&E) ("the six LDCs)" to follow the remediation plans they have submitted and to otherwise improve upon those plans to the extent required herein. While the number of plastic fusion failures the LDCs have identified that are attributable to poor workmanship is relatively small compared to the total number of plastic joints in-service statewide, the new inspection protocols contained in this Order will further protect the public safety.⁴ By their nature, a very high level of safety is built into the process of making plastic fusions even when prescribed processes are not strictly followed. This does not mean, however, that the LDCs' areas of non-compliance can be taken lightly nor that the risk assessment process can be truncated; therefore, the assessment and remediation of identified failures shall proceed expeditiously.

The new requirements contained in this Order will allow time for the six LDCs to become compliant and the Order reflects this need through flexibility where warranted and where not in contravention of the strong policy of implementing changes in gas safety rules, regulations, and procedures.⁵ Therefore, all LDCs are given until September 1, 2015, to submit company procedures in requiring inspections of completed plastic fusions by a second person other than the one who performed the fuse ("second person inspections"); the results of such inspections shall be recorded. The records kept shall include

⁴ A plastic fusion that is considered a "failure" is not necessarily leaking but is one that, upon visual inspection, does not exhibit properties reflecting a properly fused joint.

⁵ This Order does not address enforcement of such instances of non-compliances, which will be addressed in separate Commission action at a later date.

the location and identification of the fuser, the inspector, and the date the PE fusion was completed. Second person inspections shall commence by October 1, 2015. Furthermore, LDCs are granted until January 1, 2016 to begin keeping records in an auditable database that can be tied into and correlates with the location of plastic fusions so that the exact locations of fuses can be determined using either a GPS system or a comparably specific system of identifying and recording the location of plastic fusions, which plan shall also be detailed in the September 1, 2015 filing. Such plans shall include each of the elements described herein. Beginning immediately, each LDC shall begin keeping records of each fuse uncovered in the regular course of business and shall remediate any fuse that fails a visual inspection. These records should be held so they can be submitted into the electronic database January 1, 2016.

BACKGROUND

Upon learning that CECONY's qualification of persons performing PE fusions had not included destructive testing as required by 16 NYCRR §255.285(c)(3), the Commission commenced this investigation into the impact such failure may have had not only on CECONY's gas system but other LDC systems as well.⁶ The June 27 Orders, therefore, required CECONY and other LDCs to:

- (1) stop all but emergency work on PE fusions if non-compliant;
- (2) bring their procedures for qualifying persons performing PE

⁶ The destructive test required by 16 NYCRR 255.285(c) is designed to demonstrate that the completed plastic fusion is stronger than the plastic pipe it joins. The destructive test only addresses the integrity of the joint itself. Gas systems are designed to transport natural gas from the city gate to the end user without losing (leaking) any gas and to withstand internal and external forces to the system as specified by design code requirements. Pressure tests and other safety design measures address leakage and external forces and are not part the non-compliance at issue here.

fusions into compliance; (3) determine and report the number and location of PE fusions performed by persons whose work had not been destructively tested and, therefore, were not qualified in accordance with safety rules to perform PE fusions; and (4) conduct a full assessment of the impact the failure to include destructive testing, if any, had on company facilities.⁷ As a precaution, all non-compliant LDCs were also required to commence continuous leakage detection surveys over plastic facilities pending further Commission action.

Four LDCs -- CECONY, NFGD, NYSEG, and RG&E -- reported they were not in compliance with the destructive testing requirements when they qualified and requalified workers to perform plastic fusions. These four LDCs invoked brief work stoppages until sufficient personnel could be properly qualified to continue system work.⁸

Two other LDCs, ORU and CHG&E, reported that, while they performed destructive testing in accordance with §255.285(c)(3) for qualifying and requalifying workers, they still experienced instances of non-compliance. Specifically, ORU reported that they had failed to requalify PE fusion workers on the schedule required by gas safety rules (i.e., their PE fusion workers had lapsed qualifications). Additionally, CHG&E reported that one employee had failed one portion of the written test for plastic fusions that the worker later passed, but that he had worked on PE fusion projects while not qualified. CHG&E also reported that a few contractors had not taken the written test required under CHG&E procedures, based upon the incorrect

⁷ The CECONY Order did not include the requirement to identify locations of PE fusions completed by workers not properly qualified because CECONY had not kept the records to do so.

⁸ CECONY stopped PE fusion work from May 29, 2014 through June 2, 2014; NFGD, June 30, 2014 through July 2, 2014, and NYSEG/RG&E July 1, 2014 through July 7, 2014.

assumption that they had taken it in the past. All personnel were brought into compliance. Neither ORU nor CHG&E stopped performing PE fusions as sufficient personnel were properly qualified to continue system work in a timely manner.

During the CECONY, NFGD, NYSEG and RG&E PE fusion stoppage, these LDCs qualified their workers performing PE fusions in all modules, including the destructive testing module. These LDCs have reported back to the Department that some of their PE fusion workers failed the destructive testing module upon qualifying and requalifying. All but CECONY have been able to use this information to focus their safety assessments and remediation efforts by inspecting what the LDC has represented as a statistically significant portion of PE fusions completed by workers who failed qualifying and requalifying.

On September 29, 2014, the Chief of the Department's Pipeline Safety Section, on behalf of the Department, sent a letter to all LDCs instructing them to address the potential risks they had discovered that were associated with, primarily, the LDC's failure to comply with the destructive testing requirements when they qualified and requalified workers to perform plastic fusions. The letter included eleven elements that each affected LDC was expected to include in its risk assessment, including the submission of remediation plans addressing the risks identified. Among the eleven Department directives to be included in the LDCs' plans, the Department instructed the LDCs to identify the number of PE fusions that would need to be inspected and the basis upon which the LDC deemed persons performing plastic fusions not to be qualified. Since September 2014, the Department has continued to work closely with the LDCs to discuss the ongoing progress of the risk assessments and the manner in which the LDCs are working to

remediate any system impacts resulting from lapses or failures to qualify persons performing PE fusions.

CECONY

CECONY's failure to include destructive testing in its PE fusion qualification procedures extended back to at least January 1, 2002.⁹ In qualifying plastic fusion workers after the June 27 Orders, a total of 91 workers (40 employees, five supervisors and 46 contractor employees) initially failed the destructive testing module.¹⁰ Moreover, CECONY has not kept records of which specific workers performed which PE fusions on its gas facilities since 2002.¹¹ Therefore, CECONY's failure to include the destructive testing module may impact all plastic fusions in CECONY's service territory made since 2002, which CECONY has estimated includes 800,500 PE fusions.

As a result of CECONY's inability to focus its risk assessment and remediation plans on only PE fusions made by workers who failed the 2014 qualifying and requalifying effort, CECONY proposed performing 400 "opportunistic digs," in which PE fusions being removed as part of normal operations would be subject to visual and destructive testing, to assess its gas

⁹ 16 NYCRR 255.285(c) requires either certain specified destructive mechanical tests, a non-destructive ultrasound, or three longitudinal strap destructive test ("strap test"). Destructive test will be assumed to mean the strap test as the code requirement is virtually always satisfied by the strap test.

¹⁰ Workers were retrained and retested until they passed the destructive testing module.

¹¹ While maintaining such records has not been a regulatory requirement, other LDCs did maintain such records, which allowed for far more efficient remediation efforts.

facilities.¹² To date, CECONY has inspected 173 plastic fusions. Of those 173 inspected, 101 passed visual inspection. Of the 101 that passed visual inspection, 23 were destructively tested and all 23 passed destructive testing. Of the 72 that failed visual testing, 63 were destructively tested and eight of those failed.¹³ As explained previously, a plastic fusion that is considered a "failure" is not necessarily leaking but is one that, upon visual inspection, does not exhibit properties reflecting a properly fused joint.

NFGD

NFGD's failure to include destructive testing in its PE fusion qualifying procedures extended back to June 15, 2011 for all plastic fusions.¹⁴ NFGD has reported that an estimated 117,000 PE fusions have been performed on plastic mains since 2003.¹⁵ To fully assess the impact of the lack of destructive testing when qualifying workers who performed plastic fusions since 2011, NFGD proposed to excavate and inspect 115 PE fusions

¹² CECONY has since stopped inspecting PE fusions removed during opportunistic digs. It will commence PE fusion inspections as soon as a statistically sound approach is developed upon the advice from the independent statistician CECONY is required by this Order to enlist.

¹³ 16 NYCRR 255.281(c) requires that plastic fusions not passing a visual inspection be removed and replaced.

¹⁴ Until June 15, 2011, NFGD had included destructive testing when qualifying persons to perform PE fusions. The reasons for the subsequent failure to do so are unclear.

¹⁵ NFGD has not provided an estimate of the number of fusions performed in the 2011 to 2014 period. The 117,000 estimate by the Company was used to determine the failure rate from the two in-service failures experienced in the past 10 years. Both were electrofusions and resulted in non-hazardous leaks.

performed by persons who failed NFGD's July 2014 requalification effort.

To date, NFGD has visually inspected 56 plastic fusions. Of the 56 plastic fusions visually inspected, 52 passed, 3 failed visual inspection, and 1 could not be evaluated because the bead had been removed.¹⁶ Of the 52 plastic fusions that passed visual inspection, 22 were destructively tested and all passed. Of the 3 plastic fusions that did not pass visual inspection and one that could not be visually inspected, all were destructively tested and all passed.

NYSEG and RG&E

NYSEG and RG&E's non-compliance extended back to at least December 2003 but only with respect to 6" hydraulic machine plastic fusions, which NYSEG and RG&E estimate affected 24,000 plastic fusions installed in 440 projects among their service territories. NYSEG and RG&E proposed they perform random excavations of 44 projects, beginning June 2015, where plastic fusions were performed by employees and contractors not properly qualified, distributed proportionately across NYSEG and RG&E territories.

ORU

ORU's non-compliance was limited to its failure to requalify persons performing fusions within the maximum allowed twelve months between requalifications. ORU has always qualified workers to perform plastic fusions using the destructive testing method. A total of 505 plastic fusions were

¹⁶ When two pieces of plastic pipe are heated and joined together under pressure, beads of molten material form along the circumference of the joint. The presence of the proper number of beads and their form indicates that the fusion is visually acceptable.

performed by persons whose qualifications had lapsed during the period between 2009 and 2014.¹⁷

ORU proposed a remediation plan in which it will inspect a random sample size of 60 fusions. Each fusion will be visually inspected by an independent third-party. For any fusion that fails a visual inspection, a destructive test will be performed by an independent third-party. Visual inspections and destructive testing is being performed in accordance with NGA plastic pipe joining program requirement guidelines.

Central Hudson Gas & Electric

CHG&E failed to requalify one of its employees and three contract workers on the schedule required by gas safety rules; the company has completed the required requalifications. CHG&E's risk assessment also revealed that one of its employees and three contract workers had failed one written test portion of the qualification exam in January 2014; in June 2014 they were retested and passed. These individuals took part in seven projects while not in compliance with 16 NYCRR Part 255. CHG&E's risk assessment plan is to determine the number of plastic fusions made while out of compliance and excavate and assess a number of random fusions for each of these four workers.

DISCUSSION AND CONCLUSION

As a result of the June 27 Orders, which were issued after the Commission became aware that CECONY had not complied with the plastic fusion qualifying procedures, three other LDCs were found to be in a similar situation; they had not included destructive tests as part of their plastic fusion qualifications

¹⁷ Qualification records are required to be kept for five years.

for some or all of the same period as CECONY and for some or all of the same types of fusions as CECONY. Two LDCs reported minor lapses in requalification requirements, which affected relatively few plastic fusions.

Public Service Law §66(2) assigns to the Commission the authority to investigate gas corporations and the methods employed by such corporations in the distribution of gas and to "protect those using such gas." By this Order, Department Staff is authorized to conduct this investigation with respect to plastic fusions pursuant to PSL §66(11), and to work directly with CECONY, CHG&E, NFGD, NYSEG, ORU, and RG&E in advising them as necessary in their risk assessment and remediation plans to ensure the safety of plastic gas facilities.

The investigation to date has revealed that some LDCs had failed to qualify their PE fusion workers in compliance with Part 255 and that some had lapsed requalifications. The Department, in its September 29 letter, advised the LDCs to take the next logical step in the investigation and develop specific remediation protocols and reporting requirements to address the failures discovered. For example, the September 29 letter directed the LDCs, as they discovered problems in their systems, to examine and test a statistically significant number of plastic fusions and to address any safety risks or adverse conditions discovered.

As detailed above, six LDCs reported lapses in Part 255 compliance to some extent such that all had in-service gas facilities that included plastic fusions made by persons not qualified in compliance with 16 NYCRR Part 255 requirements. All six LDCs submitted plans to assess and remediate the risks posed by their compliance lapses. As discussed below, the Commission directs modifications to some of those plans. Inasmuch as Department Staff is authorized to conduct this

investigation pursuant to PSL §66(11), Staff is authorized to inquire and advise on the LDCs' practices and to direct improvements to assessment or remediation plans as needed in order to fulfill the June 27 Orders' mandate that all LDCs "identify how the company will address any safety risk posed by work done by such employee [who was not qualified or requalified in accordance with Part 255]." All LDCs are ordered to work directly with Department Staff to complete the risk assessment and remediation plans.

CECONY

The results of the samples CECONY has inspected to date indicates that the company needs to take further action to obtain a full understanding of the potential issues associated with plastic fusions performed by non-qualified workers and a reasonable remediation plan to address any deficiencies. Even with non-randomized excavations, CECONY continued to find a high percentage of visual failures and, of those, a high level of destructive testing failures. Because none of CECONY's plastic fusion workers had been properly qualified or requalified using the destructive test module, a full risk assessment and remediation of CECONY's non-compliance must be completed using statistical analysis. Moreover, after CECONY began its risk assessment following the June 27 Orders, CECONY learned that the company's own lack of record-keeping, unlike other LDCS, resulted in its inability to identify which specific workers performed which plastic fusions. Such records would have allowed CECONY to identify and inspect a set number of PE fusions per worker in a focused and efficient review of plastic fusions currently in service that were performed by workers with inadequate credentials. Instead, CECONY must assess across the entirety of its gas system to determine the extent to which

plastic fusions may have been affected. Similarly, the remediation plan that CECONY implements will be one that relies on statistically valid sampling and remediation of plastic fusions. CECONY, therefore, is ordered to retain a statistician who will work at Department Staff's direction to develop a reliable assessment plan to identify risks that exist and an acceptable remediation of those risks.

In its comments, CECONY states it is in the process of retaining a statistician who will provide independent third-party consultation to develop the risk sampling and remediation plan.¹⁸ Because an objective risk assessment of CECONY's gas system is essential, Staff must remain intricately involved with the third-party consultant statistician as CECONY's assessment and remediation plans progress. Therefore, CECONY is required to provide the Department unfettered access to the statistician, who shall work with the Department and CECONY to make certain that the direction of the risk assessment and remediation plans are robust, objective, reasonably cost-effective, and comprehensive. After the risk assessment plan is fully developed, CECONY will file a revised assessment plan by June 15, 2015 that includes sampling in accordance with the recommendation of its third-party statistician. Given the importance of this investigation, CECONY, to the extent Staff finds CECONY's risk assessment plan sufficient, shall immediately follow the plan during the pendency of the Commission's review. By October 1, 2015, CECONY shall submit its remediation plan based upon the result of its risk assessment findings and the statistician's recommendation.

¹⁸ Staff reports it and CECONY have since met with the retained statistician, who has proposed an initial statistical approach to assess CECONY's plastic fusions.

Statistical Sampling

When the six LDCs submitted their risk assessment plans, it was apparent that despite the need to do so, in most instances, random sampling had not been included in the assessment process. Therefore, the September 29 letter sought sampling of a "statistically significant" number of PE fusions. Staff recommended, in the April 17 Secretary's Notice, that LDCs propose what such random sampling should include.

In their comments, NYSEG/RG&E provided no suggested sampling plan and stated that they will follow the remediation plans they have already proposed.¹⁹ NFGD states it is making "good progress" on its sampling of fuses made during non-compliance and it proposes to continue to work with Staff to tailor its statistical sampling appropriately. NFGD recommends that a hard rulemaking address the question for similar problems in the future.²⁰ ORU states it has no objection to the Commission adopting a Staff recommendation with respect to "sampling, risk assessments and/or remediation plans" except that ORU seeks consistent application of those requirements for all the LDCs.²¹

NFGD, NYSEG, and RG&E's sampling plans shall include uncovering a minimum of one hundred random PE fusions that were performed during the period their workers were tested without the destructive module.²² The 100 joints shall be randomly selected and visually examined in 2015. Each of the randomly

¹⁹ NYSEG/RG&E at 1.

²⁰ NFGD at 3.

²¹ ORU at 2.

²² A fuse that fails visual or destructive testing shall count as a failure.

chosen plastic fusions must pass visual inspection and if they do not, each shall be remediated. These random fusions will be in addition to the LDCs' current risk assessment plan if the LDC's initial assessment was not based upon random excavations of PE fusions.²³ NFGD, NYSEG, and RG&E shall file new sampling plans by May 31, 2015 that include this element. The results of the new sampling plans shall be reported to Staff in monthly and annual reports. The sampling plans proposed by ORU and CHG&E are accepted without modification at this time. CHG&E, NFGD, NYSEG, ORU and RG&E shall complete and fully execute their risk assessment and remediation plans submitted and as revised by this Order. CHG&E, NFGD, NYSEG, ORU and RG&E shall complete and submit the results of their risk assessments by October 1, 2015. Because the extent of the need for remediation will be informed by the assessment process, also by October 1, 2015, CHG&E, NFGD, NYSEG, ORU and RG&E shall propose a date by which their remediation plans, if necessary, will be completed upon submission of their final assessments. Consistent with the authorization to Staff to execute this investigation, the Commission authorizes the Department to recommend modifications to the risk assessment plans the Department deems necessary as findings are revealed during the ongoing assessment processes.

Each LDC that must complete risk assessments, shall continue to submit monthly a detailed summary of the results of their risk assessments, indicating: (1) the number of visual inspections performed, (2) the number of passes and fails, and (3) the number and results of destructive tests performed on

²³ This requirement is not applicable to ORU and CHG&E, as their current proposed plans are functionally adequate given the total number of fusions performed by the companies with non-compliant personnel.

each group of fuses that passed visual inspection and that failed visual inspection.²⁴ The LDCs shall submit their reports to the Chief of Pipeline Safety by the 15th of each month. An annual report, submitted on January 1, 2016, will be an annual report that includes a summary of the prior year's inspection and remediation results. Staff is instructed to determine when the LDCs' risk assessments and risk remediation actions shall cease and a final report shall be submitted to the Chief of Pipeline Safety. The plans shall be considered completed upon LDC compliance with this Order and completion of the assessment and remediation work, which event shall be reported by Staff to the Commission.

The Need for Visual Inspections by a Second Person

To date, the risk assessments provided by the LDCs have revealed a serious area of non-compliance, in which in-service plastic fusions, when exposed for inspection, failed a visual inspection. New York's gas safety rules currently require that each joint be visually inspected; the joint must be removed and replaced if it fails visual inspection.²⁵ Current regulatory and LDC procedures do not specify, however, who shall perform the visual inspection of the plastic fusion; therefore, visual inspections have been performed by the same person who completed the joint. Staff proposed in the April 17, 2015 Secretary's Notice the requirement that a second person, one who did not complete the fusion, inspect it.

²⁴ If this information is inapplicable, the LDC shall provide a justification as to why the information is not provided for in their filing.

²⁵ See 16 NYCRR §§255.273(c) and 16 NYCRR §255.281(c), respectively.

In their comments on this new inspection requirement, NYSEG/RG&E agree that it is appropriate that a second inspector visually inspect plastic fusions before they are placed into service. They ask that the person be able to be on the same crew as the person who completes the fusion being inspected.²⁶ ORU supports the recommendation "[t]o the extent an LDC has two members of a crew that are qualified to install and inspect plastic fusions." ORU proposes using the same person who performed the fuse to inspect as it does now if there are not two members of a crew who are qualified PE fusions.²⁷ National Grid states adding a second inspector will "take time and resources" (it estimates 6-9 months) to implement such a requirement and train workers since, while it uses two-person crews to perform fuses at this time, sometimes only one worker is PE qualified. National Grid notes a second inspector will add costs to the installation of plastic fusions.²⁸ Similarly, CHG&E states that until the precise "code language" is changed, it cannot know the true cost of such a requirement nor Staff's "precise expectations."²⁹ NFGD "supports the idea of an independent inspection" but asks that such inspection only be required "of the completed fuse."³⁰ Corning asks for a year to comply and seeks clarification that the inspection will be "of the bead after the fusion has been completed" and for a better

²⁶ NYSEG/RG&E at 3.

²⁷ ORU at 3.

²⁸ National Grid at 3-4.

²⁹ CHG&E at 3.

³⁰ NFGD at 5.

description of the qualifications of the person performing the inspection.³¹

Gas facilities are underground and, once completed, no further inspection typically occurs until a problem is discovered. Thus, it is critical that appropriate measures are in place to ensure the adequacy of the work being done. The current practice of PE fusion inspection, whereby the person performing the fuse also inspects it, is insufficient to ensure safety because the person performing the fuse is unlikely to be objective when reviewing his or her own work. Indeed, this investigation has revealed that the current practice is not working. Notably, in the risk assessments, LDCs found no PE fusions that passed visual inspection that then failed destructive testing. For instance, as part of initial risk assessment activities, NFGD visually examined 37 in-service plastic fusions. Of those fusions that passed visual inspection and were further destructively tested, none failed destructive testing. Of the 101 PE fusions CECONY found that had passed visual testing, 23 were destructively tested and all of them passed.

This is compelling evidence of the importance of ensuring proper visual inspection takes place. So that plastic fusions are performed correctly based upon an unbiased inspection, all LDCs are required to put in place and to follow procedures by which plastic fusions installed in gas delivery systems must pass visual inspection by a person who has been fully qualified in plastic fusion and who has not performed the plastic fusion.

Further bolstering this second person inspection requirements is the fact that the rate of destructive test

³¹ Corning at 1, 2.

failures of plastic fusions that have so far failed visual inspections in the plastic fusion risk assessments. A reliable visual inspection addresses the fundamental desire for PE fusion integrity. Supporting and complementing the decision in this Order, on March 11, 2015, the federal Pipeline and Hazardous Materials Administration (PHMSA) adopted the requirement, effective October 1, 2015, that a second person other than the operator who completes any type of construction must inspect the work.³² This applies to the installation of plastic gas facilities.³³

Inasmuch as LDCs will be required under federal law to comply with the second person inspection requirement by October 1, 2015, the LDCs shall also be required by this Order to perform second person inspections by October 1, 2015. So that Staff may review the procedures that the LDCs will begin to follow on October 1, 2015, by September 1, 2015, all LDCs shall submit modified procedures requiring that each PE fusion joint placed into service be inspected by another person who is qualified to inspect pursuant to 16 NYCRR §255.287, not by the person making the fused joint. Further, the new second inspector procedures must include the manner in which records will be maintained tracking inspectors' qualification status.

To be clear, only completed fusions need to be inspected by a second person. It may be that LDCs will have to qualify more workers in PE fusion inspections so the LDC can assign a second qualified worker to each plastic fusion installation team; but a second person, who may also be on the

³² See Federal Register, Vol. 80, No. 47, Wednesday, March 11, 2015, at 12762-12764.

³³ Given the new federal requirement, St. Lawrence Gas' request to be exempted from it is denied.

same PE fusion team, must always inspect each completed fuse. Finally, the requirements for what visual characteristics constitute a successful PE fusion are described in detail in the manufacturers' instructions, by PHMSA, and industry standards.³⁴

Current regulations allow LDCs the option of either requalifying persons who perform plastic fusion on an annual basis, or keeping track of the failures attributable to an individual and retraining the individual if those failures reach 3% or three failures, whichever is less, in a given year.³⁵ Given the requirement that a second person inspect all plastic fusions, fusions deemed unacceptable by the fuser prior to the second inspection would not ultimately be counted as a failure.³⁶

GPS Coordinates of Completed and Exposed
Plastic Fusions, Fusers, and Inspectors

As most starkly highlighted with respect to CECONY, identifying the location of individual plastic fusions, who completed the fuse, and who inspected the fuse is absolutely necessary for both compliance and enforcement purposes and so that such information is readily available to LDCs and Staff who need to locate facilities. For this reason, Staff recommended in the April 17, 2015 Secretary's Notice that LDCs be required to employ global positioning satellite (GPS) coordinates to

³⁴ See 16 NYCRR §255.285.

³⁵ 16 NYCRR §§255.285(c) and (d).

³⁶ The fuser should sign the fusion upon the fuser's own successful inspection and prior to the second inspection. Any fusion signed by a fuser that is removed upon the second inspection would count as a failure. This provides an incentive for the fuser to perform a thorough inspection prior to signing the fusion. Inspecting and removing unacceptable fuses prior to the second inspection is an important safety element that all LDCs should incorporate into their processes.

record plastic fusion locations, workers, and inspectors throughout each service territory.

The LDCs in their comments support the collection of location, fuser, and inspector data but express concern over cost and problems using GPS in some areas. Consequently, most propose means other than GPS to accomplish this data collection. All but CHG&E, which is investigating an appropriate GIS system, have commented that the use of GPS is unnecessarily expensive to accomplish Staff's goals. Valley Energy, St. Lawrence Gas, NFG, NYSEG and RG&E for instance, state that the use of swing ties or orthogonal measurements are as effective as GPS systems. NFG seeks support for using "traditional measurement techniques" in lieu of GPS systems but does not name them. CHG&E is commencing an initiative that it states will test GIS software capable of fully mapping its system, which CHG&E states it needs four years to complete. It is unclear from many of the comments exactly what methods the LDCs currently use to identify the locations of their PE fusions and the workers who performed them; we know such systems are in place, however, because the LDCs completed their PE fusion assessment plans based in part on the locations of PE fusions and records of who performed the fusions. If the requirement of GPS is adopted, NFG seeks "an acceptable tolerance level" for determining which GPS device or system meets Staff's expectations.

The LDCs raise questions sufficient to warrant more time before a Commission requirement that GPS systems be used to monitor the location, fuser, and inspector information. In particular, similar systems are already in place in some service territories that LDCs say are as useful as a GPS system. Therefore, by September 1, 2015, all LDCs shall submit a description of the electronic record-keeping systems each uses or proposes to use.

In the September 1, 2015 filing, and after consulting with Staff, all LDCs shall provide (1) detailed information on the costs associated with the hardware, software, and training of the chosen electronic location and identification system; (2) a breakdown of the comparative costs of rejected alternatives; (3) why the system chosen is as effective as a GPS system; (4) the roll-out and training schedule for the location and identification system chosen; (5) an explanation of the problems associated with those areas in which GPS would not work; (6) explanation of the ease with which Staff can duplicate the locations for audit purposes; and (7) the implementation date of the system chosen.

LDCs shall have until January 1, 2016 to confirm in a filing the electronic record keeping system each has installed and that Department Staff has been consulted and agrees with the approach taken.

Inspecting Exposed Plastic Fusions

Inspections of every plastic fusion currently in-service completed by individuals who had not been properly qualified would be cost-prohibitive and technically infeasible. For this reason, statistical sampling is being used to assess the sufficiency of existing plastic fusions where qualifying procedures did not include destructive testing. To buttress the sampling process, Staff recommended in the April 17, 2015 Secretary's Notice that, going forward, PE fusions exposed in the regular course of business be visually inspected.

CHG&E comments that since PE fusions have "historically low leak rates per mile as compared to other piping systems" the need to assess and remediate exposed fusions "should be thoroughly vetted to ensure" the requirement will increase safety at reasonable cost. CHG&E also claims

additional excavation will be necessary to properly inspect an uncovered fuse.³⁷ Corning seeks clarification on what needs to be done if an exposed PE fusion fails a visual inspection; in particular, would further excavation be expected if an exposed PE fusion must be remediated.³⁸ St. Lawrence gas supports inspecting exposed fusions except that it believes that plastic fusion beading damaged after installation should not be considered a failure.³⁹ Similarly, NYSEG/RG&E agree with the recommendation to inspect PE fusions exposed during the normal course of business except that they believe beading affected by soil impingement or corrective action that would have impacted the beading should not be treated as a failure.⁴⁰ ORU and CECONY state they are developing procedures for such inspections but only when a qualified crew member is already on site to perform such inspection. They seek a definition for the term "normal operations and maintenance" and state that to expand the inspection requirement to include electric operations and maintenance in addition to gas operations would "unduly increase the cost of implementation, create unreasonable challenges in scheduling and/or having available qualified gas personnel to perform inspections."⁴¹ They state this creates an undue burden on combination gas and electric companies that non-combination companies would not face. National Grid believes the cost of having a qualified worker at each operations and maintenance

³⁷ CHG&E at 4.

³⁸ Corning at 2.

³⁹ St. Lawrence Gas at 2.

⁴⁰ NYSEG/RG&E at 4.

⁴¹ ORU at 2-3; CECONY at 3.

task does not warrant the level of safety improvement of such routine PE fusion inspections, particularly when the persons who have performed the PE fusions were properly qualified to do so. National Grid does not believe replacing fusions that fail a visual inspection is warranted when the fusion has obviously been affected by "latent external forces" because the visual failure would not signify a bad fusion.⁴² Finally, NFGD supports the proposal as long as it does not have to document the results of each inspection and that the name of the inspector may be kept in a location database other than a GPS system and that a "reasonable timeframe" be approved for its implementation and "after a period of time" that only visual failures be kept in the database.⁴³

Not only will visual inspections of PE fusions made during routine work provide important information to the LDC, it will also provide the opportunity to remediate fusions that should not have passed inspection had a second person inspected it initially. Moreover, continued sampling of plastic fusions currently in service is necessary to reinforce the statistical sampling process. Therefore, all LDCs are directed, beginning immediately, to visually inspect every fused plastic joint that is exposed during normal operations. The term "normal operations" includes all facility work performed that exposes a plastic fusion. Operators need not expand an excavation beyond an exposed plastic fusion unless further excavation was

⁴² National Grid at 6.

⁴³ NFGD at 8.

otherwise intended or an exposed fusion exhibits extreme problems.⁴⁴

ORU and CECONY's assertion that requiring the plastic fusion inspection requirement to include fusions uncovered during electric operations is unduly burdensome to combination utilities is unpersuasive. Given the technology that exists today, combination gas and electric companies need not assign nor wait for a qualified PE fusion inspector to be on site at every operation. In this day and age, workers can photograph a fusion and send it back to headquarters for an assessment that the beading was properly formed. Training workers how to properly photograph a fused joint is not an undue burden. Once a fusion is photographed for inspection, the fuse may be covered over. Only if a fusion fails visual inspection will remediation (and further work time) be required.

It is incumbent on LDCs to have in place only PE fusions that should have passed visual inspection; therefore, site work will only be affected if PE failures exist. Therefore, until further notice, or upon petition for good cause shown, each LDC shall inspect plastic fusions exposed during normal operations. They shall have the option to photograph the fusion, but shall record the results of the inspection, and retain in a database all of these inspections for future Pipeline Safety audits. All such plastic fusions that fail visual testing should be remediated or replaced as soon as

⁴⁴ LDCs, of course, must use discretion in this regard. LDCs have an obligation to provide safe and adequate utility service. Pursuant to that obligation, if an exposed PE fusion is so visually improper that further excavation would obviously be needed to ensure safety of a gas system, LDCs must inspect the area further. For example, fusions immediately adjacent to failures could be inspected.

possible after it is determined that they failed visual inspection. If an LDC exposes a PE fusion that has obviously been impacted by third party or other damage, the fusion should be remediated if its integrity has been compromised. If its integrity was not apparently compromised and there is no evidence of unacceptable workmanship, the fuse should be handled as normal damage and through the LDC's Distribution Integrity Management Program. The inspection should record the fuse as a "visual failure due to external forces." Based upon the results of this practice, the Commission will evaluate this requirement and will determine at a later date if it needs to continue.

The Commission orders:

1. Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas, and Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, and the Village of Hamilton Municipal Utilities Commission, may discontinue the continuous leakage detection surveys over plastic facilities ordered by the Commission on June 27, 2014.

2. Consolidated Edison Company of New York, Inc., Central Hudson Gas and Electric Corporation, New York State Electric & Gas Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., and Rochester and Gas & Electric Corporation shall continue their continuous leakage surveys until the Department of Public Service Staff states in writing that all assessment and remediation plans are completed satisfactorily.

3. New York State Electric & Gas Corporation, National Fuel Gas Distribution Corporation and Rochester and Gas

& Electric Corporation shall excavate and sample a minimum of 100 randomly chosen plastic fusions as part of their risk assessment and remediation plans and, by May 31, 2015, submit new sampling plans that include the minimum random samplings. Plastic fusions that fail visual inspection shall be remediated. The assessment plans shall be completed by October 1, 2015, at which time New York State Electric & Gas Corporation, National Fuel Gas Distribution Corporation and Rochester and Gas & Electric Corporation shall submit their results and propose a date by which remediation shall be completed.

4. Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., and Rochester and Gas Electric Corporation shall follow their assessment and remediation plans and shall work directly with Department of Public Service Staff to improve upon or more comprehensively complete the assessment and remediation plans.

5. New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., and Rochester and Gas Electric Corporation shall remove and destructively test a minimum of one in-service plastic fusion performed by each person while that person was not properly qualified in accordance with Part 255 requirements as part of their risk and remediation plans.

6. Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., and Rochester and Gas Electric Corporation shall continue to submit monthly a detailed summary of the results of their risk assessments,

indicating: (1) the number of visual inspections performed, (2) the number of passes and fails, and (3) the number and results of destructive tests performed on each group of fuses that passed visual inspection and that failed visual inspection. If this information is inapplicable, the LDC shall provide a justification as to why the information is not provided in the filing. The LDCs shall submit their reports to the Chief of Pipeline Safety by the 15th of each month; if submitted electronically, filings may be sent to safety@dps.ny.gov. A January 1, 2016 report will be an annual report that includes a summary of the prior year's inspection and remediation results. Such reports shall continue until Department of Public Service Staff confirms in writing that a risk assessment and remediation plan is completed.

7. By October 1, 2015, Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., Rochester and Gas Electric Corporation, Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, Chautauqua Utilities, Inc., N.E.A. Cross of New York, Inc., and the Village of Hamilton Municipal Utilities Commission shall modify and implement all operating procedures involving plastic fusions to (a) require a successful inspection of each plastic fusion by a someone other than the person who completed the plastic fusion and who is qualified to inspect plastic fusions, and (b) record the name of each person

who performs each plastic fusion and the name of the person who performed the inspection for each plastic fusions.

8. By September 1, 2015, Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., Rochester and Gas Electric Corporation, Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, Chautauqua Utilities, Inc., N.E.A. Cross of New York, Inc., and the Village of Hamilton Municipal Utilities Commission shall each submit its proposed procedures to comply with Ordering Clause 7.

9. By September 1, 2015, Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., Rochester and Gas Electric Corporation, Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, Chautauqua Utilities, Inc., N.E.A. Cross of New York, Inc., and the Village of Hamilton Municipal Utilities Commission shall submit proposals for implementing a record-keeping system, whether by GPS or alternative means to identify and retain in an electronic database the location of each plastic fusion, the person who completed the fusion and the

name of the inspector. Such proposals shall include (1) detailed information on the costs associated with the hardware, software, and training of the chosen electronic location and identification system; (2) a breakdown of the comparative costs of rejected alternatives; (3) why the system chosen is as effective as a GPS system; (4) the implementation and training schedule for the location and identification system chosen; (5) an explanation of the problems associated with those areas in which GPS would not work; (6) explanation of the ease with which Department of Public Service Staff can duplicate the locations for audit purposes; and (7) the implementation date of the system chosen.

10. By January 1, 2016, Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., Rochester and Gas Electric Corporation, Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, Chautauqua Utilities, Inc., N.E.A. Cross of New York, Inc., and the Village of Hamilton Municipal Utilities Commission shall have in place the electronic record-keeping of plastic fusions required in Ordering Clause 9.

11. Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., Rochester and Gas Electric Corporation, Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National

Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, Chautauqua Utilities, Inc., N.E.A. Cross of New York, Inc., and the Village of Hamilton Municipal Utilities Commission as of the date of this Order shall begin to inspect every in-service plastic fusion exposed during normal operations and maintenance; record the location of each plastic fusion with specific coordinates; record the results of each inspection, and the name of the inspector, with the records available for review by Department of Public Service Staff. Record keeping shall continue until notified in writing by the Department of Public Service Chief of Pipeline Safety that they may be discontinued.

12. If, during the course of inspections performed on plastic fusions exposed during normal operations, Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, Chautauqua Utilities, Inc., N.E.A. Cross of New York, Inc., and the Village of Hamilton Municipal Utilities Commission identify any plastic fusions that fail to pass visual inspection, each LDC shall identify and remediate such failed fusion and shall commence monthly reporting to the Commission of each location of such visual failures and the remediation action taken.

13. Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., Rochester and

Gas Electric Corporation, Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, Niagara Mohawk Power Corporation d/b/a National Grid, Corning Natural Gas Corporation, St. Lawrence Gas Company, Inc., Valley Energy, Inc., Bath Electric, Gas Water Systems, Fillmore Gas Company, Reserve Gas Company, Woodhull Municipal Gas Company, Chautauqua Utilities, Inc., N.E.A. Cross of New York, Inc., and the Village of Hamilton Municipal Utilities Commission shall remediate prior to being backfilled every plastic fusion that fails visual inspection during the process required in Ordering Clause 11 and shall maintain a record of the type of remediation, when and where the remediation occurred.

14. Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Central Hudson Gas and Electric Corporation, National Fuel Gas Distribution Corporation, Orange and Rockland Utilities, Inc., and Rochester and Gas Electric Corporation shall remediate those plastic fusions that were excavated in compliance with the June 27 Order and failed visual inspection and shall maintain a record of the type of remediation and the location of the remediated fusions.

15. Consolidated Edison Company of New York, Inc. shall contract with a statistician consultant who will act at the direction of the Department of Public Service to (1) develop a risk assessment plan for Consolidated Edison Company of New York's gas system and (2) recommend a statistically rational and reasonable remediation program that Consolidated Edison Company of New York, Inc. will follow. Any disputes about the direction the assessment and remediation plans will take shall be resolved by the Commission.

16. Consolidated Edison Company of New York, Inc., shall submit a new risk assessment plan by June 15, 2015, after consultation with the independent statistician. Consolidated

Edison Company of New York, Inc. shall immediately follow the assessment plan and shall submit a remediation plan by October 1, 2015.

17. The Secretary in her sole discretion may extend the deadlines set forth in this Order. Any request for an extension must be in writing, must include a justification for the extension, and must be filed at least one day prior to the affected deadline.

18. This proceeding is continued.

By the Commission,

(SIGNED)

KATHLEEN H. BURGESS
Secretary