

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service
Commission held in the City of
Albany on November 14, 2013

COMMISSIONERS PRESENT:

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

CASE 13-G-0484 - In the Matter of Review of Gas Emergency
Preparedness.

ORDER DIRECTING THE FILING OF
UPDATED GAS EMERGENCY PLANS AND
INVITING COMMENTS ON BEST PRACTICES

(Issued and Effective December 18, 2013)

BY THE COMMISSION:

INTRODUCTION

Recent weather events have placed new and significantly heightened responsibilities on our gas pipeline operators to prepare for events, like weather, which may significantly disrupt their efforts to provide safe and adequate service. Specifically, in the last two years, broad areas of the State were impacted by several very large storms. During each of these events, substantial portions of one or more gas distribution systems were damaged or otherwise compromised, and, as a consequence, gas service to customers in these areas was interrupted or lost. Under these circumstances, the operators were required to safely repair their facilities and to restore service to customers on a scale not previously experienced.

From this experience, new insights have developed into best practices ("Emergency Response Best Practices" or "Best Practices") which could be applicable to emergency response

events. It appears these Best Practices could be usefully adopted and incorporated into each pipeline operator's emergency plan. In this order and in the Appendix to this order, we will describe the Best Practices which we have identified thus far and set forth a process to have gas utilities revise their emergency plans in light of these Best Practices and then seek comments on the revised plans and the Best Practices.

BACKGROUND

The Department's rules currently require each pipeline operator to prepare and file written plans ("operating and maintenance plans") before operating a pipeline system¹, and a substantial part of these operating and maintenance plans are Emergency Plans ("Emergency Plans" or "Plans") as specified in 16 NYCRR § 255.615.² As an integral part of the operating and maintenance plans, these Emergency Plans must be reviewed and updated at intervals not exceeding 15 months, but at least once each calendar year. Further, the pipeline operator must conform its operations with the filed Plans, and the Commission may require the operator to amend the Plan, as necessary.³

The pipeline operators' Emergency Plans are integral to effective preparation and storm response. While our rules outline important components that must be included in a gas Emergency Plan, they may not provide as much guidance as may be needed to the regulated community for their emergency preparedness and response efforts. This order seeks to bridge that gap, in light of recent experience, by enhancing the basic

¹ 16 NYCRR § 255.603.

² The full text of 16 NYCRR §§ 255.603 and 255.615 are found in Appendix 2.

³ 16 NYCRR § 255.603 (b), (d), and (e).

Emergency Plan framework through the description of Emergency Response Best Practices.

Hurricane Irene in August 2011, Tropical Storm Lee in September 2011, Superstorm Sandy in October 2012, and the 2013 flooding in the Mohawk Valley have highlighted the need for pipeline operators to develop and implement more robust gas Emergency Plans. Hurricane Irene followed by Tropical Storm Lee about a week later, led to over 11,500 natural gas service interruptions statewide. Superstorm Sandy made landfall downstate on October 29, 2012 and caused the interruption of over 25,000 gas customers, primarily due to coastal flooding, and restoration of gas service continued for several months. On June 27-28, 2013, the Mohawk River crested and devastated areas in upstate New York, particularly in Herkimer and Oneida counties. This severe flooding destroyed 44 homes, damaged 500 homes and 150 businesses, and caused over 3,000 natural gas service outages. Gas service was restored to customers able to receive gas by July 2. Prior to these events, it was rare for gas utilities to experience interruptions in end user gas services of this scale. Fashioning the utility response to such events requires careful emergency planning and expedited response because of the inherently dangerous explosive properties of natural gas.

Flooding of the scope caused by such previously atypical storms presents further unique challenges for gas distribution systems. Water intrusion resulting from flooding, for example, can occur through openings on the pipeline that have been damaged or through connections on customer piping that have become compromised by flood waters. Whatever the path by which water intrusion occurs, it can cause damage to gas equipment - including valves and regulators - and flow restrictions, leading to decreases in pressure, and, in many

cases, to customer outages. Further, impacts from water intrusion can linger for many months, prolonging service outages, and these effects are worsened during winter months, when the water freezes.

Even if a pipeline operator can avoid shutting down a particular gas delivery system, significant safety issues and prolonged outages may occur. During Superstorm Sandy, most of New York City's and Long Island's distribution systems were not shut down, but an aggressive time and resource intensive inspection process was required to protect gas customers and their property. Under this process, each low pressure service had to be inspected to ensure that the customer equipment was safe to operate. Until these inspections were completed, ongoing leak surveys were required to ensure that gas leakage was not occurring.

An additional challenge associated with gas restoration is that, whenever a gas service is interrupted as part of an emergency response, the gas service needs to undergo testing prior to being re-energized. This testing is essential to ensure the integrity of associated gas equipment, including downstream (customer owned) piping. Although essential, this testing adds time to the restoration process. Pipeline components, such as service regulators that have been underwater and which could have been damaged, must also be replaced prior to returning to service. As a result, the restoration of gas services, in contrast to reenergization of electric services, must often proceed one customer at a time.

The severe storms that occurred during the summer of 2013 affecting the Mohawk Valley allowed gas utilities to put some lessons learned from previous events (Lee, Irene, and Sandy) into action. These measures positively affected the emergency response and restoration times for these 2013 storms.

However, while the utilities' response to the storm's devastation showed a marked improvement over the response seen during prior storm events, there are opportunities for further improvement.

The potential for further improvements to the utility storm response capability, including the potential description of Best Practices, were also discussed by Staff with representatives from the natural gas and hazardous liquid pipeline industries the recent storm events.

DISCUSSION

As a result of Staff's efforts, described supra, and reflecting guidance from other sources,⁴ Department Staff developed the Emergency Plan Best Practices attached as an Appendix to this order. These Best Practices are organized into eight categories:

- General Recommendations (BP 1-12)
- Communications (BP 13-21)
- Mutual Assistance (BP 22-30)
- Incident Command System (BP 28 - 30)
- Training (BP 31 - 35)
- Outage Management (BP 36 - 37)
- Sectionalizing Zones, Critical Valves, Service Isolation (BP 38 - 43)
- Post Emergency (BPO 44 - 45)

Each of these categories is discussed below.

⁴ Guidance includes information from PHMSA's Operations & Maintenance Enforcement Guidance - Part 192 Subparts L and M, from PHMSA's Advisory Bulletins ADB-10-08, ADB 05-03, ADB-02-05, ADB-01-02, ADB-94-04, and ADB-93-03, and from the Gas Piping Technology Committee (GPTC), which develops guidance materials on achieving compliance with the federal pipeline safety regulations found at 49 CFR Part 192.

General Recommendations (BP 1-12)

This section provides a general overview of best practices for pipeline operators developing and implementing Emergency Plan procedures. In particular, following the recent severe storms, staff observed that some existing Emergency Plans inadequately addressed different types of flooding. The plans also failed to give consideration to planning for multiple disasters in close succession, such as Hurricane Irene and Tropical Storm Lee. As a result, the Best Practices recommend that operators respond to natural disasters with particular attention paid to flooding and events occurring in rapid succession.

Notably, these practices also recommend that pipeline operators identify the locations of critical customers and facilities in order to speed restoration (BPs 8 and 11) and suggest hardening of the gas system (BP 9) as an effective means to protect against future storms.

Communications (BP 13 - 21)

The ability to communicate is critical during and after an emergency event. Gas facility operators must be able to communicate with their own personnel (including mutual aid forces), and with emergency responders, public officials, other affected utilities, and the public. Following the recent storms and flooding, Staff observed improvement opportunities related to the utilities' communications with their electric counterparts, mutual aid crews, municipal officials, and in the transmission of outage-related data. Through the Best Practices in this category, Staff recommends that pipeline operators should focus on improving existing communications, such as including back-up methods of communication for instances when the primary means of communication is not functioning properly.

Under normal conditions, an important component of a pipeline operator's communication system is its SCADA (Supervisory Control and Data Acquisition) capabilities. These are automated systems that enable gas operators to monitor and control their systems from a centralized control room. The Best Practices in this category direct the pipeline operator to plan for the effects that severe weather events could have on the SCADA system, and to plan for the actions that would be taken, including the deployment of personnel to critical locations in order to directly monitor and operate the system (Best Practice 21).

Mutual Assistance (BP 22 - 27)

Mutual Aid refers to an inter-company system whereby utilities affected by emergencies receive assistance from other utilities in the restoration process. The assistance may be in the form of manpower, vehicles, or equipment. Depending upon the scale of the emergency, the assistance may come from utilities located in the same or neighboring states if the emergency is fairly localized, or from farther distances for larger scale events. For Superstorm Sandy, mutual aid crews ultimately came to New York State from as far away as California and Canada. The Best Practices in this category would direct the New York gas utilities to take full advantage of the mutual aid system.

One issue raised by Superstorm Sandy relating to mutual aid involved waiving the requirements for the operator qualification of individuals performing covered tasks on pipeline facilities. Our gas safety regulations require gas utility operators to have written procedures that prescribe the conditions under which persons may be qualified to perform

certain "covered tasks,"⁵ the oversight conditions under which individuals "not qualified" may perform a covered task, and the training necessary to become so qualified. These regulations add complexity to mutual aid situations because they restrict a utility's ability to use personnel to those trained to their own "home" utility's plan but not to the plan of the operator they will be assisting. The Best Practices in this category would direct the utilities to improve operator qualification in advance of storms and thereby strengthen restoration and diminish the need for the waivers.

Incident Command System (BP 28-30)

The Incident Command System (ICS) model was developed by the Federal Emergency Management Agency (FEMA) as a standardized, on-scene, all-hazards incident management approach. ICS is flexible and can be used for incidents of any type, scope and complexity. ICS allows its users to adopt an integrated organizational structure to match the complexities and demands of single or multiple incidents.

During Superstorm Sandy, not all pipeline operators followed an ICS structure, which led to some disorganized and inconsistent interactions with local emergency responders. Because roles and responsibilities did not always neatly translate between those operators functioning outside of ICS and the emergency responders using the ICS model, certain delays in reenergizing systems occurred. In an effort to better unify gas utility planning and storm response, the Best Practices in this category recommend implementation of the ICS model by each pipeline operator.

⁵ 16 NYCRR Part 255.604

Training (BP 31 - 36)

Pipeline operator training is an important tool in preparing for and rapidly responding to emergencies. Proper training not only helps to better define employee roles and responsibilities during an event, but speeds the restoration process because operators are better prepared to interact with local first responders and face the challenges of weather events. Many pipeline operators have already incorporated training programs into their Emergency Plans and regularly drill for varied weather events. However, the goal of the Best Practices in this category is to improve gas emergency training programs for all pipeline operators and include emergency response personnel in training opportunities.

Outage Management (BP 37 - 38)

"Outage Management" refers to systems and procedures to track the numbers and locations of customers that have interrupted service. Accurate information is important to manage the event, communicate effectively and ultimately minimize restoration times. During emergencies that lead to widespread customer outages, government officials, emergency responders, media, the public/customers rely on timely information on the status of affected customers. The affected utilities require this information themselves in order to efficiently deploy resources to restore service. Some electric utilities have well-developed Outage Management Systems (OMS) to track this type of information. The gas utilities currently lack comparable systems. The Best Practices in this category would direct the pipeline operators to improve current gas Outage Management Systems.

Sectionalizing Zones (BP 39 - 44)

"Sectionalizing" refers to dividing portions of a gas utility's distribution system into smaller segments that can be isolated from the rest of the system by closing pre-designated emergency valves, commonly referred to as "critical" valves. Improved sectionalizing plans are important because some gas utilities may be hesitant to actually implement shutdown plans if doing so would interrupt too many customers. Among other things, the Best Practices in this category would direct the gas utilities, when configuring these segments, to consider the type (critical care facilities - hospitals, schools, etc.) and number of customers within each segment, and how much time and manpower would be required to restore service in the event of shutdown.

Post Emergency (BP 45-46)

In order for pipeline operators to properly assess their own emergency preparedness and response to future weather events, it is necessary for them to develop procedures to evaluate lessons learned from prior events. The Best Practices in this category would require pipeline operators to evaluate their storm response, and to identify deficiencies in their emergency planning program, which includes measuring drill response against actual emergency response.

CONCLUSION

Recent wide-scale gas outages resulting from severe flooding have highlighted the need for the development and implementation of more comprehensive gas Emergency Plans. To this end, Staff has developed a set of Emergency Response Best Practices, which are attached as an Appendix to this order.

Through the further development of this case, we may identify additional Emergency Response Best Practices, or may

make modifications to or supplement those we identify here. Nevertheless, it is clear to us that the introduction of the Best Practices we have identified thus far should be encouraged. We anticipate that each gas pipeline operator subject to our 16 NYCRR Part 255 regulations will review the Best Practices we identify here and that their next Emergency Plan revision will incorporate the results of that review.

Our recent storm experience has also demonstrated that the impacts from storms may be felt most strongly by the gas utility's end-use customers. Thus, it is the gas utility which will likely face the most challenging emergency response and recovery circumstances.⁶ For this reason, we will require the gas utilities to take the implementation of the Best Practices identified in this order one step further. For gas utilities, we will require that they, like all pipeline operators, review the Best Practices. In addition, we will require that they revise and refile their Emergency Plans to incorporate these Best Practices into their current Emergency Plans within 60 days. If the gas utility concludes that a Best Practice should not be incorporated into its Emergency Plan or that it should be incorporated in a modified form, the Best Practice may be omitted or it may be modified before its incorporation, but the gas utility shall in this filing explain why this omission or modification is being made. Following an iterative process, we

⁶ For purposes of this ordering clause, "gas utility" shall mean Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Corning Natural Gas Corporation, KeySpan Gas East Corporation d/b/a National Grid, LI, The Brooklyn Union Gas Company d/b/a National Grid NY, National Fuel Gas Distribution Corporation, New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation d/b/a National Grid NGrid Upstate, Orange & Rockland Utilities, Inc., Rochester Gas & Electric Corporation, and St. Lawrence Gas Company, Inc. Other jurisdictional gas corporations shall work with staff to fulfill the goals of this order.

will seek comments from all interested parties concerning the Staff's Best Practices listed in the Appendix and any proposed modifications or additions to that list. At the conclusion of this process and after considering all of the comments received, we will finalize the Best Practices as technical guidance to clarify our gas Emergency Plan rules.

The Commission orders:

1. Each gas pipeline operator subject to the requirements of 16 NYCRR Part 255 shall review the Best Practices listed in the Appendix to this order, and determine which Best Practices are already or may in the future be incorporated in its current Emergency Plan filed pursuant to 16 NYCRR Part 255.

2. In addition, each gas utility, after completing the review described in Ordering Clause 1, supra, shall, in a filing to be made within 60 days of the date of this order:

- a. Identify each of the Best Practices listed in the Appendix to this Order which is already incorporated in its Emergency Plan or which the gas utility intends to incorporate in its Emergency Plan, and
- b. Identify each Best Practice in the Appendix to this Order that the gas utility concludes should not, at this time, be incorporated in its Emergency Plan or must be modified before it can be incorporated in its Emergency Plan.

If the gas utility concludes that a Best Practice identified in the Appendix should not be incorporated in its Emergency Plan or should be modified before it is so incorporated, the 60-day filing required by Ordering Clause 2 shall describe the reasons underlying such conclusions.

3. The Secretary in her sole discretion may extend the deadlines set forth in this order, provided that the request for such extension is in writing, includes a justification for the extension, and is filed on a timely basis, which should be on at least one day's notice prior to any affected deadline.

4. This proceeding is continued.

By the Commission,

KATHLEEN H. BURGESS
Secretary

Emergency Plan Best Practices**General Recommendations:**

1. Operators of natural gas pipelines need to incorporate in their emergency plans prompt and effective response to natural disasters that can be reasonably expected to occur within their service territories. Consideration should be given to different types of flooding (i.e. - storm surge, river flooding, water main breaks), wind events in which facilities, communications, and/or response may be disrupted, extreme snow events, etc. In addition, consideration should be given to the possibility of multiple disasters occurring concurrently (flooding plus high winds, etc.) or in rapid succession (ex: Hurricanes Irene and Lee)

2. An Emergency Plan must assure that the operator can assess and react properly to a notification from the public. This is typically accomplished with a series of questions asked by the individuals that receives the phone call to gain critical knowledge with response activities such as calling local emergency officials, dispatching personnel to the scene and giving instructions to callers.

3. The Emergency Plan needs to include procedures for receiving, identifying, and classifying notices of events which need immediate response.

4. The procedures should include instructions to employees to determine if there is a hazard at the scene, and should direct the employees to evacuate people first.

5. The procedures should include the types of equipment an employee responds with, their first steps to make the area safe, and the follow-up activities until help arrives, if necessary.

6. The manual must require applicable portions of the emergency plan to be available to supervisory personnel who are responsible for emergency action.

7. Appropriate portions of the plan must be readily accessible locally and, if distributed electronically, provision must be made for when network connectivity to headquarters is unavailable.

8. GPS should be used to mark locations of critical facilities such as regulators, pressure relief devices, and emergency valves so that they can be located quickly during emergencies, especially where above ground references may be underwater or may have been removed and/or damaged.

9. Hardening of the gas system should be considered. Considerations must include the raising of service regulator vent lines and station relief stacks above expected flood levels, moving/relocating critical facilities above flood levels, and the replacement and pressure uprating of leak prone facilities in flood zones to protect against water intrusion.

10. Where possible, utilities should coordinate with local Police departments prior to moving emergency personnel and vehicles into affected areas.

11. Locations of critical care customers and facilities should be known and efforts taken to provide uninterrupted service. For instances when continuation of uninterrupted service is not possible, priority should be given to restoration of these customers and facilities as quickly as possible.

12. The plan should have a list of equipment that will be needed at the scene of an emergency. This list should note the location where the equipment is stored/maintained and who is responsible for the deployment of such equipment. This list should also include the size and capabilities of local fire fighting and police forces.

Communications

13. A comprehensive communication plan should be incorporated or referenced in the emergency plan. The plan should include communication equipment availability and information that is to be communicated and the people with whom to communicate. The plan should include drills and tests of communications to be used during emergency events such as devices, phones, radios, etc and should include

backup communication plan/devices for instances where the primary plan/devices are not functioning properly. Consideration should be given to communications with mutual assistance resources.

14. The operator must have a communication system that can handle multiple emergency calls at once (don't want a caller to receive a busy signal).

15. The Emergency Procedures should describe the circumstances for which the police, fire and other public officials and first responders may be contacted before an emergency, during an emergency, and during the restoration process. Public officials could include the mayor, local emergency coordinators, state officials, and other officials that control railroads, roads, water, and electric grids. Information to collect and relay should be defined.

16. Emergency Procedures should assure a notification list is developed for all emergency contact personnel. Local contact numbers for emergency personnel that may be used in the event of an emergency should be included in the plan. These contacts and numbers must be kept current.

17. Emergency response planning should include liaison with owners of electric and other utilities in the vicinity of the pipeline system in order to preplan and coordinate response to pipeline emergencies. (ADB-05-03)

18. Operators should make reasonable attempts to meet face-to-face with public officials and owners of electric and other utilities and maintain an ongoing face-to-face liaison after the initial meeting. It is acceptable to use third parties to conduct meetings with appropriate public officials on behalf of the operators. However, the operator is ultimately responsible and must be engaged in these activities.

19. Pipeline operators should include external stakeholders in drills as much as possible. This should include emergency and first responders, as well as local and state public officials.

20. Pipeline operators should include use of social media to reach customers and other stakeholders (Facebook, Twitter, etc).

21. Specific actions to be taken during loss of communications with SCADA equipment, ROVs etc must be defined. This should include what, if any, facilities should be manned so that system attributes could be monitored and valves could be open/closed as needed.

Mutual Assistance

22. The operator should have a list of available personnel for emergency response. This should include personnel that are on-call after hours and the instructions that they are to follow once notified. Lists should include employees, retirees, and mutual assistance. This list should be kept current, including reviews of operator qualifications and drug and alcohol testing.

23. The plan should define benchmarks for determining when to request mutual assistance and include procedures for on-boarding mutual assistance, including providing necessary training, equipment, Personal Protective Equipment (PPE), procedures, standards, mapping, etc.

24. Consideration should be given to providing vehicles and equipment for crews that may arrive without their own because of distance from the emergency. This may help with mobilization and response times.

25. When possible, mutual assistance should be paired with corporate subject matter expert(s) to assure that procedure(s) and standards are followed.

26. Logistical concerns should be considered. At a minimum, this should include defining meeting and staging areas, as well as instructions for obtaining food, vehicles, fuels, and housing for out-of-town resources.

27. Regular Briefings of mutual assistance and emergency responders should take place. This should include any necessary training address any concerns seen during response and restoration.

Incident Command System

28. LDCs should consider implementing the FEMA's Incident Command System (ICS). All employees involved in emergency response should take and receive initial training in ICS system so that they are familiar with its use, terminology, and defined roles.

29. The ICS should be implemented as soon as possible - before the event if practicable (ex: forecasted hurricane).

30. Drills should be conducted using ICS so that all responders are familiar with roles, responsibilities, terminology. The frequency of drills should be defined. Benchmarks to measure the sufficiency of drills should be defined.

Training

31. The training program should address job/task analysis, program design, program development, implementation and training evaluation.

32. Individuals who normally receive calls for the operator should be appropriately trained to identify the situation, direct callers to seek safety first, and then gather critical information to promptly initiate the operator's response efforts.

33. Emergency training programs typically include mandatory initial employee training, with periodic individual refresher training. The operator should require and track individual employee training frequencies.

34. Emergency training should cover different levels of responsibility and complexity, including, as applicable to the operator, personnel from the control center, managers and/or supervisors, field personnel, patrol pilots, communications systems, SCADA, etc.

35. Emergency response authorities (first responders including police, fire departments, etc) and local, county and State government officials should be invited to participate in drills. These stakeholders should be asked to provide critiques and/or feedback.

36. Standardized response protocols, blending both Fire Department and gas utility industry best practices, should be developed for responding to each type of gas emergency event, including the following:

- (a) gas detected inside or near a building;
- (b) fire located near or directly involving a pipeline facility;
- (c) explosion occurring near or directly involving a pipeline facility; and
- (d) natural disaster

Outage Management

37. LDCs must develop a better system to manage outages and to better manage available resources so that the restoration process is systematic and the duration of interruptions of service is minimized.

38. Utilities need to provide more accurate and timely data, including number of potentially affected customers, number of actual customer outages, warning tags issued, and services restored.

Sectionalizing Zones

39. The plan should assure that the locations of emergency valves are identified on maps and records, and that emergency responders have access to them under all circumstances, such as during a power outage if the maps are in electronic format. Consideration should be given to using GPS readings to locate isolation valves and other critical facilities so that they can be located quickly during emergencies where above ground references may be underwater or may have been removed and/or damaged.

40. The emergency plan should describe the instructions and describe the circumstances in which the shutdown or isolation of the system are applicable. Consideration should be given to shutting down systems/services in areas that are prone to flooding or have been ordered to be evacuated.

41. LDCs need to review the physical characteristics that should be considered when establishing valve locations, including the size of area to be isolated, topographic features, such as rivers, major highways and railroads and the number of valves necessary to isolate the

area. Adjustments should be made as needed, including after post incident reviews

42. LDCs need to consider operating characteristics when establishing valve locations, such as the total number of customers and such customers as hospitals, schools, commercial, and industrial users that would be affected, the time required for available personnel to carry out isolation procedures, the time required for controlling the pressure in the isolated area by such means as venting and transferring gas to adjacent systems and the time required for available personnel to restore service to the customer. Adjustments should be made as needed, including after post incident reviews

43. Valves, including service line valves that are closed during emergency events, need to have a locking mechanism that prevents tampering and inadvertent use.

44. The plan should clearly describe circumstances necessitating the turn off of services. Consideration should be given to appliances, meters, and/or service regulators/vents that have been submerged so that gas is not supplied to appliances, meters, and/or service regulators that can malfunction because of flood/water damage.

Post Emergency

45. The manual should include procedures for reviewing employee activities to determine whether the procedures were effectively followed in each emergency. Appropriate changes to the emergency response training program should be made as necessary to ensure the program remains effective.

46. Critiquing the performance of emergency exercises/drills should be used to review performance, make appropriate changes, and verify that personnel maintain a thorough knowledge. All emergencies should be self-critiqued, with deficiencies identified, recommendations made, and appropriate follow-up taken.