UTILITIES DEPARTMENT
Engineering

CITY OF
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October 10, 2019

Dustin Hubbard
Director, Western Region
Pipeline and Hazardous Material Safety Administration
12300 W. Dakota Avenue, Suite 110
Lakewood, CO 80228

Re: Notice of Amendment; CPF 5-2019-0023M

Dear Mr. Hubbard:

This letter responds to the Pipeline and Hazardous Material Safety Administration's (PHMSA) Notice of Amendment (CPF 5-2019-0023M) dated September 3, 2019, resulting from the PHMSA inspection conducted by the California Public Utilities Commission (CPUC) on August 13 through August 16, 2018. The City of Palo Alto (CPA) has amended its Operations and Maintenance, Emergency Response and Public Awareness plans and procedures, pursuant to Title 49 Code of Federal Regulations (CFR) Part 190.237, "Amendment of plans or procedures", regarding the followings items identified in PHMSA's CPF 5-2019-0023M Notice of Amendment:

Item 1. 192.605 Procedural manual for operations, maintenance, and emergencies.

(a)...
(b) Maintenance and normal operations...
(1)...
(4) Gathering of data needed for reporting incidents under Part 191 of this chapter in a timely and effective manner.

CPA Response (Item 1):

The CPA has updated its Operations and Maintenance Manual to include Section 6, "Gas Emergency Response Plan". Section 6.8, "Accident Investigation and Reporting" now includes:

a. the required procedures to report incidents to the National Response Center pursuant to 191.5,
b. the 30-day time limit for incident reporting pursuant to 191.9, and
c. a process for submitting supplemental reports pursuant to 191.9.

In addition, the CPA has included in Section 1.1, "Introduction" the processes to report events to PHMSA per 191.22(c). Please see attached sections.

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Item 2. 192.605 Procedural manual for operations, maintenance, and emergencies.

(a)...
(b) Maintenance and normal operations...
(1)...
(8) Periodically reviewing the work done by operator personnel to determine the effectiveness, and adequacy of the procedures used in normal operation and maintenance and modifying the procedures when deficiencies are found.

CPA Response (Item 2):

The CPA has included procedures in its Operations and Maintenance Manual to periodically review the work done by operator personnel to determine the effectiveness and adequacy of the procedures used in normal operation and maintenance, and to modify the procedures when deficiencies are found. This review is conducted during Supervisor work site reviews completed periodically throughout the year, but at least once each calendar year. In the event modifications to the procedures are found, they will be documented through an online form used by CPA; see Section 1.5 "O&M Work Review".

Item 3. 192.615 Emergency Plans.

(a) Each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:
(1)...
(3) Prompt and effective response to a notice of each type of emergency, including the following:
(i) Gas detected inside or near a building
(ii) Fire located near or directly involving a pipeline facility.
(iii) Explosion occurring near or directly involving a pipeline facility.
(iv) Natural disaster.
(5) Actions directed toward protecting people first and then property.
(7) Making safe any actual or potential hazard to life or property.

CPA Response (Item 3):

The CPA has updated its Operations and Maintenance Manual to include Section 6, "Gas Emergency Response Plan". Section 6.4, "Action to be Taken" has been updated to include the required procedures for prompt and effective response to different emergency situations. In addition, Section 6.7, "Protecting Life and Property" has been updated to specifically include protecting people first and then property during an incident.

Item 4. 192.605 Procedural manual for operations, maintenance, and emergencies.

(a)...
(b) Maintenance and normal operations.
(1) Operating, maintaining, and repairing the pipeline in accordance with each of the requirements of this subpart and Subpart M of this part.

CPA Response (Item 4):

The CPA has updated it's Operations and Maintenance Manual to include steps to purge pipelines less than 2 inches in diameter and lengths of pipe less than 600 feet. CPA does not have pipelines greater than 12 inches in diameter, therefore does not have procedures to purge pipelines greater than 12 inches in diameter; see Section 3.2, "Startup, Shutdown, Purging". In addition, CPA has updated its Operations and Maintenance Manual to include an option to assign alternative valves when key valves are found to be broken, inoperable, or inaccessible; see Section 4.12, "Key Valve Inspection and Maintenance".

Item 5. 192.285 Plastic pipe: Qualifying persons to make joints.

(a) No person may make a plastic pipe joint unless that person has been qualified under the applicable joining procedure by:
(1) Appropriate training or experience in the use of the procedure; and
(2) Making a specimen joint from pipe sections joined according to the procedure that passes the inspection and test set forth in paragraph (b) of this section.
(b) The specimen joint must be:
(1) Visually examined during and after assembly or joining and found to have the same appearance as a joint or photographs of a joint that is acceptable under the procedure; and
(2) In the case of a heat fusion, solvent cement, or adhesive joint;
(i) Tested under any one of the test methods listed under 192.283(a), or for PE heat fusions joints (except for electrofusion joints) visually inspected and tested in accordance with ASTM F2620-12 (incorporated by reference, see 192.7) applicable to the type of joint and material being tested;
(ii) Examined by ultrasonic inspection and found not to contain flaws that would cause failure; or
(iii) Cut into at least three longitudinal straps, each of which is:
(A) Visually examined and found not to contain voids or discontinuities on the cut surfaces of the joint area; and
(B) Deformed by bending, torque, or impact, and if failure occurs, it must not initiate in the joint area.
(c) A person must be re-qualified under an applicable procedure once each calendar year at intervals not exceeding 15 months, or after any production joint is found unacceptable by testing under 192.513
(d) Each operator shall establish a method to determine that each person making joints in plastic pipelines in the operator's system is qualified in accordance with this section.

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CPA Response (Item 5):

The CPA has updated it's Operations and Maintenance Manual, Section 4.8, "Plastic Fusion Procedure" by removing "Persons not making any fusions during the 12 month period or if 3 fusions or 3%, whatever is greater, are found to be unacceptable by pressure tests or visual inspection must be requalified" and replacing with "Persons making fusions found to be unacceptable by pressure tests or visual inspection must be requalified".

Item 6. 192.616 Public Awareness

(a)...
(b) The operators program must follow the general program recommendations of API RP1162 and assess the unique attributes and characteristics of the operator's pipeline and facilities.
(i) The operator's program documentation and evaluation results must be available for periodic review by appropriate regulatory agencies.

CPA Response (Item 6):

The CPA has updated its Public Awareness Program to include the procedures used to evaluate and track its effectiveness. The program includes the evaluation mechanism of third party phone and online surveys, and explains how the results guide outreach efforts moving forward. Also specified, is the inclusion of procedures to measure the effectiveness of the Public Awareness Program upon public officials, emergency responders, excavators and locators. See CPA Public Awareness Plan – Measuring Effectiveness of Program.

Please do not hesitate to contact me at 650-496-6981 or dean.batchelor@cityofpaloalto.org if you have any questions.

Sincerely,

for

Dean Batchelor
Director Utilities

1. General

1.1. Introduction

General	Approval Date: 12/04/2018
Revision date: 08/29/2018	Supersedes: 1/30/2018

Scope and Purpose

This Operation and Maintenance (O&M) Manual represents the general policy and intent of the City of Palo Alto, Utilities Department (CPAU), for compliance with the requirements of Federal Pipeline Safety Regulations, 49 CFR, §191, §192. For compliance with §199 refer to the City of Palo Alto's Natural Gas Pipeline Personnel Anti-Drug and Anti-Alcohol Program (policies and procedures 2-19) administered by Human Resources department.

Responsibility

The CPAU Water, Gas, Wastewater (WGW) Operations Manager is responsible for keeping this manual at all locations where operation and maintenance activities are conducted.

System Description

CPAU owns, operates and maintains natural gas distribution piping facilities that deliver gas to approximately 23,000 customer gas meters. Gas is supplied to the City of Palo Alto from Pacific Gas and Electric Company (PG&E) to the four CPAU gas receiving stations. Maps of these gas receiving stations are located in Appendix B, System Plats and Maps. Delivery pressures from PG&E vary between forty-five to sixty (45–60) psig. CPAU regulates gas pressures and delivers gas to the distribution system between twenty-two to twenty-four (22–24) psig, depending on system demand. The only exception is Gas Station 3, which normally operates at thirty five to thirty nine (35-39) psig and distributes gas to the piping system downstream of the VA Hospital. System pressures are monitored by use of telemetered pressure signals from transmitters located at the Gas Receiving Stations and in remote areas of the distribution system at the points of lowest system pressures. Pressures are monitored at all four gas stations and the six odorant test stations (see section 4.17).

The distribution system is composed of schedule 40 Grade B steel with a tar coating wrapped with Royston™ tape, Polyethylene piping (2406/2708 MDPE), Polyvinylchloride (PVC) piping, and Acrylonitrile butadiene styrene (ABS) plastic piping based on the City of Palo Alto Annual Report for calendar year 2017, as follows:

Steel Length	Diameter	Coating Type
37.910 Miles	≤ 2 Inches	Tar / Royston™
16.506 Miles	>2 – 4 Inches	Tar / Royston™
6.427 Miles	>4 -8 Inches	Tar / Royston™
2.388 Miles	>8 – 12 Inches	Tar / Royston™

Polyethylene Length	Diameter
54.74 Miles	≤ 2 Inches
24.37 Miles	>2 – 4 Inches
31.27 Miles	>4 -8 Inches

Polyvinylchloride Length	Diameter	Schedule
22.33 Miles	≤ 2 Inches	40
11.58 Miles	>2 – 4 Inches	40
2.2 Miles	>4 -8 Inches	40

ABS Length	Diameter
.011 Miles	≤ 2 Inches
.015 Miles	>2 – 4 Inches
0.12 Miles	>4 -8 Inches

System total is approximately 210.118 miles of gas main.

All new distribution piping and connections are leak tested to a pressure of at least 100 psig, with the exception of connections to ABS or PVC mains as noted in Design and Construction section 2.4, Facility Leak Test Requirements.

New polyethylene piping segments are installed with a #10 AWG 45 mil HDPE polyethylene coated solid copper conductor wire to facilitate locating. Older polyethylene piping segments were installed with a multi-stranded locating wire. PVC/ABS piping segments were installed without a tracer wire.

The metallic mains and services of the CPAU gas distribution system are cathodically protected utilizing a combination of galvanic anodes and impressed current rectifiers.

There are approximately 110 key/emergency valves in the CPAU natural gas distribution system, including the gas receiving station inlet and outlet valves. Valve boxes are installed to facilitate operation of all underground valves.
A list of Key Valves can be found in Appendix B, B.5.

Reporting/Notification

CPAU obtained an Operator Identification Number (OPID), currently assigned OPID (15084), for CPAU's natural gas distribution system. To obtain an OPID, an operator must complete an OPID Assignment Request DOT Form PHMSA F 1000.1 per 191.22(a).

CPAU will notify PHMSA electronically through the National Registry of Pipeline, Underground Natural Gas Storage Facility, and LNG Operators at http://opsweb.phmsa.dot.gov of changes per 191.22(c). Most relevant for CPAU's distribution system, the following events will be reported not later than 60 days before the event occurs:

(i) Construction or any planned rehabilitation, replacement, modification, upgrade, uprate, or update of a facility, other than a section of line pipe that costs $10 million or more. If 60 day notice is not feasible because of an emergency, CPAU must notify PHMSA as soon as practicable;

(ii) Construction of 10 or more miles of a new or replacement pipeline;

1.2. Customer Odor/Leak Service Calls

General	Approval Date: 12/04/2018
Revision date: 08/29/2018	Supersedes: 1/30/2018

Scope and Purpose

All requests for gas service, odor complaints, and leak calls received from customers or reported by the public will be recorded in the CPAU Online Stop Card Database and recorded using Utility Service Codes listed in Table 1.2, page 4. All odor complaints and leak calls will receive priority by CPAU and are investigated according to the Field Service Standard Operating Procedure (SOP 805,818,820) Appendix A, A01-03. Leaks are classified as noted in Maintenance section, 4.3, Leakage Surveys, and all gas leaks will be entered into the GIS database.

Operator Qualification

This activity is not a covered task under the Operator Qualification Plan

Inspection Frequency

Pipeline operation and maintenance work must be reviewed for effectiveness and adequacy periodically but at least once each calendar year. The content and findings of these reviews will be addressed during the annual review of the O&M Manual under General 605-A O&M Manual Review/Revision.

Reporting / Notification

Each O&M Work Review shall be documented by the CPAU WGW Supervisor through work site reviews documented through an online (ZOHO) form that will include proposed modifications to the procedures if deficiencies are found.

Related Procedures

1.4 O&M Manual Review/Revision

1.6. Safety Related Conditions / Reporting

General .605-D	Approval Date: 12/04/2018
Revision date: : 08/29/2018	Supersedes: 1/30/2018

Scope and Purpose

This procedure describes how to identify and report any known hazardous conditions that may exist, acquaint appropriate operating and maintenance employees with the procedures, establish a continuing educational program to enable employees to recognize and report any condition that may represent a hazardous condition with particular attention given to highway and railway crossings and buildings intended for human occupancy or outdoor places of assembly that are in close proximity to gas facilities. This procedure complies with 49 CFR §191.23, §191.25 and §192.605(d) requirements.

Responsibility

All CPAU personnel.

Personnel Safety

All CPAU personnel are to utilize proper protective clothing/equipment.

Equipment and Materials

No special equipment or materials are required.

Operator Qualification

This activity is not a covered task under the Operator Qualification Plan

Frequency

Recognizing and reporting safety-related conditions is an ongoing requirement.

Steps

In general, any condition that, if not corrected, might constitute an imminent hazard or could potentially cause an accident may be considered a Safety-Related Condition and shall be reported promptly to the CPAU WGW Operations Manager for investigation.

Upon verification, the following conditions would require reporting unless exempted by the regulations. Operation and maintenance personnel should continually be alert to observe any of the following Safety-Related Conditions:

- Unintended movement or abnormal loading of a pipeline by environmental causes such as an earthquake, landslide, or flood that impairs serviceability.
- Any malfunction or operating error that causes the pressure of a pipeline to rise above 6 psig of its maximum allowable operating pressure.
- Any Safety-Related Condition that could lead to an imminent hazard and causes (either directly or indirectly by remedial action of the operator - for purposes other than abandonment) a 20 percent (20%) or more reduction in operating pressure or shutdown of a pipeline.

A report is <u>not</u> required for any safety-related condition that:

- Is more than 220 yards from any building intended for human occupancy or outdoor place of assembly, except that reports are required for conditions within the right-of-way of an active railroad, paved road, street, or highway.
- Is a master meter system or customer-owned service line.
- Is corrected by repair or replacement within five (5) working days of determination.

Reporting

A written Safety-Related Condition Report (complete Form 605-D) must be filed with the DOT in letter form by the CPAU WGW Operations Manager.

A detailed written report should be completed and submitted to the DOT within 5 working days after it is determined that a safety-related condition exists, but in no case later than 10 working days after the condition is first brought to the attention of the operator. Reports can also be submitted using telephonic media, including the

Operator Qualification

This activity is not a covered task under the Operator Qualification Plan

Reporting / Notification

Field personnel performing maintenance and operation functions on the pipeline must request pertinent maps and records whenever necessary to ensure safety.

Related Procedures

2.3 Construction

4.6 General Pipeline Repair

Emergency Operating Plan

3.2. Startup, Shutdown, Purging

Normal Opns. .605-B5	Approval Date: 12/04/2018
Revision date: 09/18/2018	Supersedes: 1/30/2018

Scope and Purpose

This procedure is to ensure the safe and proper startup/shutdown and purging of any portion of the pipeline system, with the exception of gas receiving stations, within the allowable operating limits according to 49 CFR §192.605 (b) (5), §192.629 and per AGA XK0101, "Purging Principles and Practice".

Responsibility

Field personnel are responsible for starting up, shutting down, and purging the system under this procedure.

Personnel Safety

All CPAU personnel are to utilize proper protective clothing/equipment when performing pipeline startup/shutdown and purging procedures.

Equipment and Materials

All CPAU personnel are to utilize proper tools, materials, and equipment required for each startup/shutdown and purging procedure including:

Communications equipment

Flame retardant clothing

Grounding apparatus

Valves

Squeeze-off tools

Compressed air supply

Calibrated pressure gauges

Combustible Gas Indicator (CGI)

Inert Gases

Operator Qualification

This activity is a covered task under the Operator Qualification Plan and may only be performed, or directed and observed, by an individual who is currently qualified to perform this procedure. Refer to the OQ Plan for specific qualification requirements.

Startup/Purging Steps - Purging a Facility of Air Using Gas

1. Check all equipment for proper operation prior to commencement of any startup or purging procedures.
2. Ground all pipeline facilities.
3. Utilize a grounded steel riser whenever performing startup and purging procedures from a plastic facility. Do not purge directly from a plastic facility unless grounded. (Refer to Appendix A, A36 for details).
4. Install purge tee(s) and blow off valve(s).
5. Release pressurized air from the new system.
6. Connect new piping to the existing distribution system.
7. Open the distribution system mainline valve and introduce gas into the new piping. To avoid formation of a combustible mixture, purging of a segment of pipeline in excess of 1 mile shall be avoided as it may require higher minimum purging inlet pressure than available distribution system pressure. (Refer to following table for approximate minimum purging time.)

See chart below for general guidelines: The calculations used for pipelines less than 2" in diameter are made using GasCalc 5.0 software and are based on Fixed Supply Pressure Calculation Method Criteria and Colebrook Equation. Purging times are rounded up to the nearest one half minute (30sec).

Pipe Size (Inch)	Method of fixed Purge Velocity Criteria ft/s	Min. Purge Pressure Required (PSIG) at 4800ft.	Length of Pipe (FT)			
			600ft	1200ft	2400ft	4800ft
Less than 2	-	25.00	1m	1m	2m	5m
2	44	22.15	1m	1.5m	2m	3.5m
4	44	4.63	1m	1.5m	2.5m	4.5m
6	44	2.52	1m	1.5m	2.5m	4.5m
8	44	1.73	1m	1.5m	2.5m	4.5m
10	44	1.19	1m	1.5m	2.5m	4.5m
12	44	1.00	1m	1.5m	2.5m	4.5m
			Min. Calculated Purge Time (minutes)			

These calculations are made using GasCalc 5.0 software and are based on Fixed Purge Velocity of 2 Minutes per Mile (44 ft/sec) Calculation Method Criteria and Colebrook Equation. It should be noted that purging 1 mile of 2" pipe maintaining 44 ft/sec velocity would require pressure higher than available distribution system pressure.

8. Purge air from the new main and all new services.
9. Monitor all pressure gauges at each available location until all air has been displaced and CGI reads 100% natural gas.
10. Close the blow off valves and cut and cap purge tees.
11. Set all valves in the desired normal operating position to ensure continued safe pipeline operation.
12. Services may be purged by opening the riser valve after the service tee has been tapped. Care must be taken to blow gas away from structures. A sufficient amount of gas must be blown to atmosphere to ensure that all air is removed from the line, confirm that all air has been displaced and CGI reads 100% natural gas. Service line must be purged immediately after tee has been tapped.

Shutdown/Purging Steps - Purging a Facility of Gas Using Air

1. Ensure that the facility to be purged of gas has been disconnected from all sources of gas prior to commencement of purging.
2. Follow steps 1. and 2. listed for Startup/Purging Steps.
3. Utilize a grounded steel riser whenever performing shutdown and purging procedures from a plastic facility. Do not purge from a plastic facility unless grounded. (Refer to Appendix A, A36 for details).
4. Install purge tee(s) and blow off valve(s).
5. Insure that all valves at the facility to be abandoned are opened.
6. Introduce air at an available injection rate into one end of the facility. (Refer to the table below for approximate minimum purging time.)

See chart below for general guidelines: Pipelines less than 2" diameter have varying minimum vent size for introducing air.

Pipe Size (Inch)	Method of Fixed Purge Velocity Criteria ft/min	Length of Pipe (FT)		Min. Vent Size for Introducing Air (Inch)
		600ft	1200ft	
Less than 2	200	7.5m	15m	-
2	200	7.5m	15m	1in
4	200	7.5m	15m	1in
6	200	7.5m	15m	1in
8	200	7.5m	15m	1in
10	200	7.5m	15m	1in
12	200	7.5m	15m	1in
		Min. Calculated Purge Time		

These calculations are made using GasCalcs 5.0 software and are based on Fixed Purge Velocity of 200 ft/min (3.33 ft/sec) Calculation Method Criteria per AGA XK0101 "Purging Principles and Practice" figure 5.1 "Minimum Purge Velocity" using Colebrook Equation.

7. Purge gas from main pipeline and all associated services.
8. Monitor all pressure gauges until gas is completely displaced, according to CGI.
9. Seal both ends of the abandoned pipeline.

Gas Receiving Station Startup/Shutdown

Refer to Maintenance section 4.11, Gas Receiving Stations for specific startup/shutdown procedures regarding these facilities.

Scheduled / Emergency Gas System Shutdown

All emergency / scheduled gas system shutdowns and restorations of gas service shall be performed according to the provisions listed in Appendix A, A16, A17.A and A17.B.

Reporting / Notification

Notify the CPAU WGW Operations Manager of any problems encountered during the startup/shutdown procedure.

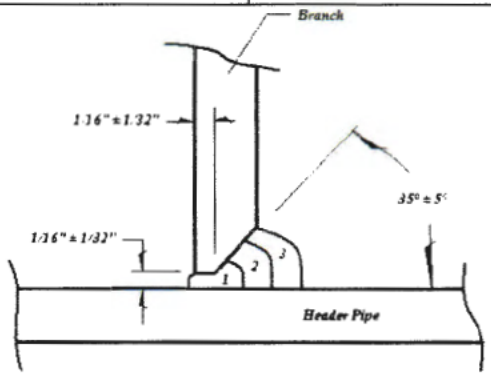
Related Procedures

2.3 Construction

4.11 Gas Receiving Stations

4.13 Prevention of Accidental Ignition

L	Joint Design:	



Non-Essential Variables:		
M	Time Between Remaining Passes:	Maximum 24 hours to completion of weld
N	Cleaning and Grinding	Power / Hand Tools
O	Pre-heating:	None (Required when pipe temperature is below 40°F.)
P	Post-heating:	None
Q	Line-up Clamp:	None
R	Electrode Type:	E6010

E6010 – Electrode Size and Number of Beads		
3/32	40-70 amps	15-35 volts
1/8	75-130 amps	16-40 volts
5/32	90-175 amps	17-40 volts
3/16	140-225 amps	18-45 volts

Minimum 3 passes to complete weld starting with root bead, hot pass, filler and or cap.

4.8. Plastic Fusion Procedure

Maintenance .281-.285	Approval Date: 12/04/2018
Revision date: 10/15/2018	Supersedes: 1/30/2018

Scope and Purpose

The purpose of this procedure is to ensure safe and proper installation and repair of plastic pipeline segments through application of accepted fusion techniques. This procedure complies with 49 CFR § 192.281, § 192.283, and § 192.285.

Responsibility

The CPAU WGW Operations Manager is responsible for ensuring that all plastic fusion qualification procedures, personnel qualifications, and fusion installations and repairs are performed according to the provisions of this procedure.

Personnel Safety

All personnel are to utilize proper protective clothing/equipment when performing pipeline fusion procedures.

Equipment and Materials

All personnel are to utilize proper fusion tools, materials, and equipment required for each type of system fusion.

Operator Qualification

This activity is a covered task under the Operator Qualification Plan whenever plastic fusion is performed on a gas facility. Accordingly, this activity may only be performed by an individual who is currently qualified to perform this procedure. Refer to the OQ Plan for specific qualification requirements.

Fusion Procedure Qualification

The CPAU will qualify all field personnel under the CPA Utility Standards once each calendar year, not to exceed 15 months.

Persons making fusions found to be unacceptable by pressure tests or visual inspection must be requalified.

No person may make a plastic fusion unless that person is qualified under the applicable joining procedure (Refer to CPAU Standards).

Plastic pipe fusion qualification shall be recorded on A20 of Appendix A or through the online OQ program.

Related Procedures

2.3 Construction

4.6 General Pipeline Repair

4.9. Testing for Service Line Reinstatements

Maintenance .725	Approval Date: 12/04/2018
Revision date: 10/15/2018	Supersedes: 1/30/2018

Scope and Purpose

The purpose of this procedure is to ensure safe and proper testing of service lines that have been disconnected and are being reinstated. This procedure complies with 49 CFR §192.725.

4.12. Key Valve Inspection and Maintenance

Maintenance .747	Approval Date: 12/04/2018
Revision date: 10/30/2018	Supersedes: 1/30/2018

Scope & Purpose

This procedure is to ensure the safe and proper operation and inspection of key valves, which may be required during an emergency as well as during normal operations under 49 CFR § 192.747.

Responsibility

The CPAU WGW Operations Manager is responsible for ensuring that all key valves intended for emergency and normal operation of the distribution system are inspected, maintained, and operated according to the provisions of this procedure.

Personnel Safety

All personnel are to use proper protective clothing/equipment and ensure traffic safety when performing valve inspection and maintenance.

Equipment and Materials

Refer to the valve manufacturer's literature for required equipment and materials.

Operator Qualification

This activity is a covered task under the Operator Qualification Plan and may only be performed by, or directed and observed by, an individual who is currently qualified to perform this procedure. Refer to the OQ Plan for specific qualification requirements.

Inspection Frequency

Each gas key valve indicated on the Gas Key Valve Map located in Appendix B, B.5 shall be inspected at least once each calendar year, but at an interval not to exceed 15 months.

Each CPAU Gas Key Valve cover, that is painted yellow as a marker, will have its location trilaterated and linked into its proper valve feature in GIS. Additionally, a copy of the GIS Gas Valve Maintenance Record is maintained in a binder found in the WGW Operations Office at the MSC. In GIS the Gas Key Valves are identified by a RED symbol and inspected according to the provisions of this standard. All other system valves may be inspected on a periodic basis to ensure that they are accessible and fully operational.

Inspection Steps

1. Verify that the measurements and other information on the Electronic (E)-Valve Card are correct and revise as necessary.
2. Inspect the valve box, lid, and sleeve to make sure that it is not broken and allowing dirt to enter and cover the valve. The sleeve should be aligned so that a valve wrench can be inserted to work the valve.
3. Check the valve box lid for breakage and the correct lid marking ("GAS").
4. If the smell of odorant is present, immediately report to the Utilities Supervisor.
5. Prior to operation, check the E-Valve Card to ensure that the valve is not on a dead end main or on a service line. Valves located on dead end mains or service lines shall be inspected only to ensure accessibility and the presence of an operating nut. Do not operate these valves in order to prevent service interruption.
6. Determine whether the valve requires lubrication using the Valve Card.
7. Check that the valve is in the proper operating position.
8. Visually inspect for signs of tampering or damage.
9. Check valve locks if normally used. Replace as necessary.
10. Lubricate all valves having grease ports. Refer to the valve manufacturer's literature for proper lubricants, lubrication instructions, and special valve tools. Do not over lubricate.
11. Fully operate valves using a T-handled valve wrench to work the valve. Slip the wrench over the operating nut of the valve turning the nut clockwise ¼ turn until the valve stops (closed). Then turn the nut counter-clockwise ¼ turn until the valve stops (open). If the valve does not stop in the open position, report the valve as broken in GIS to activate an electronic report to the Utilities Supervisor, Gas Operations for scheduled repair/replacement.
12. If a key valve is found to be broken, inoperable or inaccessible, an alternative valve may be designated.

Reporting / Notification

Complete Gas Valve Maintenance Record in GIS, (Examples: Appendix A, A19.1 or A19.2), for each valve inspection. Include the date of inspection, employee initials, work/repair performed, (lubricated, worked, etc.), or any problems encountered, (leak, other problems). Any problems not repaired during inspection shall be brought to the attention of the Utilities Supervisor, Gas Operations, through GIS for scheduled repair/replacement.

GIS generated gas valve cards associated with Gas Key Valves that are inaccessible, abandoned, or no longer designated as a Gas Key Valve shall be

revised in the appropriate fields in GIS. Also, update the Gas Key Valve Maintenance Records binder and keep the Utility Projects Coordinator informed.

Related Procedures

4.5 Record Keeping

4.6 General Pipeline Repair

4.16 Continuing Surveillance

5.4 Atmospheric Corrosion Inspection

4.13. Prevention of Accidental Ignition

Maintenance .751	Approval Date: 12/04/2018
Revision date: 10/30/2018	Supersedes1/30/2018

Scope and Purpose

This procedure is to ensure the prevention of accidental ignition of gas as required by 49 CFR § 192.751.

Responsibility

All CPAU employees are responsible for ensuring the prevention of accidental ignition of gas according to the provisions of this procedure.

Personnel Safety

All CPAU personnel are to utilize proper protective clothing/equipment when performing pipeline system operation and maintenance functions in the presence of a gaseous atmosphere.

Equipment and Materials

All CPAU personnel are to utilize proper repair tools, materials, and equipment required for all pipeline system operation and maintenance functions, including grounding straps and fire extinguishers, in order to prevent accidental ignition of natural gas. Additional equipment may include, but not be limited to:

- Combustible Gas Indicator (CGI)
- Intrinsically Safe Electrical and Hand Tools
- Flame Retardant Clothing
- Barricades and Warning Signs
- Dry Chemical Fire Extinguisher
- Air Tools

6.4. Action to be Taken

The City of Palo Alto will respond promptly to the following types of emergency situations:

- Gas detected inside or near a building
- Explosion (occurring near or directly involving a pipeline facility)
- Earthquake
- Flood
- Fire (located near or directly involving a pipeline facility)
- Natural Disaster
- Industrial or Transportation Accident
- Vandalism

The first notification of an emergency situation can be:

- A low pressure alarm at the Utility Control Center, if an outage has occurred.
- Telephone calls from citizens received by Communications Dispatch at the Civic Center.
- Telephone calls from citizens received at the W-G-W Field Operation's' office.

Depending upon being alerted to a particular emergency situation, a communicator/dispatcher will carry out procedures already established. Dispatch will contact one or more of the following personnel:

1. Dispatch Field Service personnel to determine the problem.
2. Notify primary standby call-person
3. Notify supervisory personnel
4. Notify Manager, W-G-W
5. Notify the Assistant Directors of Utilities Engineering and Operations
6. Notify Chief Operating Officer
7. Notify City Manager
8. Notify State Office of Emergency Services (OES)

Gas service crews are available on a 24-hour basis. During normal working hours the W-G-W field office is notified for crew dispatching. After normal working hours, calls are received by the Communications Center and Field Service units are dispatched to investigate the problem. If the Field Service unit identifies the problem as a gas leak requiring immediate repair, gas maintenance crews will be called out to the scene by the Communications Center.

When a high or low pressure gas system alarm is received from a monitoring station, the Utilities Supervisor is responsible for investigating and/or restoring the system. If line breakage has occurred, additional support will be called in to make repairs. In case of a shut down or major problem at a gas receiving station, the Manager, WGW Operations, will be notified.

If a fire or explosion is located near or directly involves a pipeline, the Fire Department will notify Communications Dispatch for a Field Service Representative or W-G-W Operation employee to respond to the scene to shut down the affected section of pipeline. The City will notify the appropriate personnel per Table 1 in section 1.6 below.

The City of Palo Alto receives its gas supply at four separate locations from the Pacific Gas and Electric Company (PG&E)-see drawings located in Appendix B. It is highly unlikely that a situation will occur that will disable all four receiving stations but, if this does happen, the same procedure can apply in restoring service. The only difference would be the number of people needed and the length of the outage.

If a situation occurs when more than one receiving stations are out of service careful monitoring of pressure at the extreme limits of the system will be necessary. Putting into operation the "Emergency Load Reduction Plan" at this time may forestall any disruption of service. This plan may be put into effect at the discretion of the Chief Operating Officer or the Assistant Director of Utilities, Operations.

In the event GRS.3 is used to maintain service to the City, the VA Hospital will be notified of their change in service, each regulator run in GRS.3 must be set to a MAOP of 25psig and the valve (G5982) located at Foothill Expressway, east of Hillview Ave should be opened.

The Chief Operating Officer is authorized to adjust the Emergency Load Shedding. Load reduction will be accomplished using the procedure and list of highest-volume gas users (found in the WGW Emergency Operations Plan, Section V Roles and Responsibilities- Load Reduction and according to priority rating lists. The largest users will be advised by telephone, door-to-door, or other means available to the City, if necessary, that mandatory curtailment is in effect until further notice. The general public (residences and commercial/industrial) may be asked to reduce gas usage voluntarily. If this combination of load reduction does not reduce usage to the required level, mandatory load reduction will be enforced by the City, according to Rule and Regulation 13 from the City of Palo Alto Department of Utilities Rates and Regulations (found in the WGW Emergency Operations Plan). Service to critical locations will be restored first. When a disaster occurs, the State of California "Emergency Resources Management Plan", Part B, Section IX, Utilities has mandated the following customer priority restoration list, as indicated in the WGW Emergency Operations Plan, Section VI Method of Operations- Response.

All non-essential customers will be advised by the City as to what are considered non-critical loads. It is important that the customer understands that complying with these actions may preclude the need for mandatory interruptions of service.

Non-essential Commercial/Industrial customers may be required to cease operations during the emergency period. Essential Commercial/Industrial customers will be requested to curtail gas usage and be requested to implement their own voluntary curtailment plan if they are still operating.

In the event that this effort does not reduce the load to the available supply, a curtailment plan will be put into effect to maintain the balance between available resources and load.

The Manager, W-G-W Operations, will assume responsibility for all field operations and will (depending upon the extent of the outage) put into action any portion, or all, of the emergency plan. The Manager will assess damage to the system and notify the appropriate people. The Manager may request outside assistance and investigate all accidental dig-ins and pipe failures. In the event of a pipe failure, he/she shall furnish the Engineering Division of W-G-W with samples of the pipe for laboratory analysis for the purpose of determining the cause and to minimize reoccurrence.

In shutting down an area, the affected area can be isolated by valving off the system so that as few services as possible will be affected. To secure gas meter information for the addresses involved in the shut-down follow the guidelines in Section III.

The Manager, W-G-W Operations, shall determine the crew make-up for turn-off and turn-on operations and see that proper equipment and tools are issued. Extra main valve wrenches and bars may be needed and are available by means of the Field Service Representatives and located in service trucks at the MSC. Other necessary materials include:

- Identification badges for outside assistance personnel.
- Turn-Off Notification Tags. (Field Service Representative Standard Practices and Procedures, Appendix A, A01-A03)
- Gas Distribution maps
- Emergency Plan Manuals including the Gas Operation & Maintenance Plan.
- Emergency equipment / materials / resources that can be found in the Emergency Operations Base Plan, section IV page 12.

6.7. Protecting Life and Property

The primary responsibility of the utility is to take actions directed toward protecting people first and then property.

The first Emergency Response person to arrive at the scene of a catastrophic disaster will provide the Palo Alto Communications Center with an estimate of the situation to include:

1. Need for medical assistance, ambulance and/or coroner, etc.
2. Number of injured.
3. Need for additional rescue equipment.
4. Estimated extent of damage in area.
5. Need for traffic control.

If a fire explosion occurs, the Fire Department will handle the evacuation of citizens and cordon off the required area.

To protect people first and then property, the affected area can be isolated by valving off the system.

6.8. Accident Investigation and Reporting

It is the policy of the City of Palo Alto Utilities Department to investigate all gas leak or odor complaints and to make repairs or take action in a timely manner with all necessary precaution. All requests for investigation of odor complaints and leak calls received from customers or reported by the public will be initially recorded on a CPAU FSR Stop Card e-form.

Each failure, unscheduled outage, hazardous leak, or incident shall be treated with the same degree of significance regardless of the magnitude of potential or actual damage and with respect to the necessity for minimizing recurrence. For each assessment, follow the "Investigation Steps" and "Reporting/Notification" found in the Gas Operation and Maintenance Manual located in section 4.17-Investigation of Failures.

Additionally per 49 CFR, 191.3, Pipeline Safety Regulations, any accidental break of a gas line which results in a release of gas and **one** of the following:

1. Death or personal injury requiring in-patient hospitalization;
2. Estimated property damage of $50,000 or more, including loss to the operator and others, or both, but excluding cost of gas lost;

3. Unintentional estimated gas loss of three million cubic feet or more;

4. A significant event in the judgment of the operator, even though it doesn't meet any of the criteria listed above.

INCIDENTS MUST BE REPORTED AS SOON AS PRACTICABLE, GENERALLY WITHIN 2 HOURS, FOLLOWING DISCOVERY, TO THE NATIONAL RESPONSE CENTER AT 1 (800) 424-8802 or http://www.nrc.uscg.mil

Per 49 CRF, 191.5 when reporting include the following information:

1. Name of system operator, person making the report and telephone number.
2. Location of incident
3. Time of incident
4. The number of fatalities and persons injured
5. Any significant facts or information that is known and relevant to the incident or extent of the damage.

Per 49 CFT 191.9 Incident Report, the system operator shall submit DOT Form RSPA F7100.1 as soon as practical but not more than 30 days after detection of an incident defined by 191.3

The system operator shall make supplementary reports as deemed necessary with a clear reference by date and subject to the original report as additional relevant information is obtained.

6.9. Emergency Plan Procedure

The Manager of Water-Gas-Wastewater Field Operations will be responsible for the Emergency Plan revisions. The Plan will be reviewed and updated once each calendar year, not to exceed fifteen months, or as needed. All suggested revisions to the Plan shall be forwarded to the Manager for approval. It is requested that areas of the Plan involving other departments and requiring changes such as titles, addresses, telephone numbers, etc., be forwarded to the Manager.

6.10. City Personnel Telephone Information

City Management (Civic Center)

Name	Title	City Phone	Home Phone
E. Shikada	City Manager	(650) 329-2563	*
D. Bachelor	Chief Operating Officer	(650) 496-6981	*
Vacant	Chief Procurement Officer		*

City of Palo Alto Utilities

Procedural Actions Related to Gas Overall Awareness Level - Public Awareness Plan

October 2, 2019

Recommendations per the Public Awareness Programs for Pipeline Operators

API Recommended Practice 1162

8.5 SUMMARY OF BASELINE EVALUATION PROGRAM

Table 8-1—Summary of Baseline Evaluation Program

The results of the evaluation need to be considered and revisions/updates made in the public awareness program plan, implementation, materials, frequency and/or messages accordingly

Evaluation Approaches	Evaluation Techniques	Recommended Frequency
Self Assessment of Implementation	Internal review, ***or*** third-party assessment ***or*** regulatory inspection	Annually
Pre-Test Effectiveness of Materials	Focus groups (in-house or external participants)	Upon design or major redesign of public awareness materials or messages
Evaluation of effectiveness of program implementation: • Outreach • Level of knowledge • Changes in behavior • Bottom-line results	1. Survey: Can assess outreach efforts, audience knowledge and changes in behavior • Operator-designed and conducted survey, or • Use of pre-designed survey by third-party or industry association, or • Trade association conducted survey segmented by operator, state or other relevant separation to allow application of results to each operator. 2. Assess notifications and incidents to determine anecdotal changes in behavior. 3. Documented records and industry comparisons of incidents to evaluate bottom-line results.	No more than four years apart. Operator should consider more frequent as a supplement or upon major redesign of program.
Implement changes to the Public Awareness Program as assessment methods above suggest.	Responsible person as designated in written Public Awareness Program	As required by findings of evaluations.

Recommendations per the City of Palo Alto Utilities Public Awareness Plan

1. Program Administration

Utilities Communications Manager is responsible for conducting this Public Awareness Program and serves as the Program Administrator. The Program Administrator is responsible for ensuring that:

- Target audiences are identified;
- Message(s) appropriate to each audience are identified;
- Appropriate media are selected to transmit messages to each audience;

- Appropriate message delivery frequencies are identified for each message and audience;
- Messages are delivered as specified in the Program plan;
- Program effectiveness is evaluated internally each year through such methods as customer behavior (e.g. increase in volume of calls for checking sewer lines for gas crossbores), media coverage resulting from press outreach or customer emails or calls in response to a mailing;
- Program effectiveness is evaluated by a third party no less often than every four years, and typically annually. Evaluation is conducted via participation in the American Public Gas Association Survey. The Program is modified to reflect the findings of the effectiveness evaluations.

Evaluation Mechanisms:

CPAU participates annually in the American Public Gas Association's annual Gas Overall Awareness Level (GOAL) survey to determine public awareness of gas safety. The survey samples customers, non-customers living around a gas pipeline, public/emergency officials and excavators. We make a good faith effort to contact the vast majority of our stakeholder audiences.

APGA's third-party administrator for the surveys calls public officials, emergency responders, excavators and locators provided by CPAU as part of our stakeholder contact listing.

Questions of all stakeholders included whether they:

- "have adequate information about Gas Safety"
- "know when smelling gas to leave home and call CPAU from neighbor's home"
- "know not to light a match to help find leaks if they smell gas"
- "are aware of the hissing sound of a Gas Leak"
- "have heard about Gas Safety on the radio or TV"
- "remember receiving gas safety information in the last 12 months"

CPAU staff will continue to explore innovative and new ways to outreach about gas safety through diverse communication methods. Results from each year's survey are maintained electronically and provided available upon request.

CPAU also routinely takes corrective action based on its internal Program evaluation. The City makes a point of conducting a follow-up each year. For example, in 2012, when our internal records indicated that customers were not calling us first before clearing sewer lines (a safety concern due to the potential for gas and sewer line crossbores) we launched a focused direct mail campaign solely on that issue and saw an immediate rise in the number of calls received. These outreach efforts have continued over the years, through a variety of communication tools including web, print and digital ads, bill inserts, utility bill messaging and online video content.

CPAU continues to identify additional feedback mechanisms to evaluate effectiveness of specific program outreach materials and customer communication methods to implement when feasible. These mechanisms include:

- online surveys, social media and website requests for feedback
- business reply survey cards sent to specific stakeholder groups

Utilities Communication Manager shall maintain the following records in electronic format:

- Lists, records or other documentation of stakeholder audiences with whom CPAU has communicated,
- Copies of all materials provided to each stakeholder audience, and
- Results of effectiveness assessments from the annual APGA benchmark survey, including follow-up actions and expected results.