

Federal Reportable Incident Investigation Form

Notification ID:	2720	Investigation ID:	6089
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Inspector Name:	Dennis Ritter
Date Report Submitted to Chief Engineer:	September 9, 2014

Operator:	Cascade Natural Gas
District/Unit:	Yakima
Location:	Regulator R-28 behind Wapato Irrigation District off Camas Ave Wapato, WA
Incident Date:	2/22/2014

Description:

CNG called in to report an overpressure event at regulator station R-28 in Wapato WA occurring on Saturday February 22, 2014. This is the Yakima/Sunnyside District. CNG received an odor complaint at 17:26 and a technician was dispatched. The technician arrived at R-28 to find the station in relief (see photos below for site characteristics). She cleaned/replaced the diaphragms and the station returned to normal operation. However, UTC was notified of the incident on February 26 well after the 24-hr requirement per WAC 480-93-200(2)(d) for an exceedance of MAOP. CNG indicated the technician who repaired the regulator turned the paper work in, however, the manager was gone until the 24th. He did not know about the event until the chart was pulled on the 25th and he reviewed it on the 26th at which point he called compliance and they called it in to UTC. CNG is reviewing their procedures to find out what should have happened to allow notification within the 24 hr window. CNG will send copy of chart and regulator maintenance records for 2012 and 2013 with 30-d report. CNG will calculate how much gas was lost as pressure chart indicated the overpressure event began just before 11:00 am and was resolved at 19:30 PM. Gas was blowing for over 7 hrs. On Feb 28th, CNG determined that the incident was Federally reportable as more than three million cubic feet of gas discharged through the relief vent stack.

- Facts/Chronology of Events:**
- **Regulator R-28 serves the town of Wapato, WA. It is the single source of supply and has two runs and a relief. It is not on SCADA but does have a pressure recording chart.**
 - **MAOP is 60 psi and per 192.201(a)(2) it cannot exceed MAOP plus 10% or 66 psi.**
 - **The regulators are Mooney Flow Grids with a Series 20 pilot. Spring ranges are 25-90 lbs. This regulator does not have a strainer or filter. Last annual maintenance was satisfactorily completed Sept 26, 2013. The technician left the station as follows:**
Operating run set point lock up: 58 psi
Standby run set point lock up: 54 psi
Relief set point: 62psi

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- At approximately 17:26 on Feb 22, 2014, CNG received an outside odor call from the area around R-28.
- At approximately 17:45 CNG personnel arrived onsite. Gas was actively venting out the relief stack.
- At approximately 17:55 CNG personnel isolated and shut in the run and made the situation safe. CNG personnel investigated and discovered metal shavings in the boot on the second run which prevented the regulator from locking up and subsequently higher pressure gas was released downstream. When the pressure reached 64 psi the relief opened. The technician removed the debris and rectified the problem.
- At 19:15 the technician put regulator back on line. Normal operation followed.
- At 14:18 on February 25, 2014 CNG personnel changed out the pressure recording chart (weekly activity).
- On February 26, 2014, CNG reviewed the pressure chart and noted the MAOP exceedance as follows: At approximately 10:30 on Feb 22, 2014 the pressure recording chart showed a gradual increase in pressure from 56 psi to 64 psi. This took approximately 1 hour. At approximately 19:30, the chart showed an immediate pressure drop back to approximately 58 psi.
- CNG called WUTC to report the exceedance on February 26, 2013 at 15:02.
- On February 28, 2014 at 18:15, CNG engineering calculated 4,823,475 CF of gas had been lost. Per 191.3(1)(iii) it is Federally reportable.
- On February 28, 2014 at 18:21 the incident was reported to the National Response Center. NRC number is 1075436.
- Weather information for Yakima, WA (approximately 14 miles NW of Wapato) on February 22, 2014 indicated it was cool, with a low temp of 24 deg F and a high of 47 deg F. Average temperature was 36 deg F. Winds were generally to the NNW at 4 mph with gusts to 13 mph.
- Regulator R-28 is located adjacent to active railroad tracks on an un-improved frontage road (see photos below). It sits behind the Wapato Irrigation District yard and is approximately 100 feet north of a mobile home development.
- The line serving R-28 is a high pressure 4-inch extending approximately 5.75 miles from Toppenish/Zillah. It has an MAOP of 152 psi. The last maintenance or construction related issue on this line prior to the event was a tap that occurred 5 years earlier in Zillah. Otherwise there has been no CNG activity which would allow metal shavings into pipeline.
- Odorant concentration readings for this area prior to the event showed no regulatory issues. All well within range.

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Looking East-note closest structures are approximately 100 ft south.

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Looking South toward nearest structure

Causes/Contributing Factors:

It appears that the cause for the incident was debris (metal shavings—like what would be found when tapping a steel pipeline) which had accumulated in the regulator boot. After cleaning/replacing the diaphragm, the station functioned normally. This station does not have a history of any issues. It would appear that the metal shavings from a past construction project (last one was over 5 years ago) finally worked their way down the line to R-28. There does not appear to be a regulatory issue with maintenance or operations which contributed to the incident (at least in the last 5 years).

This incident was first reportable to WUTC due to the exceedance of the MAOP per WAC 480-93-200(2)(d). However, it became a Federal reportable when CNG calculated that over 4 million cubic feet of gas had been lost. A bigger picture question is why did this station continue to relief for over 7 hours and CNG did not get a phone call? The call finally came in at 17:26 a full 5.5 hours after the pressure chart first recorded the increase.

The answer may simply be that the time of the year was the key factor. It was February, cold (average temperature that day was 36 deg F) and the wind was generally blowing to

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the NNW—away from the nearest populated area. Odorant records showed concentrations were well within the acceptable range and CNG had mailed out in both Spanish and English, public awareness flyers with appropriate language regarding what to do when a gas odor was detected. The mobile home park immediately adjacent to R-28 had flyers mailed on September 10, 2013.

Regulatory Analysis/ Violations:

The regulatory analysis for this incident indicates that the actual overpressure event was not caused by a regulated failure (ie, CNG did not do the annual maintenance on R-28, or CNG failed to follow tapping procedures for a recent hot tap). However, it appears CNG did not follow their procedures for both reporting incidents per WAC 480-93-200 and investigating incidents per CNG's company procedures (C.P.).

1) CNG did not notify the WUTC within 24 hours as required by WAC 480-93(2)(d). CP 745.08 BLOWING RELIEF VALVE AT DUAL REGULATOR STATION, states the following:

- a. Personnel will notify District Management as *soon as reasonably possible* that a relief valve is blowing. If MAOP was or may have been exceeded, an over-pressure investigation will be initiated per CP 735.

CNG personnel did not alert management of the overpressure event. Management found out 4 days later while reviewing the pressure chart from R-28 from the previous week. Then WUTC was notified per company procedures. However, the technician who repaired the regulator knew the day they responded. WUTC believes for this case, there should not have been a gap between the actual event and notification to WUTC. CNG needs to explain how this type of occurrence will not happen in the future.

2) CNG did not follow their company procedures in investigating this incident as noted below:

CNG CP 735.054 states,

In the event a pressure chart indicates the pressure in the system exceeded (by any increment) the MAOP of the system, the District will take the following actions immediately:

- a. Check the calibration of the chart and note the actual system pressure and the corresponding chart reading on the back of the chart.

CNG did not provide calibration records showing the chart was calibrated per the procedure nor was the actual system pressure and corresponding chart reading recorded on the back of the chart.

- b. Review other charts that are reading the same system.

CNG did have another pressure recording chart in this system located at Sonoco Products, 31 Industrial Park Rd, Wapato, WA. This chart recorded system pressure at 62 psi. R-28 recorded 64 psi. There should not be a 2 lb difference in calibrated recording charts for the

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same system.

- c. Notify the Safety and Engineering Department of the chart reading and actual system pressure.
- d. Re-calibrate the pressure chart if required.
- e. If actual system pressure exceeded MAOP, perform regulator maintenance (per CP 745) on each station that feeds gas to the system. Maximum regulator lockup pressures are listed in the file: S:\System Design Data\Reg Set Points.xls. Ensure the regulators are set to lock up at or below the pressures listed.
- .055 If actual system pressure exceeded MAOP, Safety and Engineering shall take appropriate action in reporting the event to the WUTC or OPUC per CP 720 and CP 780.

See 1) above.

.056 Any abnormality which is observed on the chart – whether due to unusual change in pressure, clock operation, outside influences, etc. is to be noted and explained on the chart.

The charts do not have any explanation as to the abnormalities indicated (Sonoco and R-28 both showed abnormalities as noted above.)

Follow up/ Recommendations:

CNG will be issued notice of violation for the response to this incident. The violation letter will require CNG to respond with actions ensure responding personnel are familiar with and follow procedures for any future incident.