3550 Johnny Appleseed Court Columbus, Ohio 43231

Direct: 614.818.2110 rrsmith@nisource.com



A NiSource Company

August 9, 2019

Mr. Peter Chace Manager of Gas Pipeline Safety Section Public Utilities Commission of Ohio 180 East Broad Street Columbus, Ohio 43215

RE: Columbia Gas of Ohio, Inc. Notice of Probable Noncompliance

Dear Mr. Chace:

• ;

This letter responds to your Notice of Probable Noncompliance (NOPN) dated July 12, 2019.

Findings of Probable Noncompliance:

192.623 Maximum and minimum allowable operating pressure: Lowpressure distribution systems. (a) No person may operate a low pressure distribution system at a pressure high enough to make unsafe the operation of any connected and properly adjusted low pressure gas burning equipment.

> Columbia Gas of Ohio over-pressured a low pressure system in Zanesville, Ohio. The pressure exceeded the maximum safe operating pressure to 562 customers with natural gas burning appliance(s). Please describe actions taken by Columbia Gas of Ohio to assess the low pressure system and customer appliances for damage and any corrective action taken. Please also describe actions Columbia Gas has taken or is taking to determine the root cause of this over-pressurization and prevent future recurrences, including any changes made to procedures, training, business rules and practices, etc.

Columbia's Response:

-

Columbia Gas of Ohio took several steps to remediate its low-pressure ("LP") system. Columbia inspected all of its mains and service lines in the affected area for leaks. Columbia removed fourteen gallons of oil from its low-pressure mains and inspected both regulator stations feeding the system. Columbia also modified both regulator stations by installing a gasket strainer, a partial pressure relief valve, and regulators with integrated automatic shut off valves.

Columbia assessed customer appliances for damage. Columbia pressure tested all affected customer-owned house lines to the appliance regulators/controls to ensure these facilities were not leaking. Columbia also tested customers' appliance controls to determine whether they were operating as designed by testing manifold pressures or clocking the input on the appliance by using a gas meter. Columbia also checked all appliance controls to ensure the outlet pilot tubing was not leaking. In addition to these steps, Columbia inspected each appliance for fire/heat damage, and checked each appliance's flame characteristics, draft, operation, venting, and ventilation. Finally, Columbia repaired any leaks found and corrected appliance deficiencies.

Columbia temporarily paused work on its installation of LP overpressure protection devices. While the work was paused, Columbia created new work rules and a check list for the LP overpressure protection program, attached as Attachment A and Attachment B, respectively. In addition, a new Operational Notice ("ON") has been issued to address similar risks for work performed at M&R stations that are not associated with the LP overpressure protection program. The ON is attached as Attachment C.

Columbia continues to look into the root cause of this incident. Preliminary results from this investigation have concluded that the over-pressurization was caused by human error.

As Columbia continues to take steps to make its system safer, Columbia will be installing technology on its low pressure regulator stations that will communicate with Columbia's gas control room when there is an over- or under-pressurization. On its low pressure stations Columbia will also be installing regulators with integrated automatic shut off valves.

192.803

Definitions.

Abnormal operating conditions means a condition identified by the operator that may indicate a malfunction or a component or deviation from normal operations that may:

(a) Indicate a condition exceeding design limits; or

(b) Result in a hazard(s) to persons, property, or the environment.

A Columbia Gas of Ohio employee did not recognize an abnormal operating condition ("AOC") when performing covered tasks on a low pressure regulator station in Zanesville, Ohio. The employee performed work on a low pressure regulator station involving taking backup overpressure protection off line and failed to restore the system to its proper configuration upon completion of work by leaving a pressure regulator control line valve in the closed position. Failure to recognize this abnormal operating condition caused a maximum allowable operating pressure excursion on a low pressure system.

Columbia's Response:

Columbia Gas of Ohio continues look into the root cause of this incident. Preliminary results from this investigation have concluded that the overpressurization was caused by human error, and was not caused by a lack of knowledge, skills, or ability. Therefore, Columbia temporarily suspended the operator qualifications of the individual whose error caused the incident in accordance with Columbia's OQ Plan. As Columbia continues to take steps to make its system safer, Columbia is now requiring a second qualified individual to be onsite for all LP over-pressure protection project work.

Should you have questions or need additional information please contact me at (614) 818-2110.

Sincerely,

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Rob Smith Operations Compliance Manager Columbia Gas of Ohio, Inc.

Additional Work Rules

These requirements must be communicated to all Columbia employees working on the LP - OPP prior to continuing work. Knowledge transfer of these requirements will be captured on a batch sheet and retained by the project manager.

M&R techs and Coordinators/Inspectors assigned to the LP - OPP project shall retain a copy of these requirements and must be able to produce during QA/QC audits.

The monitor swap outs must be planned for completion in one continuous visit to the site. If circumstances dictate that a setting must be left prior to the completion of the work:

- The local M&R leader must give their approval.
- The Coordinator/Inspector shall notify the Project Manager that the setting will be left off.
- If the setting is left prior to completion, the downstream pressure shall be monitored for a minimum of 30 minutes prior to the M&R tech and bypass person leaving the job site.

A second M&R tech or qualified bypass person shall be on all job sites even if the setting can be shut it. The second person shall be responsible for monitoring downstream pressure during the duration of the work.

Prior to placing a setting into operation, both the monitor and control sensing lines must be visibly inspected for the presence of fluid.

After a setting is placed back into operation, the qualified M&R tech and the bypass tech shall monitor the downstream pressure for a minimum of 30 minutes prior to leaving the station.

After the qualified M&R tech has placed setting into operation, both the qualified M&R tech and the bypass person shall verify and document that the inlet and outlet block valves are open, the bypass valve is closed and locked/secured, and the sensing line valves are fully open.

Project Scope Change

Additional safety measure are being added to the modifications to LP stations. Going forward as a part of the LP-OPP program, LP above ground stations will include the

installation of 1" non-primary relief valves if a non-primary relief valve is not already in place. If LP settings are in pits/vaults or in a location where the installation of a non-primary relief valve is not practical, M&R leadership will consult with M&R design for alternative options. M&R design will identify the appropriate equipment and communicate the standard to the Project Managers so material can be ordered. Monitor swap outs will continue as scheduled.

Monitor Swap-Out Checklist

	der Number:	Job	Date:
		PRINTED NA	
	M&R Tech:	tor:	Inspector:
		Person:	Bypass Person:
			بالكريم المسالي
ocument completion.	ch must sign each task to doo	Coordinator/Inspector and M&R	The Coordinato
hat was performed.)	nt the observation of the task that	lual signature requirement is to docui	(The dual signatur
		b Brief/Construction Review	Pre Job Brief/Cons
	M&R Tech:	tor:	Inspector:
		Manifold on Monitor Sensing Line	Install Manifold or
	M&R Tech:	tor:	Inspector:
	SV Regulator	ce Monitor Regulator with PF Monitor	Replace Monitor R
		al # 1	DE Coriol # .
		ai#:	PF Serial # :
	M&R Tech:	tor:	Inspector:
		Gasket Strainer	Install Gasket Stra
	M&R Tech:	tor:	Inspector:
	M&R Tech:	tor:	Inspector:

Monitor Swap-Out Checklist

M&R Tech verifies that no liqu	id is present in existing sensing lines for both the monitor and control
regulators	Her:
	BANAN GERMAN
	\$109 T.R.EM
Inspector:	M&R Tech:

Run New Tubing to PF Mor	nitor/ASV Regulator and ER350 (Plug Sensing Line if	ER350 is not Available)
Inspector:	M&R Tech:	
an a		

Installation of a Nor regulator swap out)	1-Primary Relief Valve (sign o	off only required if NPRV is	installed during the
	NPRV Not Installed		
Inspector:		M&R Tech:	
	1		

Place Settng in Operation		
Inspector:	M&R Tech:	

M&R Tech will Set Pressure o	on Monitor Regulator at 14" wc	
		· 2 ·
Inspector:	M&R Tech:	

M&R Tech will Verify/Set Pressure on ASV is at 20" wc and 4.5" wc

Attachment B

Monitor Swap-Out Checklist

Inspector:	M&R Tech:	
M&R Tech will Set Pressur	e on Control Regulator at 12" wc	
Contraction of the		
Inspector:	M&R Tech:	
M&R Tech will Perform Po	int-by-Point ER350 Activation (sign off only required if	installation of the
ER350 occurs during regula	ator swap out)	
	ER350 Not Installed	
Inspector	M&P Toch	
	Wiak Tech.	-
		an fan de skeler af skylenne an an an de skylenne ar sen ar en an ar de skylenne ar
M&R Tech Updates (by ha	nd) existing Station Isometric Sketch (Updated Sketch is	Left on Site)
Inspector:	M&R Tech	
M&R Tech Updates (by ha	nd) existing Station Inventory Record Card (Updated IRC	C is Left on Site)
Inspector:	M&R Tech:	
		n ga kan kan kan kan kan kan na sa ka sa sa sa sa kan kan kan kan kan kan kan kan kan ka
Inspector will Gather all Re	equired Information Identified in Capital Close Out Chec	:klist
Inspector:	M&R Tech:	

Monitor Swap-Out Checklist

Inspector will Photograph	and Email Updated Sta	tion Isometric Sketch to Engi	neer to Update in CAD
(Must Include Station Pren	nise #)		
nspector:		M&R Tech:	
	alaan laan ah		
		Demonstration of the state of the second sec	und autilat black unburg
Prior to leaving job site the	e war lech and Bypass	s Person will verify the inlet a	ind outlet block valves
ire open			
	Time Verified		
∕I&R Tech:		Bypass Person:	
Prior to leaving job site the	Ni&R Tech and Bypass	s Person will verify the that t	ne sensing line valves for
he monitor and control re	gulators are fully open	•	
	Time Verified	shipennal entration	
M&R Tech:		Bypass Person:	
Prior to leaving job site the	M&R Tech and Bypas	s Person will verify the that t	he bypass valve is closed.
		•	
	Time Verified		
∕I&R Tech:		Bypass Person:	
rior to leaving job site the	M&R Tech and Bypas	s Person will monitor outlet p	pressure for a minimum
of 30 minutes.			
Observation Start Time		Observation Fred Time	
Observation Start Time		Observation End Time	
VI&R Tech:		Bypass Person:	





Operational Notice

Distribution Operations

Issue Date: 05/23/2019
Supersedes: N/A
GS Team Reassess By: 12/31/2020

Additional Requirements for Pressure Modifications or Shutdown/Startup Operations at Regulator Stations

Notice Number ON 19-05

Page 1 of 3

Companies Affected:

⊠ NIPSCO	⊠ CVA	
	⊠ CKY	⊠ COH
	⊠ CMA	⊠ CPA

Summary

This Operational Notice (ON) supplements the existing requirements of the applicable versions of the following gas standards. This ON applies to all regulator stations regardless of MAOP that are under the purview of the M&R or GM&T departments.

- GS 1750.010 "Pressure Regulating Station Operation and Maintenance"
- GS 1750.020 "Inspection and Maintenance of Delivery Station Regulators"
- GS 1750.210 "Inspection and Maintenance of Heaters"

GS 6400.030 "Installation and Operations Requirements for Large Volume CAB and GMB Meter Set Assemblies"

GS 6400.180(CG) "Bypassing of Measuring Stations"

For the purpose of this ON, a "**regulator station**" includes pressure regulation plus any combination of meter, control instruments, control lines, recording pressure devices, heater, valves, strainers/filters, enclosures and ventilating equipment, and any piping. Unless otherwise stated, a "**regulator station**" includes a "**customer M&R station**."

A "**customer M&R station**" impacted by the requirements of this ON is one under the purview of the M&R or GM&T departments and that has monitor and control regulators with control lines to one or both regulators.

Types of Work Impacted

For the purpose of this ON, "**qualified**" means that the personnel are Operator Qualified to perform the tasks at hand (e.g., inspecting or operating pressure regulating stations, operating a bypass).

This ON applies to the following types of work at a regulator station.

- a. Pressure modification (e.g., adjusting a regulator to increase or decrease pressure).
- b. Shutdown or startup of a regulator station.
 - NOTE 1: **"Shutdown of a regulator station**" means closing values to stop gas flow through the regulator station, either permanently or temporarily.
 - NOTE 2: "Startup of a regulator station" means placing a station into operation or back into operation, activating a parallel regulator setting in a dual-run regulator station, or activating a bypass regulator to control downstream pressure.
- c. Placing a regulator station on bypass.
- d. Opening or closing valves (e.g., shutting off a catalytic heater) at a regulator station.

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Operational Notice

Distribution Operations

Issue Date: 05/23/2019
Supersedes:
N/A
GS Team Reassess By: 12/31/2020

Additional Requirements for Pressure Modifications or Shutdown/Startup Operations at Regulator Stations

Page 2 of 3

Additional Personnel Required

In order to enact the additional required actions listed in the section below, at least two (2) qualified personnel are required when the work involves the following.

- a. Shutdown of a regulator station, which does not include a parallel regulator run that can remain in operation or be placed into operation.
- b. Operating the bypass valve of a regulator station to control pressure (i.e., bypass does not include a regulator) in order to install or replace components or perform operations and maintenance (O&M) activities.

The 2nd qualified person shall be responsible for monitoring downstream pressure throughout the duration of the work.

Additional Actions Required

The following additional actions shall be incorporated into the job planning and job tasks for the types of work impacted by this ON.

LP Regulator Stations Only (not including customer M&R stations):

When planning modifications to LP regulator stations, the planned work shall include the installation of a 1-inch non-primary relief valve (i.e., NPRV) if secondary relief (i.e., NPRV or internal relief valve) doesn't already exist. The purpose of this requirement is to be alerted to or to avoid a potential overpressurization of a low pressure piping system due to leak through of a bypass valve.

- NOTE 1: Emergency modifications to an LP regulator station will require follow-up installation of a 1-inch NPRV (if secondary relief doesn't already exist) promptly after the emergency is made safe. "**Promptly**" means taking action (e.g., order material, schedule resources) as soon as possible after the emergency is made safe and until the work is completed.
- NOTE 2: For LP regulators located in vaults or for locations that are not feasible for the installation of a NPRV (e.g., under electric transformer), contact the Design Engineering Team for assistance identifying other options. The installation of a 1-inch NPRV may be deferred with the approval of the Manager Field Engineering.

All Regulator Stations (including customer M&R stations):

The following additional steps are required when working on any regulator station, regardless of outlet pressure.

- a. All regulator station modification steps shall be planned for completion in one continuous visit to the site. If circumstances dictate that a regulator station must be left unattended with no qualified M&R (or GM&T) personnel monitoring the downstream pressure of regulator station prior to the completion of the work, the following steps are required.
 - i. The local M&R/GM&T leader shall be contacted to discuss the proposed plan and his/her approval shall be obtained prior to leaving the regulator station unattended.

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Operational Notice

Distribution Operations

	Issue Date: 05/23/2019
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ſ	GS Team Reassess By: 12/31/2020

Additional Requirements for Pressure Modifications or Shutdown/Startup Operations at Regulator Stations

Notice Number	
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- ii. If the project is being completed by the Project Management Team, the Coordinator/Inspector shall notify the Project Manager that the regulator station will be left shutdown and unattended.
- iii. The downstream pressure shall be monitored for a minimum of 30 minutes prior to the M&R technician and Coordinator/Inspector, if applicable, leaving the job site.
- b. Prior to placing a regulator station into operation (i.e., startup), both the monitor and control sensing lines must be inspected for the presence of fluid. If fluid is found, refer to HSE 4400.050 "Pipeline Liquids Management."
- c. After placing a bypass regulator into operation to perform work on a regulator station, the qualified person shall monitor the downstream pressure for a minimum of 30 minutes prior to beginning the work if downstream pressure cannot be monitored, either by the same qualified person or by a 2nd qualified person, while doing the work.
- d. The downstream pressure of a regulator station shall be monitored for a minimum of 30 minutes* by the qualified M&R (or GM&T) personnel and the 2nd qualified person (if required per "Additional Personnel Required" above) for the following types of work at a regulator station.
 - i. After a pressure modification (e.g., adjusting a regulator to increase or decrease pressure).
 - ii. After the shutdown or startup of a regulator station.
 - iii. After opening or closing valve(s) (e.g., shutting off a catalytic heater) at a regulator station.
 - *NOTE: The 30 minute monitoring timeframe is a minimum requirement. Local Operations Leadership may determine additional monitoring is required due to flow conditions or may determine that flow creation is necessary to ensure that the regulator station is controlling the downstream pressure as intended.
- e. After the qualified M&R personnel has placed a regulator station into operation (i.e., startup), both the qualified M&R personnel and the 2nd qualified person (if required per "Additional Personnel Required" above) shall verify and document the following in the Company's work management system (i.e., WMS or Maximo, as applicable).
 - i. The inlet and outlet block valves are open.
 - ii. The bypass valve is closed and secured. The bypass valve shall be locked if it is not secured within a locked building or fence. If the bypass valve is located inside of a locked building or fence, locking the bypass valve is preferred.
 - iii. The sensing line valve(s) are fully open.

If there are any questions, please contact Christine Maynard, Senior Standards Engineer (phone 614-460-6990 or email <u>cmaynard@nisource.com</u>) or Lee Reynolds, Manager Gas Standards (phone 614-460-5546 or email <u>lreynolds@nisource.com</u>).

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Summary: Staff Report of Investigation Exhibit 6 electronically filed by Mr. Thomas E Stikeleather on behalf of PUCO Staff.