CASCADE NATURAL GAS CORPORATION

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July 3, 2006

Alan E. Rathbun
Pipeline Safety Director
Washington Utilities and Transportation Commission
P.O. Box 47250
1300 S. Evergreen Park Dr. SW
Olympia, WA 98504

Dear Mr. Rathbun:

Subject: **2006 Natural Gas Safety Inspection for Aberdeen District (PG-060217)**

Thank you for your report concerning the April 2006 inspection of our Aberdeen District. Cascade's responses to the findings of the report are as follows.

WUTC – Probable Violations

1. ***49 CFR §192.161 Supports and Anchors***
(c) Each support or anchor on an exposed pipeline must be made of durable, noncombustible material and must be designed and installed as follows:

WUTC Finding:
The gas meter at 101 E. Market Street in Aberdeen, was supported with two combustible wood blocks. CNG immediately replaced the blocks with concrete blocks.

Cascade Response:
As noted by staff the wood was taken out. Concrete blocks were not installed, because increased support was not needed.

2. ***49 CFR §192.463 External Corrosion Control: Cathodic Protection***
(a) Each cathodic protection system required by this subpart must provide a level of cathodic protection that complies with one or more of the applicable criteria contained in Appendix D of this part.

WUTC Finding:
Low pipe-to-soil (p/s) reads were found at the following locations in Hoquiam:
- 200 L Street, -.808 mV on the first meter and -.804 mV on the second meter
- 356 Emerson Ave, -.783 mV on the idle riser

RMS

- 101 W Emerson, -.699 mV
- 412 O Street, -.847 mV
- United Methodist Church located at L Street and 5th Street, -.835 mV
- The Timberland Bank on 7th Street , -.726 mV
- In the alley behind the Sweet and Deli Shop at the three meter manifold, -.823 mV
- Smith Harbor Drug and Gift in the alley, -.553 mV

CNG immediately investigated and found that impressed current system GB NO. 4 had been shorted by a lumber cable wrapped around a meter set. A review of CNG's Bi-Monthly Monitoring (rectifier) report indicates that the system was functioning correctly on 3/20/2006.

Cascade Response:
CNG disagrees that item number 2 is in violation of CFR 192.463. The cathodic protection system at Ground bed 4 experienced a deviation from normal cathodic protection levels caused by outside interference. Outside interference is a common concern for the efficient operation of a cathodic protection system. However these deviations from the normal cathodic protection levels did not exceed the ninety-day remediation action requirement per WAC 480-93-110 (2) and remediation action per CFR 192.465 (d).

As staff noted our prior monitoring cathodic protection levels were normal. During staff's inspection the cathodic protection levels were found to be below our normal cathodic protection levels. This was immediately investigated and fixed the following day.

3. ***49 CFR §192.481 Atmospheric Corrosion Control: Monitoring***

(a) Each operator must inspect each pipeline or portion of pipeline that is exposed to the atmosphere for evidence of atmospheric corrosion, as follows:

If the pipeline is located:	Then the frequency of inspection is:
Onshore	*At least once every 3 calendar years, but with intervals not exceeding 39 months*
Offshore	*At least once each calendar year, but with intervals not exceeding 15 months*

(b) During inspections the operator must give particular attention to pipe at soil-to-air interfaces, under thermal insulation, under disbonded coatings, ***at pipe supports****, in splash zones, at deck penetrations, and in spans over water.*
(c) If atmospheric corrosion is found during an inspection, the operator must provide protection against the corrosion as required by Sec. 192.479.

Finding(s):
Inspections for atmospheric corrosion under pipe supports had not been conducted at CNG regulator R01 (Aberdeen). We requested that the straps be removed to inspect for atmospheric corrosion. CNG respectfully declined, stating that previously they had investigated this issue at other sites and did not find atmospheric corrosion and that removing the straps could cause serious damage to the regulator stations.

Lack of inspection of pipe supports was also noted under Dockets PG-041532, PG-030438 and PG-030435. Each time, we requested that the support straps be removed to check for corrosion. In two cases, surface rust with minor corrosion was found. In one case the pipeline coating was flaking off under the support straps. CNG removed the support straps and inspected, cleaned and re -coated the pipeline. CNG's letter of intent dated June 18, 2004, committed to incorporate inspections of pipelines under supports, straps or other places where moisture accumulation is possible and could cause corrosion.

Cascade's Response:
During staff's inspection of Regulator Station R01 We did not feel it prudent to remove the pipe straps and supports for inspection by Staff. The pipe straps and supports would have to be permanently removed to perform the requested inspection.

Staff's statement that we do not inspect straps and supports is incorrect. CNG has been inspecting pipe supports and straps as part of our normal maintenance practices. In response to prior inspections by staff, we changed our procedures to include the removal of metal-to-metal pipe straps for inspection. We had not been finding corrosion or metal loss with those inspections. Many of the pipe supports and straps were permanently damaged in the process, requiring us to rebuild the supports.

Based upon our findings, we determined that the inspection of the pipe at supports does not require the removal of the straps. We adopted a policy to inspect under the strap without removing the strap. If any signs of wall loss corrosion are seen, then the strap is removed for further inspection.

Staff noted that our written procedures are not being followed concerning the inspection of pipe supports and straps. We were in the process of updating those procedures during Staff's inspections. We updated our Company Procedure 754 so our written procedure matches our field practices. (Attached)

4. ***49 CFR §192.491 Corrosion Control Records***
(c) Each operator shall maintain a record of each test, survey, or inspection required by this subpart in sufficient detail to demonstrate the adequacy of corrosion control measures or that a corrosive condition does not exist. These records must be retained for at least 5 years, except that records related to §§192.465(a) and (e) and 192.475(b) must be retained for as long as the pipeline remains in service.

Finding:
Documenting regulator station inspections is done utilizing the CNG Facility Maintenance and Inspection Record, Form 287. During the field inspection, CNG was shown areas of surface rust, disbonded coatings, and areas of chipped paint at CNG regulators R01 (Aberdeen), R04 and R05 (Montesano). A review of CNG Form 287 for each of the regulator stations indicated that the paint was in good condition. This issue was also noted under Docket PG-050002 as an area of concern.

Cascade's Response:
CNG records show that regulation stations R01, R04 and R05 have been tested, surveyed and inspected for corrosion per CFR 192.491. At the time of maintenance inspections of R01, R04 and R05 no corrosion was found. Chipped paint, surface rust or oxidation is not metal loss or corrosion.

The noted areas of surface rust, disbonded coatings, and areas of chipped paint at CNG regulators R01 (Aberdeen), R04 and R05 (Montesano) have been repaired.

5. ***49 CFR §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.

Finding (a):
An open relief valve vent cap was observed at regulator R05 (Montesano). During a test of the relief device, water was observed blowing out of the vent stack as the relief valve opened. CNG immediately wrote an operations & maintenance request to perform maintenance on the relief stack, remove the water and replace the vent cap.
A similar condition was noted under Docket PG-050002. We reported this to CNG prior to the inspection. During that inspection, CNG explained that the wind blew open the vent cap and moisture entered and caused corrosion on the pilot valve. CNG replaced the valve. Several months after the inspection, staff again observed the vent cap on R24 stuck in the open position.

Finding (b):
The services to homes located at 4, 5 and 10 Hoffman Road (Aberdeen) is served from a farm tap. From the pipe in Hoffman to the pipe at the closest service becomes a main per §192 definition of main and service line. The farm tap becomes a pressure regulating station and in accordance with §192. 739 must be inspected at intervals not exceeding 15 months but at least once each calendar year to inspections. CNG has not preformed annual inspections on this regulator station.

Cascade's Response:
Finding A- CNG disagrees that item number 5 (a) is in violation of CFR 192.739. CNG maintenance records for regulation stations R05 (Aberdeen) and R24 (Longview) show that they were inspected per CFR 192.739 and found to be in good mechanical condition, adequate from the standpoint of capacity and reliability of operation for the service in which they are employed, set to control or relieve at the correct pressure consistent with the pressure limits of §192.201(a), and properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

During staff's inspection of R05 water was found in the relief vent of R05. This problem did not affect the operation of R05 and has not been a problem in the past. The relief at R05 was immediately inspected. No damage occurred to the relief at R05. A new weather cap was installed to help prevent this from reoccurring. Station R24 was also repaired after the problem was discovered.

Finding B-The farm tap at 10 Hoffman Rd. that service three customers is designed for minimal maintenance. The relief/over pressure protection device is a fracture disc and requires no set point inspection. This farm tap is in good mechanical condition, adequate from the standpoint of capacity and reliability of operation for the service in which it is employed, set to control or relieve at the correct pressure consistent with the pressure limits of §192.201(a) and properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation. This station met all the requirements during Staff's inspections.

This farm tap was not detected until now as being a district regulator. We have added this regulator to our annual regulation station maintenance list.

6. ***49 CFR §192.13 General***
(c) Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part.

Finding (a):
CNG personnel did not follow the plans and procedures in CNG's Company Procedure CP 754.04 which requires:

- Inspections for atmospheric corrosion to be conducted when annual regulator station maintenance is preformed.
- Use the guidelines specified to properly evaluate and document the condition of pipe coatings on CNG's form 287 (Facility Maintenance and Inspection Record) as noted in finding # 4.

Finding (b):
CP 754.04 also states that facility piping shall also be evaluated for wall loss as described in 754.02. Inspections of pipe shall be performed including at pipe supports, pipe straps and where the pipe touches soil. If the pipe strap or support is not plastic, or water can collect between the strap and the pipe, the strap shall be removed for inspection of the pipe underneath. CNG did not evaluate for atmospheric corrosion under pipe supports as noted under finding #3.

Cascade's Response:
Finding A-See response to item #3.
Finding B-See response to item #3.

Area of Concern

1. A pressure relief test was conducted at regulator station R01. R01 has an inlet pressure of 250 psig and an outlet pressure of 150 psig. The maximum allowable operating pressure is 150 psig with the pressure relief valve set to relieve at 156 psig. CNG used a five-pound increment, 600-pound Duragauge to conduct the pressure relief test. It was estimated that the relief valve vented somewhere between 155 and 157 ½ psig. Utilizing a pressure gauge with smaller increments should be utilized to provide for more accurate readings.

CNG Response
The inlet MAOP of R01 is 150 psig. The maximum relief set point per CFR 192 is 165 psig. R01 is set to relieve well below this maximum requirement. We will consider utilizing a different gauge if appropriate.

Sincerely,

CASCADE NATURAL GAS CORPORATION

for

Daniel E. Meredith, P.E.
Senior Director, Safety & Engineering

Enclosures

cc: John Hubler
Lynn Metcalf
Joe Maxwell
Chanda Marek
Keith Meissner
Sam Hicks
Mike Gardner

Cascade Natural Gas Corporation
COMPANY PROCEDURE

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TITLE: ATMOSPHERIC CORROSION CONTROL

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TITLE: ATMOSPHERIC CORROSION CONTROL

Above-ground, gas carrying pipe and equipment shall be periodically surveyed for atmospheric corrosion. This procedure defines atmospheric corrosion, survey requirements, remedial actions, and records for atmospheric corrosion surveys.

COMPLIANCE
Part 192.481, 192.479

.01 PROTECTION FROM ATMOSPHERIC CORROSION

.011 Above ground metallic pipe and equipment shall have a protective coating applied to prevent or inhibit atmospheric corrosion of the facility. Cascade CP 710, Coating and Painting Standards describes the use and application of protective coatings approved for use on Cascade's facilities.

.012 All protective coatings require periodic inspection and maintenance. Ineffective coating or a lack of coating may allow corrosion, pitting and other unacceptable material loss.

.013 For this CP, "above ground pipe" is intended to mean any pipe or facility that is not buried in earth and is exposed to air. Pipe in a vault shall be considered "above ground". Pipe in valve boxes is not "above ground". The term "General Manager" indicates either the General Manager, or a Supervisor assigned by the General Manager.

.02 VISUAL INSPECTION FOR ATMOSPHERIC CORROSION

.021 Above ground steel pipe, meter sets, risers, valves, regulators, piping in vaults, etc. shall be visually examined for evidence of coating damage and atmospheric corrosion by all personnel during the course of their regular work and as part of the surveys described in this CP. Corrosion problems found shall be noted and given to the General Manager for remedial action.

.022 The following criteria are to be used to determine the condition of all above ground pipe or equipment:

Use a screwdriver to probe suspect areas of scaling or pitting to get the best evaluation of depth and severity. Wire brush areas of rust, pitting, or scaling before final evaluation. Do not neglect "drip spots", threads, wrap at the ground and the underside of pipe during the evaluation. Be sure to check the pipe wrap integrity where it interfaces with soil. Be certain that no corrosion exists under thermal insulation, disbanded coatings, pipe supports, splash zones, deck penetrations, or spans over water.

.02 VISUAL INSPECTION FOR ATMOSPHERIC CORRISION (Continued)

a. GOOD

"Good" condition ranges from showing no trace of rust, pitting or rust scales, to having some rust spotting but no pitting nor rust scale. The paint or coating must be adhering, and show no significant cracking or peeling.

Rust scale is identified by the flaking off of surface material.

b. NEEDS PAINT

"Needs Paint" condition ranges from a light coating of rust to uniform shallow, coating of rust. No scaling and slight to shallow pitting may be present. Paint shows cracking or peeling. Use the Atmospheric Corrosion Evaluation - Wall Loss Criteria table for the subject facility's operating pressure to guide your evaluation. As an example, a "Needs Paint" rating will exhibit acceptable wall loss from nominal, requires clean up of rust with a wire brush, and re-coating. Facilities that are only coated with primer shall be considered as "Needing Paint".

If any exterior metal or coating condition meets the criteria for "Needs Paint" condition, then the condition shall be considered as "Needs Paint". If a set is cleaned and painted during the corrosion survey, the set can be graded "Good".

c. NEEDS REPAIR

"Needs Repair" condition has rust scaling, severe pitting or a severe rust condition. Scaling, pitting, or general rust deeper than what is shown in the Wall Loss Criteria table are severe corrosion. (Use the Atmospheric Corrosion Evaluation - Wall Loss Criteria table for the subject facility's operating pressure to guide your evaluation.). "Needs Repair". As an example, a "Needs Repair" rating will exhibit unacceptable pipe wall loss and requires repair or replacement.

If any exterior metal or coating condition meets the criteria for "Needs Repair" condition, then the condition shall be considered as "Needs Repair".

TITLE: ATMOSPHERIC CORROSION CONTROL

.02 VISUAL INSPECTION FOR ATMOSPHERIC CORRISION (Continued)

Wall Loss Criteria Table –
All wall loss shall be compared against pipe nominal thickness.

Pipe Pressure	Good	Needs Paint	Needs Repair
High Pressure (over 60 psig)	No wall loss	Surface rust with virtually no wall loss.	Report wall loss to Engineering for evaluation
Intermediate Pressure (under 60 psig)	No wall loss	Up to 20% wall loss	Greater than 20% wall loss
Residential Pressure (7" water column)	No wall loss	Up to 30% wall loss	Greater than 30% wall loss

.023 Pipe and equipment rated "Needs Repair" shall be replaced if it cannot be field repaired or otherwise restored. The urgency of the replacement will depend on the individual condition found and on operating parameters (i.e. population density, operating pressure).

.024 Always note the "as left" condition of a facility. Example: Original grade was "Needs Paint", but it is immediately cleaned and painted and is now "Good". Note "Good" on your form.

.03 RESIDENTIAL & COMMERICAL METER SETS

.031 Atmospheric corrosion surveys of each residential & commercial meter sets, as well as inactive service risers and high-pressure service sets (farm taps, HPSS) for residential and commercial customers will be performed at least once every three calendar years, but with intervals not to exceed 39 months.

.032 General Managers shall use shutdown section numbering to assign, track, and record the atmospheric corrosion surveys. Each district is divided up in three parts or areas containing shut down sections (Area I, II, III). Shutdown areas shall be assigned to an area by Engineering. A list of the active and inactive service lines in a shutdown section, including those services with HPSS, may be printed from the Customer Information System (Premise – Type "MACS" from the main menu to access Atmospheric Corrosion Survey report print screen. The report will print to the workstation's default Premise printer.).

.033 Personnel shall grade each meter set and service riser listed in the shutdown section using the inspection criteria in section .02. If a meter set or riser is noted as "Needs Paint", or "Needs Repair", a description of the condition should be taken of the condition in the space provided. An individual completing a set of meters shall indicate by signing and dating the page of the report they completed.

.03 RESIDENTIAL & COMMERCIAL METER SETS (Continued)

.034 If the service address is served by a HPSS, personnel shall locate the HPSS and grade it for atmospheric corrosion condition according to the criteria of section .02. If a HPSS is noted as "Needs Paint", or "Needs Repair", a description of the condition should be taken of the condition in the space provided.

.035 Unusual or detrimental conditions found during the survey should be remedied during the survey. Actions taken should be documented. If a remedy cannot be completed during the survey, the problem shall be documented, brought to the GM, explained, and the GM shall designate and schedule an appropriate remedy. A few examples of possible detrimental conditions:

a) Objects are on the meter or HPSS
b) Things chained to the meter or HPSS
c) Foreign wires are found attached to a tracer wire
d) Meter or HPSS is found in contact with the soil
e) Meter or HPSS partially buried
f) Meter or HPSS overgrown with plants
g) No sign of a tracer wire or pipe wrap
h) Objects endangering the meter (fire wood pile)
i) Meters or HPSS that need barricades
j) Barricades that are inadequate or unsturdy
k) Riser is not straight and plumb
l) Inactive riser and meter bar not plugged
m) Possible gas theft

.036 Upon completion of the survey, personnel shall submit the completed work order, list of service addresses, and any notes taken of "Needs Paint" and "Needs Repair" meters, risers, or HPSS to the General Manager. Areas requiring no additional action should be noted as "No Problems Found" on the work order. If a location could not be accessed during the survey, the General Manager must be informed of those specific locations.

.037 The General Manager shall issue work orders for the repainting or repair of the "Needs Paint" and "Needs Repair" meters, risers, or HPSS noted on the survey. Appurtenances requiring "Needs Repair" should be scheduled for remedial action within 90 days of the report, or sooner depending on the condition found. Appurtenances "Needing paint" should be scheduled for remedial action within 6 months of the report. Completed copies of all remedial action work orders shall be stored in the District Atmospheric Corrosion file.

.03 RESIDENTIAL & COMMERCIAL METER SETS (Continued)

.038 The General Manager shall keep a list of the shutdown sections completed during a calendar year. At the end of the calendar year, the General Manager shall send a copy of the list to Engineering. The General Manager shall ensure the completion of the atmospheric corrosion survey for a shutdown section is recorded into the Ellipse database. Shutdown sections survey completion shall be reviewed by Engineering to ensure that routes are completed according to schedule.

.04 REGULATOR, VALVE, AND ODORIZER STATIONS

.041 Regulator stations, valve stations, and odorizer stations are surveyed for atmospheric corrosion at least once every 15 months during facility maintenance. See CP 745, CP 740, and CP 747 respectively for further information. Records are kept on form CNG 287 as part of the annual maintenance records.

.042 Personnel performing the testing and maintenance shall indicate the condition of the facility coating in the boxes marked "Paint":

a. Indicate "good" if the set has been assessed to be in "Good" condition as described in .022a.
b. Indicate "bad" if the set is assessed to "Need Paint" as described in .02. Explain the condition in the comments section of the form 287 so that the General Manager understands what was found and can schedule the appropriate action.

.043 The facility piping shall also be evaluated for wall loss as described in .02. Inspections of all pipe shall be performed including at pipe supports, pipe straps, and where the pipe touches soil. If the pipe shows indications of corrosion the strap, support, or soil shall be removed for inspection and repair of the pipe underneath.

.044 If maintenance is required, be sure the General Manager understands the problem when the completed form is submitted.

.045 The General Manager shall ensure remedial work is performed. Upon completion of the remedial work, the form 287 copy and a copy of the work order shall be placed into the District's atmospheric corrosion files.

.046 Equipment requiring corrosion repairs or further investigation should be scheduled for action within at least 90 days, depending on the condition found. Equipment requiring only re-coating should be scheduled for action within 6 months of the report.

.047 Equipment in vaults shall be inspected in the same manner as other above ground pipe.

.06 OTHER ABOVE GROUND PIPING

.061 The District shall survey above ground piping locations such as bridge crossings, canal crossings, unintended exposures, inactive large meter sets, etc. for atmospheric corrosion. General Managers should ensure that above ground piping locations not examined as part of another atmospheric corrosion survey are included in this survey.

a) Each location shall be examined for atmospheric corrosion and be graded according to .02.

b) General Managers shall ensure that locations are surveyed at least once each three calendar years with intervals not to exceed 39 months.

c) The Atmospheric Corrosion Patrol Log shall be used to record the completion of the survey. The District shall record the completion of atmospheric corrosion surveys for each location identified, indicating the date of the survey, who performed the survey, and make note of the condition. The survey shall also be recorded into the Ellipse tracking database.

d) The Atmospheric Corrosion Patrol Log shall be periodically reviewed by the District General Manager to ensure that all applicable locations are listed on the patrol. Copies of Logs are stored on the Company shared hard drive (S:\Operations & Maintenance\Atmospheric Corrosion Patrols).

.07 INSPECTING GUARD POSTS AND BARRICADES

Guard posts and barricades shall be inspected during each atmospheric corrosion survey for a particular facility. The post or barricade stability, general condition and whether it still serves its intended function shall be evaluated. If any of these conditions are unsatisfactory, then the condition shall be noted on the form being used, and the General Manager shall be informed. Locations found that may need barricades that do not have any shall also be submitted to the General Manager. The General Manager shall decide the appropriate actions and schedule for guard posts and barricades.

.08 RECORDS

.081 Districts shall maintain an Atmospheric Corrosion file with the compliance records required in this procedure. Remedial actions and records of completed surveys shall be stored in this file.

.082 Atmospheric corrosion survey records shall be kept for a minimum of five years.

.08 RECORDS (Continued)

.083 Corrosion survey records for regulators, valves, odorizers (CNG 287), and industrial meter sets (CNG 306A) shall be stored and retained according to the respective Company Procedure governing those maintenance activities.

.084 Each survey shall be recorded into the Ellipse tracking database. Questions regarding Ellipse can be directed to IT Helpdesk, or the appropriate SuperUser.

.09 OPERATOR QUALIFICATION

.091 OQ Task 1260 is required to perform external corrosion evaluations. OQ Task 1060 is required to assess wall loss.

.092 Personnel assigned to Atmospheric Corrosion Surveys must be qualified for task 1260 and 1060.