STATE OF WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION
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June 9, 2017

Eric Martuscelli
Vice President-Operations
Cascade Natural Gas Corporation
8113 W. Grandridge Blvd
Kennewick, WA 99336

Dear Mr. Martuscelli:

RE: 2017 National Response Center Incident No. 1169311 – Cascade Natural Gas Company, Wenatchee District – (Investigation No. 7434)

WUTC staff (staff) have concluded our investigation of the January 19, 2017 incident which occurred at 1317 South Hills Drive in Wenatchee. This incident was reportable due to the estimated unintentional natural gas loss of more than 3MMcf. The incident was caused by the separation of a two-inch steel main which was the result of a poor quality weld.

Staff is concerned about the quality of other welds in CNGC's system, including other welds made by the same welder who produced the 1317 South Hill Drive weld. Please confirm what steps CNGC has taken to address weld quality concerns. Please describe CNGC's approach to identifying the potential extent of this threat and confirm what steps CNGC will take to mitigate the threat. Staff would also like to know if this incident will cause you to direct a modification of CNGC's Distribution Integrity Management Program (DIMP).

Please respond to this request within Thirty (30) days. Staff thanks CNGC's personnel for their cooperation and assistance during this investigation.

If you have any questions or if we may be of any assistance, please contact Scott Rukke at (360) 664-1241.

Sincerely,

Sean C. Mayo
Pipeline Safety Director

cc: Mike Eutsey, Director, Operations Services, CNGC
Jeremy Ogden, Director, Engineering Services, CNGC
Ryan Privratsky, Director, System Integrity, CNGC
Chris Grissom, Manager, Standards and Compliance, CNGC
Sam Hamilton, Pipeline Safety Specialist, CNGC

UTC Incident Investigation Form

Notification ID:	3112 NRC #1169311	**Investigation ID:**	7434

Inspector Name:	Scott Rukke 360-664-1241 360-870-4923 srukke@utc.wa.gov
Date Report Submitted to Chief Engineer:	6/8/2017
Date Report Reviewed & Approved by Chief Engineer:	6/9/2017 Joe Subsits

Operator:	Cascade Natural Gas - 2128
District/Unit:	Wenatchee
Locations:	1317 South Hills Ave, Wenatchee WA
Incident Dates:	January 19, 2017

Description:

Prior to failed specimen exam - A two-inch steel main separated underground due to unknown reasons, potentially weather/frost heave related. An approximately 4" gap was present when the main was exposed. A bypass was installed around the pipeline due to it being a one way feed. This increased the time the gas was released and resulted in over 3mmcf being released which met the definition of an incident requiring NRC reporting.

After close examination and CNG engineering analysis - After a close examination of the failed specimen it was determined that the weld failed due to inadequate to no penetration of the pipe face at the butt weld. Some portions of the weld had only the weld cap and no pipe face penetration of the filler metal. Although pre code pipe installed in 1967, the specimen examined did not meet API 1104 or CFR Part 192, Appendix C requirements. This combined with extremely cold weather and a frost line that extended below the depth of the buried pipeline caused the minimally joined weld surfaces to fracture and pull apart.

In addition – CNGC has plans to replace the entire development of similar vintage steel pipeline mains and services and the project is currently out for bid.

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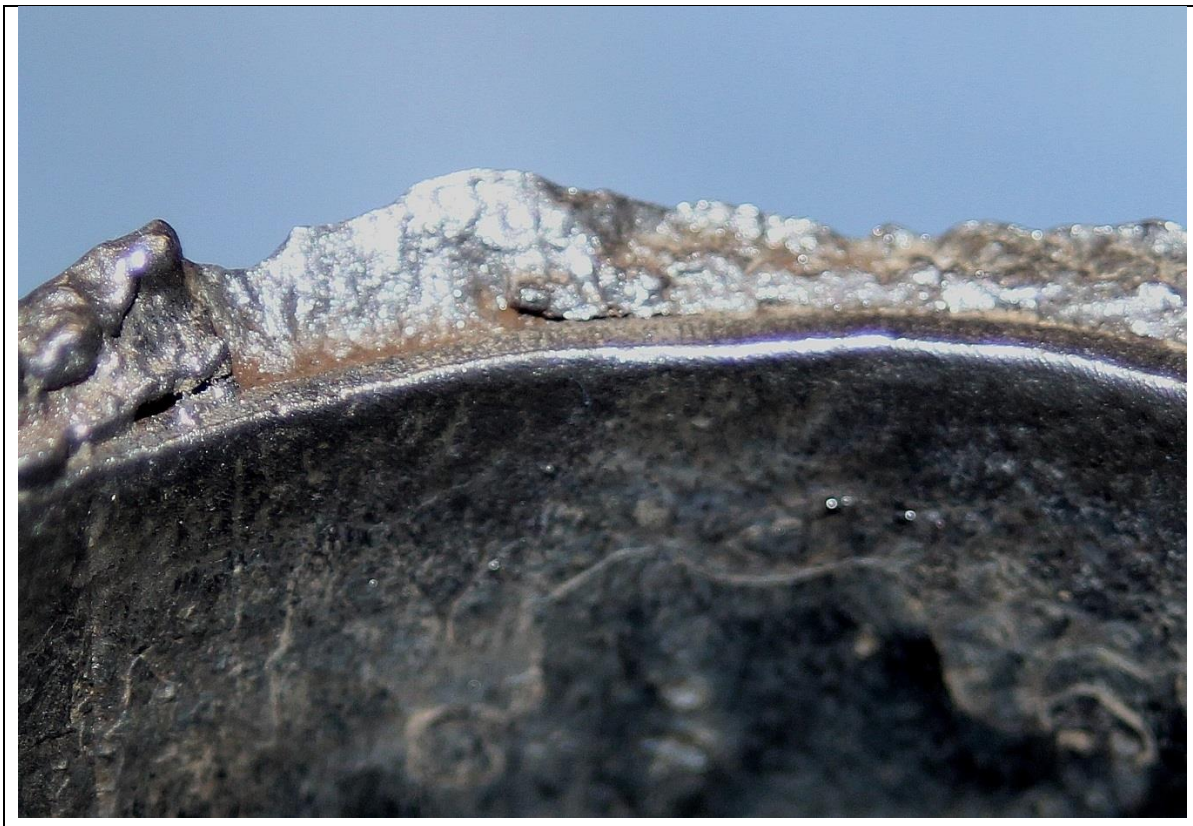

Facts/Chronology of Events:

CNG was notified of an odor at 7:24 AM on January 19, 2017
CNG arrived on site at 7:50 AM on January 19, 2017.
CNG pinpointed the leak and built a bypass around it which shut down the leak at 9:30 PM on January 19, 2017.
CNG reported the leak as a "State" reportable incident at 10:40 PM on January 19, 2017. UTC engineer Scott Rukke took the call.
After a post incident review it was realized by CNG personnel that over 3mmcf of gas had escaped which met the threshold of a reportable incident. The NRC was notified on January 23, 2017.
CNG removed the failed sample and prepared it for shipment to a laboratory in Portland OR. The sample had been moved to Kennewick, WA on 1/26/2017.
UTC inspector met with CNG personnel in Kennewick WA and reviewed their plan to deal with the separated pipeline. The sample was also photographed on 1/26/2017.
UTC inspector Scott Rukke went to the leak site in Wenatchee WA and met with the CNG crew that was still aspirating residual gas from the ground on 1/26/2017.
CNG Engineering Department analysis of the failure received on 4/27/2017.

Causes/Contributing Factors:

Inadequate fusion of the weld filler metal to the pipeline.
Inadequate penetration of the root pass.

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Extreme weather conditions with a frost line that extended below the depth of the pipeline put excessive stress on the weld where it cracked and separated.

Regulatory Analysis/ Violations:

None at this time. This pipeline was installed in 1967 and was pre code.

Follow up/ Recommendations:

CNG took appropriate action and removed and replaced the failed weld.
CNG will conduct weekly leak surveys until the lab analysis is completed.
If it is determined that it failed due to poor workmanship on the weld it is anticipated that CNG will replace the entire segment of pipeline that was installed in 1967. This includes 2,700 ft. of main.
Also discussed was removing and testing additional welds which was agreed would be the second option if the entire segment is not replaced. UTC staff and CNG will discuss once the lab analysis is completed.
It was noted to CNG that once CNG receives the lab analysis it should be submitted to the UTC within 5 days per WAC code.

4/27/2017 – CNG instead did an in house analysis of the failure cause. It was concluded by their engineering department that the cause was a poor quality weld with inadequate penetration. No lab analysis by an outside third party was conducted. UTC Staff expressed our concern regarding CNG's decision to not have a third party exam conducted although it was evident by close examination of the failed specimens that the weld was of extremely poor quality with minimal penetration on the butt weld surfaces. The poor weld combined with extremely cold weather and a frost line that extended below the depth of the main resulted in the weld failing.