



STATE OF WASHINGTON  
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION  
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Ref. No. Docket PG-100042

**CERTIFIED MAIL**

May 4, 2012

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

Dear Mr. Martuscelli:

**RE: 2010 Natural Gas Standard Inspection – Cowlitz District**

We conducted a standard natural gas safety inspection on December 6-10 & 13-17, 2010, and January 5, 2011 of the Cascade Natural Gas, Cowlitz District pipeline system. The inspection included a records review and inspection of the pipeline facilities.

Our inspection indicates 17 probable violations as noted in the enclosed report. We also noted 5 areas of concern, which unless corrected, could potentially lead to future violation of state and/or federal pipeline safety rules.

We have decided not to take additional enforcement action at this time due to the extreme time lag in issuing this findings letter. Although not part of the original complaint, it is my assumption that many of these items can be remediated under programs established as part of the commission approved settlement under docket PG-110443. We advise you however to take any steps necessary to correct the deficiencies noted.

Docket number PG-100042 will be closed as of May 4, 2012.


If you have any questions, or if we may be of any assistance, please contact Stephanie Zuehlke at (360) 664-1318.



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Please refer to Docket PG-100042 in any future correspondence regarding this inspection.

Sincerely,

A handwritten signature in black ink, appearing to read "David D. Lykken". The signature is written in a cursive style with a large initial "D".

David D. Lykken  
Pipeline Safety Director

cc. Steve Kessie, Manager-Operations Services, Cascade Natural Gas Corp.

Enclosure

**WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION**  
**2010 Natural Gas Pipeline Safety Inspection**  
**Cascade Natural Gas – Cowlitz District**  
**Docket PG-100042**

The following probable violations (PV) and areas of concern of Title 49, CFR Part 192 and WAC 480-93 were noted as a result of the inspection of Cascade Natural Gas (CNG) – Cowlitz District. The inspection included a random selection of records, operation and maintenance, emergency response, inventory and field inspection of the pipeline facilities.

**PROBABLE VIOLATIONS**

1. **WAC 480-93-013 Covered tasks.**

- (1) *Background. 49 CFR §§ 192.803 through 192.809 prescribe the requirements associated with qualifications for gas pipeline company personnel to perform "covered tasks." 49 CFR § 192.801 contains a definition of "covered task." In WAC 480-93-999, the commission adopts 49 CFR §§ 192.801 through 192.809. However, in this section, the commission includes "new construction" in the definition of "covered task."*
- (2) *Accordingly, for the purpose of this chapter, the commission defines a covered task that will be subject to the requirements of 49 CFR §§ 192.803 through 192.809 as an activity, identified by the gas pipeline company, that:*
  - (a) *Is performed on a gas pipeline;*
  - (b) *Is an operations, maintenance, or new construction task;*
  - (c) *Is performed as a requirement of Part 192 CFR; and*
  - (d) *Affects the operation or integrity of the gas pipeline.*
- (3) *In all other respects, the requirements of 49 CFR §§ 192.801 through 192.809 apply to this chapter.*
- (4) *The equipment and facilities used by a gas pipeline company for training and qualification of employees must be similar to the equipment and facilities on which the employee will perform the covered task.*

**Finding(s):**

CNG failed to provide records evidencing all personnel performing covered tasks were qualified to complete covered task duties.

- a. Summer help employee with the initials B. B. completed applied cold-tape tasks associated with OQ Task 1280DOT from 09.17.10 through 08.15.10 without qualifications to complete this covered task or under the direct supervision and observation by a person qualified to complete this task.
- b. Summer help employee with the initials D. B. completed applied cold-tape tasks associated with OQ Task 1280DOT from 06.23.10 through 09.07.10 without qualifications to complete this covered task or under the direct supervision and observation by a person qualified to complete this task.

- c. Summer help employee with the initials B.B. completed atmospheric corrosion tasks associated with OQ Task 1260DOT for approximately 5 weeks in 2010 without qualifications to complete this covered task or under the direct supervision and observation by a person qualified to complete this task.
- d. Summer help employee with the initials D.B. completed atmospheric corrosion tasks associated with OQ Task 1260DOT for approximately 4 weeks in 2010 without qualifications to complete this covered task or under the direct supervision and observation by a person qualified to complete this task.

2. **WAC 480-93-018 Records.**

- (1) *Each gas pipeline company must maintain records sufficient to demonstrate compliance with all requirements of 49 CFR §§ 191, 192 and chapter 480-93 WAC.*
- (2) *Each gas pipeline company must give the commission access to records for review during an inspection and must provide the commission copies of records upon request.*
- (3) *Each gas pipeline company must maintain a list of forms and data bases, including examples where applicable, that specify what records the company maintains. Each gas pipeline company must make this list available to the commission upon request.*
- (4) *Each gas pipeline company must record and maintain records of the actual value of any required reads, tests, surveys or inspections performed. The records must include the name of the person who performed the work and the date the work was performed. The records must also contain information sufficient to determine the location and facilities involved. Examples of the values to be recorded include, but are not limited to, pipe to soil potential reads, rectifier reads, pressure test levels, and combustible gas indicator reads. A gas pipeline company may not record a range of values unless the measuring device being used provides only a range of values.*
- (5) *Each gas pipeline company must update its records within six months of when it completes any construction activity and make such records available to appropriate company operations personnel.*
- (6) *If a gas pipeline company believes a record provided to the commission is confidential as that term is defined in WAC 480-07-160(2), the gas pipeline company must follow the procedures in WAC 480-07-160 for designating and treating that record as confidential.*

1. **Finding(s):**

CNG failed to provide staff with copies of records, information and data. Staff identified regulator/relief set point issues in a previous violation reports under Dockets UG-010113, UG-020706, and PG-100043. Refer to **PV 10 (192.201 Required Capacity of Pressure Relieving and Limiting Stations).**

Staff expectations are that CNG's corrective action regarding this PV will be addressed under item four of the commission approved settlement agreement (Docket PG-110443).

2. **Finding(s):**

CNG failed to record complete and accurate pressure test data for the Woodland upgrade project. The pressure test chart data does not contain tested pipe sizes and the lengths/footages installed. Approximately 2200' of pipeline was installed ranging from 1" – 4". Pressure test records identify the pipeline was tested at 375psig and 100psig but the actual pressure test chart shows the pipeline was tested at 400psig and 115psig.

3. **Finding(s):**

CNG failed to follow procedures in CP 665 for testing 2009 replacement of 1329 ft. 12" pipeline at I-5 & STH 432 in Kelso. There was no explanation or analysis records of pressure test data approving or rejecting a pressure loss of 10psig. (1030 psig test-on / 1020 psig test-off).

4. **Finding(s):**

CNG failed to update records, including maps and drawings within 6 months of completion of construction. Staff noted the following service records had not been updated as of December 2010.

No.	Street Address	City	Constr. Records Update Request	Request Number
a.	124 N 1 <sup>st</sup>	Kalama	09.13.07	0031640
b.	807 Mill St	Kelso	12.31.07	0031932
c.	1004 S 4 <sup>th</sup>	Kelso	12.31.07	0031927
d.	1113 S 7 <sup>th</sup> Ave	Kelso	12.31.07	0031928
e.	1111 S 7 <sup>th</sup> Ave	Kelso	12.31.07	0031929
f.	1109 S 7 <sup>th</sup>	Kelso	12.31.07	0031930
g.	3173 Ocean Beach	Longview	06.16.07	0031234
h.	1000 ½ Willow	Kelso	07.18.07	0031351
i.	1517 N 3 <sup>rd</sup>	Kelso	01.24.08	0031990
j.	614 S 7 <sup>th</sup>	Kelso	12.31.07	0031931
k.	710 Willow	Kelso	09.14.07	0031644
l.	311 Willow	Kelso	09.14.07	0031645
m.	303 Hawthorne	Kelso	09.19.07	0031654
n.	807 Mill	Kelso	09.19.07	0031657
o.	2719 Fir	Longview	10.04.07	0031694
p.	3109 Fir	Longview	10.03.07	0031689
q.	1325 30 <sup>th</sup>	Longview	10.04.07	0031696
r.	3007 Hemlock	Longview	10.04.07	0031698
s.	1120 15 <sup>th</sup>	Longview	10.03.07	0031688
t.	380 California	Longview	10.04.07	0031700

u.	1065 12 <sup>th</sup>	Longview	10.05.07	0031702
v.	1063 12 <sup>th</sup>	Longview	10.;05.07	0031701
w.	1117 Ocean Beach	Longview	10.08.07	0031704
x.	3109 Fir	Longview	10.03.07	0031689
y.	2227 38 <sup>th</sup>	Longview	03.14.08	0032118
z.	3284 Oak	Longview	03.13.08	0032112
aa.	1103 S 7 <sup>th</sup>	Kelso	12.27.07	0031902
bb.	1045 33 <sup>rd</sup>	Longview	07.30.07	0031413
cc.	2556 Cascade Way	Longview	07.30.07	0031404
dd.	1308 Castleman	Longview	07.30.07	0031405
ee.	1226 Castleman	Longview	07.30.07	0031407
ff.	2633 Garfield	Longview	07.30.07	0031409
gg.	2620 Garfield	Longview	07.30.07	0031410
hh.	2523 Peters Dr	Longview	07.24.07	0031381
ii.	4 & 5 Park Ct	Longview	07.24.07	0031385
jj.	2461 Paradise Dr	Longview	07.24.07	0031382
kk.	2415 Park Hill	Longview	07.24.07	0031383
ll.	1720 Ocean Beach	Longview	07.03.07	0031147
mm.	94 Oregon Way	Longview	07.16.07	0031269
nn.	1500 Block of 9 <sup>th</sup> S End	Longview	07.17.07	0031287
oo.	1252 14 <sup>th</sup>	Longview	07.17.07	0031286
pp.	Atlantic & Goerig Sts.	Longview	Casing	
qq.	Buland Dr. & Powell Rd. – SE corner	Longview	Casing	
rr.	R-03 E of 841 3rd Ave	Longview	Casing	

5.

**Finding(s):**

CNG failed to update records, including maps and drawings within 6 months of completion of construction. Staff noted the following casing records had not been updated as of December 9, 2010. (Grid map numbers referencing the casing map locations should be updated from Old to New map number on Annual Casing Survey Report Forms.)

No.	Casing Location	City	Grid Map No.		Date
			Old	New	
a.	Buland Dr. & Powell	Castlerock	3	H-15	04.23.07
b.	Pioneer / Powell	Castlerock	3	H-15	04.23.07
c.	OregonWy / Ditch 3	Longview	93	Q-11	04.23.07
d.	Port of Longview / Industrial Wy RRxing	Longview	93	Q-11	04.23.07
e.	Fibre Wy at Fibre RRxing	Longview	97	R-12	04.23.07
f.	RRxing at R-4	Longview	79	O-13	04.23.07
g.	850 3 <sup>rd</sup> Ave	Longview	69	O-12	04.23.07

h.	Columbia Hgts / Laurel	Longview	35	I-11	04.23.07
i.	Ocean Beach / 42 <sup>nd</sup>	Longview	139	I-07	04.23.07
j.	3401 Industrial Wy / R-38	Longview	158	M-08	04.23.07

6. **Finding(s):**  
CNG failed to maintain records for the service located at 1170 15th Ave., Longview.

7. **Finding(s):**  
CNG records fail to specify the shatter pressure and/or color code of the fracture disk on the Fisher 634 High Pressure Shut-off Valve downstream of Regulator Station R-08. (CNG Regulator Station Facility Maintenance & Inspection Records identify it as ¾” Fisher 634 Burst Disk.) CNG should evaluate the shatter pressure of the fracture disk to ensure it meets with pressure requirements.

8. **Finding(s):**  
CNG failed to record accurate set pressures for Regulator Station R-43. The pressure tag at R-43 identifies that it is set at 16psig but the regulator station set point list identifies the set pressure at 35psig.

9. **Finding(s):**  
CNG failed to accurately record their inlet MAOP (in CNG’s Regulator Set Point List) and/or correct (or notify) Williams (in Williams Delivery/Alarm List) outlet MAOP for Regulator Station R-21. CNG identifies their inlet MAOP as 152psig. Williams identifies their outlet as 150psig.

3. **WAC 480-93-110 Corrosion control.**

(3) *Cathodic protection equipment and instrumentation must be maintained, tested for accuracy, calibrated, and operated in accordance with the manufacturer's recommendations. When there are no manufacturer's recommendations, then instruments must be tested for accuracy at an appropriate schedule determined by the gas pipeline company.*

1. **Finding(s):**  
CNG failed to provide annual half-cell calibration records for their Contractor (Snelson). There are no half-cell calibration records for 2010. Three half-cells show they were last calibrated in 2009 and two half-cells show they were last calibrated in 2008. No half-cell retirement records were provided. Incomplete half-cell calibration records for 2009 (only three half-cells show calibration).

2. **Finding(s):**  
CNG failed to provide annual volt meter calibration records for 2010 for their Contractor (Snelson).

4. **WAC 480-93-124 Pipeline markers.**

(5) *Each gas pipeline company must replace markers that are reported damaged or missing within forty-five days.*

**Finding(s):**

Although this District is aware of, and documenting missing or damaged markers, they failed to replace the markers within 45 days (Form 305G Service Requests noted as incomplete December 2010).

No.	Street (Location)	City	Date of Service Request	Service Order No.
a.	2944 Ocean Beach Hwy # Stub	Longview	10.05.10	8616720275
b.	3056 Ocean Beach Hwy	Longview	10.05.10	0716720569
c.	3184 Ocean Beach Hwy	Longview	10.05.10	1716720712
d.	Nebraska & OBH RRxing	Longview	10.04.10	5214463622
e.	38 <sup>th</sup> & OBH	Longview	10.06.10	5214463957
f.	4" HP Main at End of Condos	Longview	10.05.10	5214463045
g.	Schurman Way - Multiple Stubs	Woodland	07.17.07	0031313
h.	Sherman Way – 12 Stubs	Woodland	07.22.10	3253910400
i.	Valve Marker A-1	Kalama	07.23.10	4098974293
j.	S Side 48 <sup>th</sup> & OBH	Longview	10.06.10	5214463088
k.	End of 4" HP Main Past Lakeside	Longview	10.05.10	5214463801
l.	S Side 42 <sup>nd</sup> & OBH	Longview	10.05.10	5214463952
m.	2" OBH xing at 4503 N & S Sides	Longview	10.05.10	5214463663
n.	2" Hwy xing at 36 <sup>th</sup> & Ocean Beach Hwy	Longview	10.05.10	5214463141
o.	6" IP & 12" HP SR 432 to Talley Way	Kelso	09.24.10	6387927525
p.	223 Hawthorne St	Kelso	09.01.10	0417720982
q.	2614 Ocean Beach Hwy at Hwy xing 11-L	Longview	09.01.10	5214463702
r.	8" HP Rdxing at Cottonwood Dr.	Kalama	07.30.10	4098974883
s.	End of 8" HP off Tradewinds Rd 0-DD	Kalama	07.30.10	4098974058
t.	8" HP at Hendrickson Rdxing next to R-37, 0-CC	Kalama	07.30.10	4098974700
u.	3229 Washington Way	Longview	05.22.10	0034485
v.	E of 2319 Hendrickson where 8" turns S & goes under fence and RR tracks, 1-BB	Kalama	07.30.10	4098974554
w.	2615 Hendrickson Dr, 0-CC	Kalama	07.23.10	4098974496
x.	Possible 2" Main S of 2614 Hendrickson Dr – Mark EOM	Kalama	07.23.10	4098974622
y.	O-4 on Elevator Dr,	Kalama	07.23.10	4098974664



z.	2614 Hendrickson Dr, 0-CC	Kalama	07.23.10	4098974919
aa.	7-2" Stubs on Grid 0-BB	Kalama	07.23.10	4098974522
bb.	2944 O.B Hwy	Longview	10.02.10	8616720275
cc.	3184 #A O.B Hwy	Longview	10.02.10	1716720712
dd.	3056 O.B Hwy	Longview	10.02.10	0716720569

5. **WAC 480-93-170 Tests and reports for pipelines.**

(10) *Pressure testing equipment must be maintained, tested for accuracy, or calibrated, in accordance with the manufacturer's recommendations. When there are no manufacturer's recommendations, then pressure testing equipment must be tested for accuracy at an appropriate schedule determined by the gas pipeline company. Test equipment must be tagged with the calibration or accuracy check expiration date. The requirements of this section also apply to equipment such as pressure charts, gauges, dead weights or other devices used to test, monitor or check system pressures or set-points.*

1. **Finding(s):**

CNG failed to provide 2010 pressure gauge calibration records for CNG Contractor (Snelson).

2. **Finding(s):**

CNG Contractor (Snelson) failed to record the name of the employee responsible for completing the pressure test on the 2009 Wal-Mart pipeline project. The employee responsible was indicated as "Snelson."

6. **WAC 480-93-180 Plans and procedures.**

(1) *Each gas pipeline company must have and follow a gas pipeline plan and procedure manual (manual) for operation, maintenance, inspection, and emergency response activities that is specific to the gas pipeline company's system. The manual must include plans and procedures for meeting all applicable requirements of 49 CFR §§ 191, 192 and chapter 480-93 WAC, and any plans or procedures used by a gas pipeline company's associated contractors.*

(2) *The manual must be filed with the commission forty-five days prior to the operation of any gas pipeline. Each gas pipeline company must file revisions to the manual with the commission annually. The commission may, after notice and opportunity for hearing, require that a manual be revised or amended. Applicable portions of the manual related to a procedure being performed on the pipeline must be retained on-site where the activity is being performed.*

(3) *The manual must be written in detail sufficient for a person with adequate training to perform the tasks described. For example, a manual should contain specific, detailed, step-by-step instructions on how to maintain a regulator or rectifier, conduct a leak survey or conduct a pressure test.*

1. **Finding(s):**  
CNG failed to identify the business district located at 29th Ave. & 30th Ave., Longview, in accordance with procedure CP 715.
2. **Finding(s):**  
CNG failed to record pressure test documentation in accordance with procedures CP 665 for their Woodland upgrade project. The pressure test chart did not contain pipe sizes and lengths/footages installed.
3. **Finding(s):**  
CNG failed to test the service at 301 Crawford, Kelso, in accordance with procedure CP 665. This service was pressure tested at 80 psig. The procedure requires testing of 90 psig-100psig for PE and 90 psig-125psig for steel services. The MAOP of this service is identified as 40 psig.
4. **Finding(s):**  
CNG failed to update their procedures CP 710 Coating and Painting Standards. This procedure fails to accurately reflect the type of paint and the manner of application of the coating process actually used by CNG.
5. **Finding(s):**  
CNG failed to assess wall loss due to atmospheric corrosion in accordance with procedure CP 754. Wall loss measurements were not taken (while active).
  - a. R-03, Longview
    - i. Wall loss >35% (0.054) on a 2 X 2 weld tee (w.t. = 0.154).
    - ii. Wall loss >28% (0.043) on schedule 40 pipe (w.t. = 0.154).
  - b. 1170 15th Ave., Longview
    - i. Wall loss >15% (0.020) & >22% (0.030) on riser (w.t. = 0.133)
  - c. 603 Royal St. W., Longview
    - i. Wall loss measurements not provided to staff
6. **Finding(s):**  
CNG procedures fail to include a process for taking an accurate wall loss measurement appropriate to the nature and particular location of the corrosion. CNG field personnel were unable to take accurate wall loss measurements at R-03 in Longview, 1170 15<sup>th</sup> Ave., Longview, and 603 Royal St. W., Longview, with a pit gauge measuring tool because of the corrosion proximity to tees, fittings, etc. Therefore, no atmospheric corrosion control remediation assessment could be determined in accordance with procedure CP 754.

7. **Finding(s):**  
 CNG failed to test their pyrometers for accuracy in accordance with procedure CP 756.032. CNG Pyrometer Fluke 51 II – SN 83530056 exceeded the quarterly calibration frequency.
- a. February 20, 2008 – January 27, 2009
  - b. June 25, 2010 – November 9, 2010
8. **Finding(s):**  
 CNG failed to ensure their contractor (Snelson) tested their pyrometers for accuracy in accordance with procedure CP 756.032. Snelson pyrometers were tested annually rather than quarterly.
- a. 2008
    - i. Pyrometer SN 43-1
    - ii. Pyrometer SN 43-3
    - iii. Pyrometer SN 51-1
  - b. 2009
    - i. Pyrometer SN 43-1
    - ii. Pyrometer SN 43-3
    - iii. Pyrometer SN 51-1
  - c. 2010
    - i. Pyrometer SN 43-1
    - ii. Pyrometer SN 43-3
    - iii. Pyrometer 51-1

7. **WAC 480-93-188 Gas leak surveys.**

- (1) *Each gas pipeline company must perform gas leak surveys using a gas detection instrument covering the following areas and circumstances:*
- (a) *Over all mains, services, and transmission lines including the testing of the atmosphere near other utility (gas, electric, telephone, sewer, or water) boxes or manholes, and other underground structures;*
  - (b) *Through cracks in paving and sidewalks;*
  - (c) *On all above ground piping (may be checked with either a gas detection instrument or with a soap solution);*
  - (d) *Where a gas service line exists, the gas pipeline company must conduct a leak survey at the building wall at the point of entrance, using a bar hole if necessary; and*
  - (e) *Within all buildings where gas leakage has been detected at the outside wall, at locations where escaping gas could potentially migrate into and accumulate inside the building.*
- (2) *Each gas pipeline company must maintain, test for accuracy, calibrate and operate gas detection instruments in accordance with the manufacturer's recommendations. If there are no written manufacturer's recommendations or schedules, then the gas pipeline company must test such instruments for accuracy at least monthly, but not to exceed forty-five days between testing, and at least*

twelve times per year. The gas pipeline company must recalibrate or remove from service any such instrument that does not meet applicable tolerances. Records of accuracy checks, calibration and other maintenance performed must be maintained for five years.

- (3) Each gas pipeline company must conduct gas leak surveys according to the following minimum frequencies:
- (a) Business districts - at least once annually, but not to exceed fifteen months between surveys. All mains in the right of way adjoining a business district must be included in the survey;
  - (b) High occupancy structures or areas - at least once annually, but not to exceed fifteen months between surveys;
  - (c) Gas pipelines operating at or above two hundred fifty psig - at least once annually, but not to exceed fifteen months between surveys;
  - (d) Where the gas system has cast iron, wrought iron, copper, or noncathodically protected steel - at least twice annually, but not to exceed seven and one-half months between surveys; and
  - (e) Unodorized gas pipelines - at least monthly.

1. **Finding(s):**

CNG failed to conduct annual (NTE 15 mos.) business district leak surveys of all mains in the right-of-way adjoining the small business district located at 29<sup>th</sup> Ave. & 30<sup>th</sup> Ave., Longview.

2. **Finding(s):**

CNG failed to conduct annual (NTE 15 mos.) leak surveys for services within a business district.

- a. 475 29<sup>th</sup> Ave., Longview – Hair Hut (Meter less riser)
- b. 216 30<sup>th</sup> Ave., Longview – Longview Police Department (Meter #276054)
- c. 216 30<sup>th</sup> Ave., Longview – Convenience Store (adjoining structure to Longview Police Department)
- d. 1170 15th Ave., Longview – Tent & Rentals Company

8. **49 CFR §192.03 Definitions.**

*Transmission line means a pipeline, other than a gathering line, that: (1) Transports gas from a gathering line or storage facility to a gas distribution center, storage facility, or large volume customer that is not down-stream from a gas distribution center; (2) operates at a hoop stress of 20 percent or more of SMYS; or (3) transports gas within a storage field.*

**Finding(s):**

CNG failed to determine high pressure distribution pipelines a. and b. (in below Table) are transmission pipelines operating at or above 20% SMYS. CNG used unsubstantiated (unknown) yield strength and wall thickness data in their strength calculations. (The entire below Table, with the exception of the column “UTC % SMYS” is taken from CNG’s Natural Gas High Pressure (HP) Pipelines Table for the Longview District.)

**Cascade Natural Gas High Pressure (HP) Pipelines - Longview**

<b>Pipeline Name</b>	<b>Pipe O.D (inches)</b>	<b>Pipe w.t. (inches)</b>	<b>Yield Strength (psig)</b>	<b>MAOP (psig)</b>	<b>MAOP % SMYS</b>	<b>UTC MAOP % SMYS</b>
<b>a.</b> Longview/Kelso HP District Line 1	8.625	0.188**	35,000**	250	16.38	<b>23.89</b>
<b>b.</b> Longview/Kelso HP District Line 1	2.370	0.154**	35,000**	250	5.50	8.03
<b>c.</b> 4" Dike Rd. HP Line – Line 3	4.500	0.188**	25,000**	80	3.83	4.87
<b>d.</b> Kalama HP Line – Line 6	6.625	0.188	42,000**	300	12.59	<b>22.02</b>

\*\* Pipe information Unknown, Assumed Pipe Data based on typical pipe used for construction.

9. **49 CFR §192.107 Yield strength (S) for steel pipe.**

- (a) *For pipe that is manufactured in accordance with a specification listed in section I of Appendix B of this part, the yield strength to be used in the design formula in §192.105 is the SMYS stated in the listed specification, if that value is known.*
- (b) *For pipe that is manufactured in accordance with a specification not listed in section I of Appendix B to this part or whose specification or tensile properties are unknown, the yield strength to be used in the design formula in §192.105 is one of the following:*
  - (1) *If the pipe is tensile tested in accordance with section II-D of Appendix B to this part, the lower of the following:*
    - (i) *80 percent of the average yield strength determined by the tensile tests.*
    - (ii) *The lowest yield strength determined by the tensile tests.*
  - (2) *If the pipe is not tensile tested as provided in paragraph (b)(1) of this section, 24,000 psi (165 MPa).*

**Finding(s):**

CNG failed to accurately calculate the yield strength for pipe, when specifications or tensile properties are unknown. (The entire below Table is taken from CNG’s Natural Gas High Pressure (HP) Pipelines Table for the Longview District.)

PHMSA Interpretation 192.55 2 dated November 7, 1984, states, “. . . A larger question is whether §192.55 or other standards in Part 192 that affect design and construction even apply to the subject pipes. As provided by §§192.13, the design and construction related requirements of Part 192 would apply only if the subject pipes were either readied for service after March 12, 1971, or replaced, relocated, or otherwise changed after November 12, 1970. If not, then only the operation, maintenance, and corrosion control standards of Part 192 would apply to the subject pipes.”

**Cascade Natural Gas High Pressure (HP) Pipelines - Longview**

Pipeline Name	Pipe O.D (inches)	Pipe w.t. (inches)	Yield Strength (psig)	MAOP (psig)	MAOP % SMYS
a. Longview/Kelso HP District Line 1	8.625	0.188**	35,000**	250	16.38
b. Longview/Kelso HP District Line 1	2.370	0.154**	35,000**	250	5.50
c. 4" Dike Rd. HP Line – Line 3	4.500	0.188**	25,000**	80	3.83
d. Kalama HP Line – Line 6	6.625	0.188	42,000**	300	12.59

\*\* Pipe information Unknown, Assumed Pipe Data based on typical pipe used for construction.

10. **49 CFR §192.201 Required capacity of pressure relieving and limiting stations.**

(a) *Each pressure relief station or pressure limiting station or group of those stations installed to protect a pipeline must have enough capacity, and must be set to operate, to insure the following:*

- (1) *In a low pressure distribution system, the pressure may not cause the unsafe operation of any connected and properly adjusted gas utilization equipment.*
- (2) *In pipelines other than a low pressure distribution system:*
  - (i) *If the maximum allowable operating pressure is 60 p.s.i. (414 kPa) gage or more, the pressure may not exceed the maximum allowable operating pressure plus 10 percent or the pressure that produces a hoop stress of 75 percent of SMYS, whichever is lower;*
  - (ii) *If the maximum allowable operating pressure is 12 p.s.i. (83 kPa) gage or more, but less than 60 p.s.i. (414 kPa) gage, the pressure may not exceed the maximum allowable operating pressure plus 6 p.s.i. (41 kPa) gage; or*
  - (iii) *If the maximum allowable operating pressure is less than 12 p.s.i. (83 kPa) gage, the pressure may not exceed the maximum allowable operating pressure plus 50 percent.*

**Finding(s):**

Williams "Delivery/Alarm List" identifies R-21 relief device set-point (165psig) is at the MAOP (150psig) plus the maximum amount allowed for build-up in an emergency condition. This practice will not allow for proper build-up without potentially exceeding the MAOP plus the amount allowed for operation of the pressure-relieving device in an emergency condition. Pressure relieving devices must be set to operate to ensure that the pressure in the pipeline does not exceed the MAOP plus allowable buildup. CNG identifies this pipeline MAOP as 152psig.

Regulator Station	CNG MAOP	Williams MAOP	Relief Set Point
R-21	152psig	150psig	165psig

11. **49 CFR §192.323 Casing.**

*Each casing used on a transmission line or main under a railroad or highway must comply with the following:*

- (a) *The casing must be designed to withstand the superimposed loads.*
- (b) *If there is a possibility of water entering the casing, the ends must be sealed.*
- (c) *If the ends of an unvented casing are sealed and the sealing is strong enough to retain the maximum allowable operating pressure of the pipe, the casing must be designed to hold this pressure at a stress level of not more than 72 percent of SMYS.*
- (d) *If vents are installed on a casing, the vents must be protected from the weather to prevent water from entering the casing.*

**Finding(s):**

CNG failed to protect the entrance of water into their pipeline casing through casing vents at the Railroad (RR) Trestle west of I-5 on their South Longview Lateral – the vent was identified as having been under 5 feet of water on March 11, 2007.

12. **49 CFR §192.479 Atmospheric corrosion control; General.**

- (a) *Each operator must clean and coat each pipeline or portion of pipeline that is exposed to the atmosphere, except pipelines under paragraph (c) of this section.*
- (b) *Coating material must be suitable for the prevention of atmospheric corrosion.*
- (c) *Except portions of pipelines in offshore splash zones or soil-to-air interfaces, the operator need not protect from atmospheric corrosion any pipeline for which the operator demonstrates by test, investigation, or experience appropriate to the environment of the pipeline that corrosion will-*
  - (1) *Only be a light surface oxide; or*
  - (2) *Not affect the safe operation of the pipeline before the next scheduled inspection.*

**Finding(s):**

CNG failed to apply a suitable coating material for the prevention of atmospheric corrosion. Wall loss was noted at the following locations:

- a. R-03, Longview
- b. 1170 15th Ave., Longview
- c. 603 Royal St. W., Longview

13. **49 CFR §192.601 Operations.**

*This subpart prescribes minimum requirements for the operation of pipeline facilities.*

**Finding(s):**

CNG failed to comply with transmission operations requirements for transmission pipelines in accordance with 49 CFR §192 SubPart L – Operations. See PV's under 49 CFR §192.03 and 49 CFR §192.107.

- a. Longview/Kelso HP District Line 1.
- b. Kalama HP Line – Line 6.

14. **49 CFR §192.605 Procedural manual for operations, maintenance, and emergencies**

- (a) *General. Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. For transmission lines, the manual must also include procedures for handling abnormal operations. This manual must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least one each calendar year. This manual must be prepared before operations of a pipeline system commence. Appropriate parts of the manual must be kept at locations where operations and maintenance activities are conducted.*

**Finding(s):**

CNG failed to review their O&M Manual for calendar year 2010.

15. **49 CFR §192.701 Maintenance.**

*This subpart prescribes minimum requirements for maintenance of pipeline facilities.*

**Finding(s):**

CNG failed to comply with transmission pipeline maintenance requirements for transmission pipelines in accordance with 49 CFR §192 SubPart M - Maintenance. See PV's under 49 CFR §192.03 and 49 CFR §192.107.

- a. Longview/Kelso HP District Line 1.
- b. Kalama HP Line – Line 6.

16. **§192.739 Pressure limiting and regulating stations: Inspection and testing.**

- (a) *Each pressure limiting station, relief device (except rupture discs), and Pressure regulating station and its equipment must be subjected at intervals not exceeding 15 months, but at least once each calendar year, to inspections and tests to determine that it is-*
- (1) *In good mechanical condition;*
  - (2) *Adequate from the standpoint of capacity and reliability of operation for the service in which it is employed;*
  - (3) *Except as provided in paragraph (b) of this section, set to control or relieve at the correct pressure consistent with the pressure limits of §192.201(a); and*
  - (4) *Properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.*
- (b) *For steel pipelines whose MAOP is determined under §192.619(c), if the MAOP is 60 psi (414 kPa) gage or more, the control or relief pressure limit is as follows:*



<i><b>If the MAOP produces a hoop stress that is:</b></i>	<i><b>Then the pressure limit is:</b></i>
<i>Greater than 72 percent of SMYS</i>	<i>MAOP plus 4 percent.</i>
<i>Unknown as a percentage of SMYS</i>	<i>A pressure that will prevent unsafe operation of the pipeline considering its operating and maintenance history and MAOP.</i>

1. **Finding(s):**  
 CNG failed to maintain Regulator Station R-19 in good mechanical condition. CNG identified the relief stack weather/vent cap as an Abnormal Operating Condition (AOC) on 04.15.08 and created a work order to remediate. No remediation was completed as of December 2010.

2. **Finding(s):**  
 CNG failed to set the relief for Regulator Station R-21 at Powell Rd., Castlerock, in accordance with this regulation and/or failed to resolve the 2psig MAOP variance between CNG’s MAOP of 152psig and Williams MAOP of 150psig. The relief is set point is 165psig which is equal to the MAOP plus allowable build-up.

17. **49 CFR §192.901 What do the regulations in this subpart cover?**

*This subpart prescribes minimum requirements for an integrity management program on any gas transmission pipeline covered under this part.*

**Finding(s):**

CNG failed to comply with transmission pipeline integrity management requirements for transmission pipelines in accordance with 49 CFR §192 Subpart O--Gas Transmission Pipeline Integrity Management. Refer to **PV 8 (§192.03 Definitions)** and **PV 9 (§192.107 Yield strength (S) for steel pipe)**.

- a. Longview/Kelso HP District Line 1.
- b. Kalama HP Line – Line 6.

## AREAS OF CONCERN OR FIELD OBSERVATIONS

1. **49 CFR §192.16 Customer notification.**  
CNG failed to provide evidence that notices have been sent to customers within 90 days for 2008, 2009 and 2010. Corrective action regarding this AOC will be addressed under Docket PG-110443 Settlement Agreement item number Six.
  
2. **WAC 480-93-018 Records.**  
CNG failed to use Form 314 (it has not been filled out in its entirety) for odorization records. Capacity and Injection Odorizer information/data was not recorded on this Form. At the time of inspection, CNG identified this form for recording/maintaining odorization records but actually documented it elsewhere. CNG needs to update their records list to include how it intends to keep these records if no longer using Form 314 for this purpose.
  
3. **WAC 480-93-180 Plans and procedures.**  
CNG failed to monitor their Contractor (Snelson) pyrometer equipment calibration records. There were 3 pyrometers listed in their Contractor's calibration records that failed to identify the equipment had been retired from service.
  
4. **WAC 480-93-180 Plans and procedures.**  
CNG Engineering failed to provide a timely response to their District Manager's Integrity Management Dig Report (dated July 28, 2010) regarding severe pitting and the District's inability to measure wall loss due to the location of the pitting for high pressure pipeline (over 60 psig) at regulator station R-03 in Longview. Also identified in the report: the regulator station's downstream plug valve stem was broken and the valve did not function. Regulator station inlet MAOP = 250psig Outlet MAOP 80psig. The following measurements were taken (12.20.10) shortly after the regulator station was replaced.
  - a. Wall loss exceeded 35% (0.054) on a 2 X 2 weld tee (w.t. = 0.154)
  - b. Wall loss exceeded 28% (0.0435) on schedule 40 pipe (w.t. = 0.154)
  
5. **49 CFR §192.355 Customer meters and regulators: Protection from damage.**  
The following locations had regulators installed in a horizontal orientation:
  - a. 2401 Talley Way, Kelso
  - b. #290744
  - c. #588989 - Relief vent nearly fully closed by moss growth over screen