

COLUMBIA GAS OF KENTUCKY, INC.
RESPONSE TO STAFF'S FIRST REQUEST FOR INFORMATION
DATED AUGUST 15, 2019

1. Refer to the application, paragraph 1. Provide a copy of all the information collected by Columbia Kentucky that was used in formulating a design and threat assessment. Also, provide a copy of the assessment created by Columbia Kentucky that resulted in the initiation of the low-pressure gas distribution system safety enhancement program (LP Program).

Response:

As a result of the over pressurization event that occurred in the Merrimack Valley in Massachusetts, NiSource experienced a fatality, several injuries and over 130 homes with significant damage. Additionally, the gas distribution system was damaged requiring the replacement of 45 miles of gas pipeline, 5,086 service lines, and the re-qualification of an additional 12 miles of pipeline. NiSource also had to restore 7,500 homes and businesses, including the procurement and installation of new appliances, boilers/furnaces, ranges, dryers and commercial equipment. During this time, approximately 2,200 families and 7,000 people were displaced

from their homes and supported through temporary housing for several weeks. Immediately following this event, NiSource began taking action to enhance the safety of its low pressure gas distribution systems across its seven state operating territory. NiSource developed a safety enhancement plan that was later reinforced by the Urgent Recommendations issued by the National Transportation Safety Board for all of NiSource's gas distribution companies, including Columbia. NiSource utilized components of this plan to complete the recommended actions in each of its jurisdictions to achieve closure of several of the recommendations.

Across its footprint, NiSource's low pressure gas distribution systems are in compliance and designed per federal code with regulator stations that have redundant control and monitor regulators; however, this design does represent a potential common mode of failure. To add additional protection to its low pressure gas systems, NiSource initiated a multi-step safety enhancement plan for low pressure gas distribution systems. The plan steps are: 1) installing additional over pressure protection in the form of automatic shut off valves at each regulator station on low pressure systems; 2) adjusting operating policies and procedures, as well as work practices to improve the safe operation of low pressure systems, as well as adding additional safeguards during construction; 3) enhanced damage prevention practices for low pressure regulator stations; 4) enhance system

knowledge of low pressure regulator stations obtained by field surveys; 5) in-field regulator control line marking and mapping; 6) additional protection and security measures around regulator control lines; and 7) modernization of low pressure systems across the NiSource footprint to include replacement of priority pipe, modernization of the regulator stations and the addition of remote monitoring by gas control of those systems.

Columbia currently operates 52 low pressure systems served by 204 regulator stations containing 515 miles and approximately 40,000 customers. Given the magnitude of the Merrimack Valley event, the losses and injuries experienced, the associated lessons learned and the monetary and community cost experienced during restoration and recovery, Columbia determined that the investment in this project of \$11.6 million was necessary and prudent to protect life and property of our customers and communities. Confidential documents related to the decision making process described above are contained on a flash drive in the attached envelope marked Confidential.

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2. Refer to the application, paragraphs 2 and 3. Confirm that projects included in Columbia Kentucky's Accelerated Main Replacement Program (AMRP) have historically not required a Certificate of Public Convenience and Necessity (CPCN). If confirmed, explain whether Columbia Kentucky maintains that a CPCN, or declaration that a CPCN is not required, will still be necessary if its proposal to expand its AMRP Tariff to include the LP Program is approved.

Response: Columbia confirms that projects included as part of its AMRP have historically not required a CPCN. If the requested amendment to Columbia's 2019 AMRP construction plan is approved to include the LP Program, Columbia maintains that a CPCN is not required. The Commission's Order in Case No. 2018-00281 creates uncertainty as to whether or not the Commission views the projects that it reviews and approves as part of an AMRP, or expanded and renamed SMRP (Safety Modernization and Replacement Program) as being subject to the new "two percent" standard.

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3. Refer to the application, paragraph 3. Provide examples of "other safety and regulatory compliance projects" that Columbia Kentucky may request to include in the proposed Safety Modification and Replacement Program Tariff (Tariff SMRP) in the future.

Response: Columbia does not have any specific examples in mind at this time of projects other than pipeline replacement type projects and the LP Program. As Columbia continues its SMS process, risks will continue to be identified and prioritized. This will result in identifying projects that address the most significant risk to our customers and our system. As projects are identified for inclusion in the SMRP in the future, Columbia will discuss them with the PSC.

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4. Refer to the application, paragraph 11.
 - a. Provide a copy of Columbia Kentucky's Safety Management System (SMS).
 - b. To the extent that it differs from Columbia Kentucky's SMS, provide a copy of the American Petroleum Institute's Recommended Practice 1173 (RP 1173).
 - c. Clarify the relationship between Columbia Kentucky's SMS and RP 1173.

Response:

- a. Columbia is currently in the process of finalizing its SMS standard and will provide a copy as soon as it is final.
- b. and c.** Columbia's safety management system standard is being developed to comply with all 10 elements and 231 requirements outlined in the American Petroleum Institute's recommended practice 1173. Much like

company policies and procedures are developed based on the requirements within Department of Transportation federal code, Columbia is developing its standard based on APIs standard. It will by design meet or exceed the minimum requirements as outlined by API 1173.

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5. Refer to the application, paragraph 14; and the Direct Testimony of Gary E. Sullivan (Sullivan Testimony) at page 28, lines 18-20. State whether Columbia Kentucky proposes to include the forecasted increase in operations and maintenance expense in the revenue requirement calculation of the proposed Tariff SMRP.

Response: Columbia is not requesting recovery of the forecasted increase in operations and maintenance expense in the revenue requirement calculation of the proposed Tariff SMRP for the LP Program due to the modest amount associated with the program. To the extent that operations and maintenance expense could represent a significant portion of future safety related investments, Columbia may request the recovery of both capital and operations and maintenance expense at that time.

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6. Refer to the application, paragraph 14; and Sullivan Direct Testimony, Attachment B. Provide an update of the costs incurred by Columbia Kentucky to date in connection with the LP Program. Provide the response in Excel spreadsheet format, with formulas intact and unprotected and all rows and columns accessible.

Response:

Please see Attachment A which is the updated Exhibit 6 of Columbia's Application, representing costs associated with the LP Program as of July 31, 2019. Columbia will provide monthly cost updates to the spreadsheet when available.

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7. Refer to the application, paragraph 21. If the LP Program does not have a material impact on Columbia Kentucky's financial condition, explain why the costs associated with this program should be recovered through the proposed SMRP Tariff.

Response: The Kentucky General Assembly enacted KRS 278.509 in 2005 for the purpose of expressly confirming a utility's ability to recover the fair, just and reasonable cost of its investments in natural gas systems. The statute does not include any minimum amount of investment which must be made in order for a utility to recover such costs. The public policy supported by KRS 278.509 is to: (1) provide an incentive for utilities to continuously improve their system through recurring, incremental improvements; (2) lessen the impact of base rate increases that would otherwise be more significant if recovery of such investments was delayed; (3) comply with the matching principle of ratemaking, which encourages timely recovery of prudently incurred costs, thereby avoiding generational inequalities; and (4) possibly delay the filing of base rate increases by a utility. So

long as the Commission finds that the cost of the LP Program – however immaterial to Columbia’s overall financial condition – are fair, just and reasonable, the Company is authorized to recover them through the statutory mechanism set forth in KRS 278.509.

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8. Refer to the application, paragraph 22. Clarify Columbia Kentucky's assertion that a difference exists between an immediate increase in rates and seeking recovery of 2019 expenditures on a lagged basis and future expenditures on a concurrent basis.

Response: Paragraph 22 of the application addresses one of the criteria set forth in 807 KAR 5:001 Section 15(3) for determining whether a project qualifies as an extension of a utility's system in the ordinary course of business. To clarify, Columbia is not proposing to change the cost recovery aspect of its AMRP tariff, which is the "rate" for purposes of this proceeding. Rather, Columbia seeks to expand the scope of the AMRP tariff to expressly include system safety enhancements such as the LP Program, thereby evolving the AMRP tariff to an SMRP Tariff. Expanding the scope of the current rate does not require changing the timing by which costs incurred pursuant to that rate are recovered. In fact, Columbia is proposing to maintain the same schedule for the expanded-scope SMRP tariff as it currently utilizes for the AMRP tariff. The fact that there is no

immediate cost recovery proposed in the application is evidenced by the lack of a change in the charges set forth on Columbia's Tariff Sheet No. 58.

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9. Refer to the Direct Testimony of David A. Monte, page 7, lines 8-11. Provide a copy of the NiSource SMS Policy and Standard. If NiSource has not yet established the policy, then provide the necessary information upon its completion.

Response:

Attached is NiSource's approved SMS policy. The SMS standard is currently in draft form awaiting approval. Once approved, a copy will be provided.



POLICY SUBJECT: **Safety Management System**

EFFECTIVE DATE: **March 5, 2019**

REVISED: **February 28, 2019**

NiSource Inc. and its subsidiaries (“NiSource” or the “Company”), in the interest of achieving and maintaining industry leading safety performance, adopt this policy to implement a Safety Management System (SMS).

It is recognized that SMS has broad applicability and value to the Company and all of its stakeholders. SMS processes and an emphasis on a robust safety culture will enhance organizational performance, promote a learning environment, and advance safety excellence across the Company.

I. Purpose

This document establishes the policy that governs SMS within the Company.

NiSource’s SMS is designed to align with the provisions of American Petroleum Institute Recommended Practice 1173, Pipeline Safety Management Systems (API RP 1173).

NiSource’s SMS is a structured, systematic program to evaluate internal and external information in order to identify potential threats, develop recommended courses of action to proactively manage and reduce pipeline safety risk, and promote organizational learning through the continuous improvement of NiSource’s safety practices, and the integrity of the NiSource gas systems.

The Company will work to strengthen and maintain a safety culture across its employee and contractor workforce that supports the elements of the SMS defined within this document.

II. Goal

The goal of this policy is to strengthen and sustain safety and operational excellence through organizational alignment around SMS processes that collectively reduce safety risk.

III. Scope

The SMS program is designed to mature through continuous improvement and will enhance all NiSource safety related programs. Elements of the NiSource SMS program are outlined in the NiSource SMS Standard and include the following;

1. Leadership and Management Commitment

Leadership and management will demonstrate support and commitment to the SMS. This commitment is essential to the success of the SMS and delivery of safety excellence.

2. Stakeholder Engagement

Internally, participation of employees and contractors is required to prevent safety issues. Externally, NiSource will partner and engage with regulatory and industry organizations to deliver safety excellence.

3. Risk Management



The SMS process will strengthen risk and data based decision making. This proactive approach will transition the Company's organizational decision making from detection and correction to a higher level of prevention.

4. Operational Controls

The Company will integrate operational controls into the SMS to help with the safe operation and maintenance of the infrastructure under all credible conditions and configurations.

5. Incident Investigation, Evaluation, and Lessons Learned

The Company will follow a process for investigation of significant operational and safety events, reportable incidents, and documented near-misses. This process will include systematically determining cause(s), developing recommendations, documenting the actions taken in response to findings, as well as updating the relevant risk assessment(s).

6. Safety Assurance

The Company will use audits, evaluations, peer performance, and data processing to measure progress toward effective risk management and improvement in operational and safety performance.

7. Management Review and Continuous Improvement

Leadership and management will periodically engage with, review, and challenge the progress toward operational and safety performance goals and mandate further action as necessary to ensure continuous improvement.

8. Emergency Preparedness and Response

Pipeline safety performance will include comprehensive preparation of prompt and effective emergency response.

9. Competence, Awareness, and Training

The Company will assist employees and contractors with their understanding of SMS and its policies and procedures so they are equipped to fulfill their requirements within the SMS. This will be accomplished through the use of initial and continuing SMS training.

10. Documentation and Record Keeping

The Company will maintain responsibility for the creation, revision, and retention of the documents and records associated with the SMS. This will foster accountability and traceability toward meeting SMS goals and objectives.

IV. Responsibilities

All NiSource employees and contract partners are expected to execute their specific SMS responsibilities that collectively create a positive safety culture and continuous improvement of safety performance.

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10. Refer to the Sullivan Testimony, page 15, lines 8-16; and Sullivan Direct Testimony, Attachment A. Explain why Work Package II and Work Package IV are not added simultaneously.

Response:

The primary purpose of the LP Program is to provide an additional layer of protection for our low-pressure customers. Work Packages II and IV involve the remote monitoring of our low-pressure systems. Due to resource availability and time constraints this work was planned in separate packages that may be worked sequentially or concurrently with other Work Packages.

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11. Refer to the Sullivan Testimony, page 16, lines 5-7. Explain where the monitoring devices added in Work Package IV are located on Columbia Kentucky's system.

Response:

Each system has one or more district stations supplying that system. Work Package IV installs one constant monitoring device per system. Engineering and System Operations collaborated on the optimum location for each monitoring device considering proximity to power sources and availability of space at existing sites.

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12. Refer to the Sullivan Testimony, page 16, lines 8-17.
- a. Describe the work that would be performed to implement the potential Phase II.
 - b. Explain how Phase II would eliminate or supplement the work performed in Phase I.

Response:

- a. As mentioned in my testimony on page 16, by-pass valves separate a higher pressure system from one operating at a lower pressure. They are locked when not in use and normally closed. Unfortunately, they are subject to minor leak-through. Over the years, Columbia has responded to risk of over-pressure from leak-through in three ways. Initially, Columbia installed small secondary relief valves in systems that had fewer than 100 customers to vent the gas that couldn't be absorbed by the customers. Additionally, double block and bleed by-passes that included two normally

closed valves and a vent to the atmosphere between the two were considered for new stations. In Columbia's more modern replacement designs, the by-pass valves are eliminated altogether. Each of those methods are mentioned in some manner in the recently published American Gas Association paper titled *Leading Practices to Reduce the Possibility of a Natural Gas Over-Pressurization Event*; however, Columbia still has numerous stations with legacy designs still in operation. For those LP stations, Columbia is considering removing the by-pass valves. That would involve taking the gas off the inlet and outlet side of the stations, removing the valve, and blind plating the flanged ends. One of the challenges with performing those tasks is to perform that work and maintain service to our customers.

- b. Phase II would not eliminate the need for the Phase I work, but it would supplement Work Package III. While Work Package III takes care of minor by-pass valve leak through, it's unlikely to adequately protect against malicious mischief.

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13. Refer to the Sullivan Testimony, page 20, lines 10-12. Explain how the reprioritized projects affected the 2019 AMRP construction plan.

Response:

Columbia added a project named Sword Street AMRP to the 2019 Capital Plan. This project is located in Ashland and is currently underway. It involves installing approximately 2400 feet of 2" plastic medium pressure pipe and retiring a single station and about 3000 feet of bare steel pipe along with the conversion of 60 services to medium pressure. The other project that was added to the plan is the 8th Street AMRP. It is also located in Ashland and consists of installing 669 feet of 2" plastic medium pressure pipe and retiring 196 feet of low pressure bare steel pipe, one low pressure station, and converting 5 customers to medium pressure. This project is expected to start later in 2019.

The two projects described above were substituted for a portion of the Bellefonte Princess AMRP because it presented an opportunity to eliminate two

low-pressure stations for a project where we were having difficulties obtaining a state permit for the work on KY RT 5 (Bellevue Princess Road).

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14. Refer to the Sullivan Testimony, page 23, lines 7-11. Explain whether Columbia Kentucky's current AMRP will upgrade the remaining 369 miles of non-plastic main contained in Columbia Kentucky's low-pressure systems. If not, provide the number of miles of low-pressure system mains that Columbia Kentucky currently anticipates to be replaced through the AMRP.

Response:

Columbia currently anticipates replacing approximately 221 miles of the remaining bare steel and cast iron low pressure pipe as part of the AMRP. There are approximately 140 miles of cathodically protected steel pipe that Columbia currently does not plan to replace, but could be upgraded to medium pressure if future business or customer needs develop.

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15. Refer to the Sullivan Testimony, pages 24-27. Provide a cost-benefit analysis of the options that Columbia Kentucky considered to add over-pressure protection to its low-pressure systems.

Response:

Columbia's low pressure gas distribution safety enhancement plan includes the installation of an additional level of over pressure protection on low pressure systems. Instead of a cost-benefit analysis, a functionality analysis was conducted where Columbia evaluated several options including: the installation of automatic shut off valves at each regulator station, the installation of shut off valves at customer residence, and the installation of full relief valves at every station. This analysis included examining the threats mitigated by each option such as control line failure, compound regulator failure, bypass valve leak through, bypass valve human error, and venting large volumes of gas.

The best value solution was determined to be the installation of automatic shut off valves at each regulator station. Columbia determined that the installation of full relief valves presented construction difficulties and required more time to acquire additional land rights and space, obtain permitting to allow for the installation of the valve, and the safety and environmental considerations associated with the potential large gas releases at regulator station sites distributed throughout a community. For the majority of our stations the installation of the automatic shut off valves proved to be the best option as it could be retrofitted into the existing set rather than rebuilding the entire station. This allowed for a much more timely installation to protect customers, at much less cost than would have occurred with large station rebuilds. The evaluation of installing shut off devices at customer's homes only proved cost-efficient for gas systems with a small number of customers.

NiSource also evaluated several vendors for this equipment. The only vendor able to provide sufficient quantities of equipment for the project, was also the vendor with the best industry quality record.

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16. Refer to the Sullivan Testimony, page 27, lines 3-9. Provide the three practices fulfilled by installing an automatic shut-off regulator.

Response:

The three practices identified in the AGA white paper *Leading Practices to Reduce the Possibility of a Natural Gas Over-Pressurization Event* that the LP Program addresses are: it provides additional over-pressure protection, it eliminates a common mode of failure, and the ASV sensing lines will be protected and located close to or inside the station.

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17. Refer to the Sullivan Testimony, page 27, lines 15-16. Explain how the LP Program will enable Columbia Kentucky to retire some low-pressure stations sooner than would otherwise be the case.

Response:

Low pressure systems are designed and operated so they deliver the minimum required pressure to each customer while not exceeding a safe operating pressure. Columbia's tariff specifies a minimum delivery pressure of 7" w.c. at the outlet of the meter. Columbia's experience with its existing equipment has found that setting LP stations to operate at 10.5" w.c. usually fulfills those two requirements; however, on occasion, it has been found that raising the outlet pressure to 11 or 12" w.c. under peak operations is necessary.

LP Stations may be retired through the AMRP when a sufficient number of low pressure customers are converted from the low pressure piping to medium pressure.

An LP piping system having an ASV installed at each station will have the control regulator set at 12" w.c. instead of 10.5". The monitor will be set above that with sufficient difference to ensure stability. Between the ASV and remote monitoring, a closer tolerance on the maximum safe pressure delivered to the customers is ensured. The operating difference between the 10.5" and 12" w.c. set point is expected to allow for the reduction of stations since the higher set point raises the overall minimum system pressure thus requiring fewer stations to supply the minimum.