

We reviewed WCG's gas pipeline safety audit response letter dated January 15, 2014 and its attachments responding to the violations SED identified for deficient WCG's Operation and Maintenance Plan procedures and all other unsatisfactory operations and maintenance activities and corresponding records for its gas pipeline system.

SED further evaluated WCG's updated O&M Plan and other commitments listed its response and determined that WCG's corrective and preventive actions for the violations listed in SED's audit report are unsatisfactory; therefore, WCG must take further actions by revising its O&M Plan and providing records listed below in order to demonstrate the compliance of the federal and state gas pipeline safety rules and regulations.

Please provide your responses to the items in the order listed below no later than March 24, 2014 so that SED will evaluate the compliance of the outstanding violations and finalize the citation process.

List of documents, records, and other procedural deficiencies that WCG is required to provide is as follows:

1. ***WCG needs to submit records to demonstrate that it has reviewed and updated its Quality Management and Operating and Maintenance Program (O&M Plan) in 2009, 2010, 2011, and 2012. Please submit review records showing date, person reviewed, any changes made to WCG's O&M Plan after the review for each year.***

Response: See Attachment E

2. WCG needs to submit the following records and include them in the O&M Plan:
 - a. Type of leak detection equipment that Heath Consultants use for leak survey and leak grading

Response - See Item 2a Leak Classification and Action Criteria Changed 05.21.13 & Item 2a Response.

- b. Forms that Heath Consultants use for leak survey and to record discovered leaks.

Response - See Item 2b Leakage Control Report, Field Survey, Repair, Monitor Using 03.19.14 & Item 2b Leakage Control Survey Summary

WCG should also include the type of leak survey and grading equipment and sample copies of leak survey, leak detection forms that Heath Consultant will fill out in its O&M Plan.

Response: Will Include

3. WCG needs to provide an updated version of the gas leak repair report to demonstrate that the deficiencies and changes identified in SED's report are incorporated into the new gas leak repair and monitor report.

Response - See Item 3 Leakage Control Report, Field Survey, Repair, Monitor Using 03.19.14

Additionally, WCG should include a sample copy of this form into its O&M Plan.

Response:

WCG will include a sample copy in its O&M Plan.

4. WCG added Part T in its O&M Plan about calibration; however, it did not fully respond to all deficiencies that SED identified.

WCG needs to do the following;

a. List all equipment used by WCG in its operation & maintenance activities. Update the list to show only currently used equipment. For example, as stated in WCG's response, WCG replaced FI unit with a new gas leak survey equipment, DP-IR. Therefore, FI unit is not currently being used. The list in Part T has been taken from SED's audit letter which was given as an example; therefore, it needs to be revised to show the equipments that WCG currently uses.

b. Develop forms for the calibration of each equipment and attach to the revised O&M plan (Part T),

Response - See Item 4a&b Equipment Calibration Log 03.19.2014 and Item 4a&b Equipment Maintenance Log 03.19.2014

c. Describe the calibration frequency of each equipment in its O&M Plan,

d. Provide most recent calibration records performed for all equipment used by WCG in its operation & maintenance activities.

Response - See Item 4d Completed Equipment Calibration Log, and Item 4d Completed Equipment Maintenance Log

5. WCG needs to add a procedure for the examination of exposed buried pipeline for evidence for external corrosion in its O&M Plan. WCG audit response letter states that the procedure was added to Part F; however, the revised O&M Plan did not have the procedure.

Response – See Attachment A

6. SED determined that WCG does not have a procedure that specifies the external corrosion control protective coating requirements as required under CFR, §192.461 which describes the protective coating specifications, inspection requirements prior to installation of buried pipe, and protection requirements from damage for buried pipe. WCG stated that coating and wrapping procedures added to part D. But Part D of O&M Plan does not contain such procedures.

WCG must include a procedure to describe the specification, inspection, and protection of protective coating requirements from damage resulting from conditions and supporting blocks that adversely affect buried pipe in its O&M Plan.

Response – See Attachment B

- 7. SED noted that WCG must establish a procedure that specifies how to inspect its rectifiers to ensure that they are operating properly and to verify that they are providing adequate levels of external corrosion protection for its buried steel gas distribution pipeline systems located at Mather and Castle. WCG stated that it included the relevant procedures in Appendices D & E.**

Based on the rectifier maintenance procedures that WCG included in its O&M Plan, please provide records of most recent maintenance conducted for all rectifiers located in Mather and Castle systems. WCG must also specify the frequency of the rectifier maintenance performed each year for its rectifiers in Mather and Castle systems.

Response - See Item 7 Castle Rectifier Inspection, Item 7 Rectifier Inspection and Item 7 Response.

- 8. Page 36 of Part K of WCG's O&M Plan states "In addition, WCG will perform an instantaneous on/off IR Drop test at least once each year". However, SED neither found any records for annual instant IR Drop tests conducted after 2009 nor did SED find the procedure which describes how to perform the instantaneous on/off IR Drop test.**

WCG must include a procedure in its O&M Plan to describe how to perform instantaneous on/off IR drop test. Since WCG's O&M Plan states that the test is performed annually, WCG must follow its plan to perform the test and keep records accordingly. WCG must also train its personnel who are in charge of inspecting rectifiers and performing IR drop tests.

WCG should include the procedure to perform instantaneous on/off IR drop test in its O&M Plan and provide SED with the most recent records conducted for its entire CP system and training records for its personnel.

Response: See Attachment C

- 9. SED noted that WCG must demonstrate that the natural gas that it transports to its distribution system is not corrosive. WCG must obtain gas quality characteristics from PG&E. WCG stated that WCG has in the past and again has sent PG&E the following request for both an attestation on the corrosive quality of the gas delivered by PG&E and the amount of odorization contained in the gas delivered to Mather and Castle. WCG provided copies of the letters dated Jan. 9, 2014 that it sent to PG&E.**

However, WCG did not provide PG&E's responses. WCG should obtain gas quality characteristics from PG&E and submit to SED by March 24, 2014.

Response – See Attachment D and as of the date of this writing, PG&E has not responded to our request for an attestation on the amount of mercaptan contained in the gas delivered to WCG. After an inquiry by phone I was directed to PG&E Rule 21, Section C – which states in part:

“Section C of Gas Rule 21 provides quality specifications for gas delivered into the PG&E pipeline system from California gas well and generally governs the gas quality received from interconnecting pipelines

Total Sulfur: The gas shall contain no more than one grain (17ppm) of total sulfur per one hundred cubic feet of gas.

Mercaptan Sulfur: The gas shall contain no more than 0.5 grain (8ppm) of mercaptan sulfur per one hundred cubic feet of gas.

Hydrogen Sulfide: The gas shall contain no more than 0.25 grain (4ppm) of hydrogen sulfide per 100 cubic feet of gas.”

We will continue to press PG&E for an written attestation on the mercaptan issue.

10. SED noted that WCG did not record any recheck information for the Grade 3 leak discovered on 4/21/10 by WCG at C Street, North corner of C Street and Aviation, in Castle. WCG stated completed the repair and has changed the GLRR form to monitor all leaks. See attached as a pdf file: GLRR North Corner of C & Aviation. However, WCG did not provide the repair record for this leak.

WCG should provide a copy of the gas leak repair record for the leak discovered at North corner of C and Aviation in Castle.

Response - See Item 10 Aviation Drive & C Street 06.18.2013

11. SED determined that WCG completed the initial atmospheric corrosion control monitoring survey in 2009; however, it did not properly document atmospheric corrosion control survey findings and remedial actions taken for the deficiencies identified in its system within 3 years, not exceeding 39 months after the initial survey.

SED noted that WCG must conduct an atmospheric corrosion control survey of its pipeline system exposed to the atmosphere once every 3 years and maintain records showing survey date, findings, and remedial actions taken for any deficiencies identified.

SED asked WCG to provide a status report within 30 days of this letter dated November 4, 2013 and provide records to demonstrate that WCG completed the atmospheric corrosion control survey and documented findings properly. Please inform SED upon completion of all atmospheric corrosion related corrective actions. WCG stated that “WCG has made copies of the records and has attached them to this response as a pdf

file: Atmos Corrosion Control". However, WCG did not provide any records to demonstrate the compliance with this violation.

WCG should provide all relevant atmospheric corrosion records to show compliance.

Response - See Item 11 & 13 Atmospheric Corrosion Control - Castle 01.10.14, Item 11 & 13 Atmospheric Corrosion Control - Housing A 01.13.14, Item 11 & 13 Atmospheric Corrosion Control - Housing B 01.13.14, and Item 11 & 13 Atmospheric Corrosion Control - Mather Commercial 01.1.14

12. SED identified that WCG did not document and monitor open Grade 2 and Grade 3 leaks. WCG must revise its gas leak repair reports (GLRR) to capture the recheck information for the pending leaks. WCG stated that WCG has changed the GLRR form to incorporate the rechecks on the open leaks and will record new data on that sheet. However, WCG did not provide any forms.

WCG should provide a copy of the modified version of the GLRR to show that it incorporated the recheck information on the forms.

Response - See Item 12 Leakage Control Report, Field Survey, Repair, Monitor Using 03.19.14

13. WCG needs to provide a status report within 30 days of this notification and provide records to demonstrate that WCG completed the atmospheric corrosion control survey and documented findings properly. Please inform SED upon completion of all atmospheric corrosion related corrective actions.

Response - See Item 11 & 13 Atmospheric Corrosion Control - Castle 01.10.14, Item 11 & 13 Atmospheric Corrosion Control - Housing A 01.13.14, Item 11 & 13 Atmospheric Corrosion Control - Housing B 01.13.14, and Item 11 & 13 Atmospheric Corrosion Control - Mather Commercial 01.1.14

14. **Please provide a copy of the letters sent to PG&E in 2012 and 2013 or last two letters requesting to verify the odorant levels of the gas supplied to WCG at both Mather and Castle to meet the requirements of 192.625 (f)(1) and PG&E's written verification to ensure that PG&E's gas supplied to WCG has the proper concentration of odorant.**
15. **SED found that WCG failed to perform annual maintenance of Housing-Capehart regulation station in 2010, 2011 and 2012. In its response WCG indicated that WCG performed required inspections were performed in 2013 as shown in pdf file:cape Reg Station Maint. attached. However, WCG did not provide any records.**

Please provide a copy of the regulator station maintenance records performed in 2013. If there are other maintenance records performed after 2009, please provide those records, as well.

Response - See Item 15 Records 03.19.14

Attachment A

2014 Addition)

Examination of Exposed Buried Pipeline for Signs of External Corrosion –

External corrosion occurs due to environmental conditions on the outside of the pipe (e.g., from the natural chemical interaction between the exterior surface of the pipeline and the soil surrounding it). Typically, the exterior surface of a pipeline is coated in order to prevent the surrounding soil or other environmental condition from contacting the steel pipe, thus preventing the oxidation process. In addition, the oxidation process can be halted “electrically” on both bare pipelines as well as on pipelines that have been coated. When either or both of these protective measures break down, external corrosion can occur.

External corrosion can result in the gradual reduction of the wall thickness of the pipe and a resulting loss of pipe strength. It can occur relatively evenly over an area of the pipe surface (sometimes referred to as “General Corrosion”) or in isolated spots on the pipe. This loss of pipe strength could result in leakage or rupture of the pipeline due to internal pressure stresses unless the corrosion is repaired, the affected pipeline section is replaced, or the operating pressure of the pipeline is reduced.

External pipeline corrosion creates weaknesses at points in the pipe, which in turn makes the pipe more susceptible to third party damage, overpressure events, etc. (i.e., corrosion doesn't necessarily need to cause the leak or rupture itself to increase risk).

WHY EXTERNAL CORROSION OCCURS ON PIPELINES:

Disbonded Coatings The most significant corrosion problem on coated and cathodically protected pipelines is that of disbonded pipeline coatings that shield cathodic protection when disbondments occur and water penetrates between the coating and the pipe. All coatings can and will disbond for various reasons. Poor application procedures, soil stress, temperature and a variety of other reasons can cause coatings to disbond. All coatings must have the ability to shield CP when properly adhered to the pipe. The problem happens when a disbondment occurs and water penetrates between the coating and the pipe. This problem exists more for certain types of coatings than for others. Some coatings will shield CP current in some situations and not in others.

Physical Examination:

Each instance where buried pipe is exposed WCG covered employee must inspect the pipe. This is critically important when the pipe was exposed due to excavation by WCG or third party contractors or by homeowners. Any damage to the pipe's coating and/or pipe wrap could lead to external corrosion and therefore leaks in the pipeline. If damage is discovered WCG covered employee must repair the damage before the pipe can be covered. In all instances where the pipe is exposed WCG covered employee must make a report on the condition of the coating and pipe wrap. Conditions to look for are 1) disbondment, 2) under-film liquid and 3) substrate condition.

If pipe is removed, WCG must take a coupon and tag the coupon with date and location information. The coupon must be examined for 1) bonding of coating and wrap, 2) any signs of corrosion and 3) diameter of the pipe. This coupon along with the above data must be kept as long as the pipeline remains in service.

Attachment B

Note that data in Red was referenced in 1_25_14 response

METALLIC PIPE INSTALLATION

All the conditions listed below must be met when you install metallic pipe.

- Make each joint in accordance with written procedures that have been proven by test or experience to produce strong gas tight joints.
- Obtain and follow the manufacturer's recommendations for each specific fitting used. The manufacturer's procedures will be retained in this part of the WCG O&M plan.
- Handle pipe properly without damaging the outside coating. Any gouges or scratches should be covered with an appropriate coating. If coating damage is not corrected, accelerated corrosion can occur in that area.
- Coat and ~~or~~ wrap steel pipe ~~mechanical joints~~ before backfilling (see coating and wrapping procedure below).
- Pressure test new pipe for leaks before backfilling. Mains to be operated at less than 1-psig should be tested to at least 10 psig. Mains to be operated at or above 1 psig but less than 100 psig must be tested to at least 90 psig. Service lines to be operated at 1 psig but not more than 40 psig must be given a leak test at a pressure of not less than 50 psig.
- Support the pipe along its length with proper backfill.
- Make certain that backfill material does not contain stones, cinders, bottles, or cans that may, damage, or scratch pipe coating.
- Cathodically protect steel pipes.
- Electrically insulate dissimilar metals.
- Make certain that compression type fittings that are intended to be electrically conductive have armored gaskets. Bond over insulating fittings to maintain electrical continuity for cathodic protection and for locating steel pipe.
- Coating and wrapping of steel pipe – procedures;

1. Coat bare steel pipe with Royston Spray Primer –“Roy Bond 747”.

- 3 Apply Mastic with paint brush – “Royston Mastic R28.”
- 4 Apply Royston “Green Line Tape” – pipe wrap.
- 5 Spay pipe again with Roy Bond 747.
- 6 Apply another coast of Mastic R28..

Attachment C

General - Natural Gas Distribution System

The Mather and Castle gas distribution steel pipelines vary in size from 1 to 8 inches. There can be little question that a natural gas system presents a potential hazard especially when improperly maintained. Without inadequate maintenance or failure to control corrosion on steel piping, leaks will develop. A leak can fill buildings, sewers and manholes with a combustible mix of air and gas that can cause devastating or even fatal results.

Cathodic protection is provided by 7 rectifiers and ground beds (impressed current) in addition to the coating and wrapping of steel pipe. 5 of the rectifiers are located in the industrial area of Mather. One is located in the housing area of Mather and one is located at Castle. New rectifiers and ground beds were installed in the housing area of Mather (2003) and at Castle (2005). One new rectifier was installed in the industrial area of Mather in 2009 to replace a non-functioning rectifier and an additional new replacement rectifier will be installed in industrial area the first quarter of 2014. In addition, a new ground bed was installed in the industrial area of Mather in the first quarter of 2014.

(2014 Addition)

Measuring the Level of Cathodic Protection. The main measurements of cathodic protection are as follows:

It should be noted that IR Drop refers to the fact that voltage reading is not being made on the top of the pipeline but on the surface of the earth above it. Therefore, the reading may contain additional resistance due to the electrolyte (soil) between the top of the pipe and the surface of the ground.

Pipe-to-Soil Potential

(ON Potential)

The potential of a pipeline at a given location is commonly referred to as the pipe-to-soil potential. It results from the corrosive electrolytic reaction between the buried pipe and its surrounding soil (the electrolyte). It is actually measured between the pipeline and a reference electrode (most commonly copper sulphate), placed in the soil directly over the pipeline. It is also known as the ON potential because the measurement is made while the CP system is energised.

Instant OFF Potential

When a pipe-to-soil measurement is made, the pipeline potential may appear to be more negative than its true potential, due to IR drop errors. The instant OFF measurement corrects for these errors; the CP current is briefly interrupted to produce a "true" pipe-to-soil potential, free from undesirable IR drop effects and before any appreciable depolarisation has occurred. This is a truer measure of the level of protection afforded to the pipeline. Simply stated, the pipe to soil potential is measured with the current on. Then the pipe to soil measurement is taken at the instant the current is interrupted.

Periodic Measurement of cathodic protection – WCG conducts pipe to soil potential reads at fixed test points at least once each quarter in all areas of Mather and at Castle. Instant Off Potential reads are taken at least once each year.

Periodic Measurement – WCG will take pipe to soil readings 6 times per year in the industrial area and housing area of Mather and 6 times per year at Castle. The instant-off "IR Drop" measurement will be taken at least once per year at the Mather housing area and at Castle. An IR drop in the industrial area will be taken at least once every 3 years.

Attachment D

Quality Information
TU Area P01 WCG
Area is P01

03/19/2014 to 02/16/2014

	Btu Content	Specific Gravity	N2	CO2				I-	N-	I-	N-	
	<u>per std cf</u>	<u>density</u> <u>air=1.0</u>	mole %	mole %	Methane	Ethane	Propane	Butane	Butane	Pentane	Pentane	C6+
					mole %	mole %	mole %	mole %	mole %	mole %	mole %	mole %
03/19/2014	1,023.30	0.581	0.75	0.75	95.49	2.9	0.09	0.01	0.01	0	0	
03/18/2014	1,021.41	0.58	0.92	0.69	95.56	2.66	0.13	0.01	0.02	0	0	
03/17/2014	1,018.14	0.578	1.08	0.61	95.72	2.47	0.08	0.01	0.01	0	0	
03/16/2014	1,026.91	0.581	0.54	0.76	95.49	3.11	0.08	0.01	0.01	0	0	
03/15/2014	1,028.86	0.583	0.55	0.8	95.1	3.46	0.07	0.01	0.01	0	0	
03/14/2014	1,020.62	0.578	0.72	0.72	95.96	2.52	0.07	0.01	0.01	0	0	
03/13/2014	1,023.12	0.58	0.7	0.76	95.58	2.86	0.08	0.01	0.01	0	0	
03/12/2014	1,026.77	0.581	0.58	0.78	95.35	3.18	0.09	0.01	0.01	0	0	
03/11/2014	1,023.90	0.58	0.73	0.69	95.62	2.84	0.11	0.01	0.01	0	0	
03/10/2014	1,024.58	0.58	0.69	0.69	95.61	2.87	0.11	0.01	0.01	0	0	
03/09/2014	1,023.43	0.579	0.65	0.72	95.74	2.79	0.08	0.01	0.01	0	0	
03/08/2014	1,017.49	0.58	1.25	0.65	95.38	2.57	0.12	0.01	0.01	0	0	
03/07/2014	1,005.20	0.584	2.44	0.55	94.54	2.26	0.16	0.02	0.02	0.01	0	0
03/06/2014	1,000.38	0.584	2.77	0.52	94.47	1.99	0.18	0.02	0.02	0.01	0	0
03/05/2014	1,000.99	0.584	2.71	0.53	94.52	2	0.18	0.02	0.02	0.01	0	0
03/04/2014	1,002.39	0.583	2.6	0.53	94.6	2.02	0.19	0.02	0.02	0.01	0	0
03/03/2014	1,002.06	0.583	2.6	0.53	94.62	2	0.18	0.02	0.02	0.01	0	
03/02/2014	1,007.21	0.583	2.24	0.57	94.69	2.28	0.17	0.02	0.02	0.01	0	0
03/01/2014	1,011.91	0.584	1.92	0.63	94.66	2.59	0.15	0.02	0.02	0	0	
02/28/2014	1,013.07	0.584	1.85	0.65	94.65	2.65	0.16	0.02	0.02	0.01	0	0
02/27/2014	1,008.29	0.582	2.06	0.56	94.97	2.2	0.16	0.02	0.02	0	0	

26/2014	1,022.98	0.578	0.69	0.62	95.97	2.59	0.1	0.01	0.01	0	0
25/2014	1,023.50	0.578	0.65	0.65	96.01	2.53	0.12	0.02	0.02	0	0

Attachment E

<u>Period</u>	<u>Item</u> <u>Reviewed</u>	<u>Changes</u>	<u>Reviewers</u>
2012	2011 OC Program	No Changes	RJC + MW
2011	2010 OC Program	Added new OC test Forms	MW
2010	2009 OC Program		

Changes Made in 2010:

1. Corrected covered employee names. RJC
2. Added Abnormal Operating Conditions to the following areas:
 - a. 192.317
 - b. 192.321
 - c. 192.461
 - d. 192.353
 - e. 192.355
 - f. 192.361
 - g. 192.463
 - h. 192.463
 - f. 192.465
 - g. 192.481
3. Changed identification of covered employee allowed to perform "Joining of Materials Other Than Welding".
4. Add "Other Maintenance Training" section.
5. Expanded the scope of covered employee duties section.

Review and changes by Ray Czahar and Mark Williams..