



In the Community to Serve®

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September 29, 2017

Oregon Public Utility Commission
Filing Center
201 High St. SE, Suite 100
P.O. Box 1088
Salem, OR 97308-1088

Re: UM 1722 2018 Annual OR Safety Project Plan

In accordance with Docket UM 1722, Order No. 17-084, Cascade hereby submits its 2018 Annual Oregon Safety Project Plan.

The attached is divided into three sections. The first section contains Cascade's safety plan for addressing all pipes with an elevated risk of failure. The second section contains a project plan that specifically identifies the goals for the upcoming period. The third section contains a plan for identifying the location of pipe that presents an elevated risk of failure. These three sections combined include the information required in paragraph 22 of the stipulation approved in order 17-084.

If there are any questions regarding this safety plan, please contact Ryan Privratsky at (509) 734-4599. For any questions regarding this filing, please contact me at (509) 734- 4593.

Sincerely,

Michael Parvinen
Director, Regulatory Affairs

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2018 Annual Oregon Safety Project Plan

in accordance with:

Order No. 17-084, Docket UM 1722

September 30, 2017

Introduction

On March 6, 2017, the Oregon Public Utility Commission (“Commission”) issued Order No. 17-084 in Docket UM 1722 for the investigation into recovery of safety costs by natural gas utilities.

This order requires each of the natural gas distribution companies in the state of Oregon to file an annual Safety Project Plan (or Plan) for review by the Commission. The Plan is intended to achieve the following objectives:

- 1. Explain the expected level of capital and O&M expenses required to mitigate safety issues identified by risk analysis or newly federal and state rules;*
- 2. Demonstrate the utility’s safety commitment to and prioritization of safety planning to its customers and public;*
- 3. Provide a non-technical explanation of primary safety reports each utility is required to file with the Commission’s pipeline safety staff; and*
- 4. Identify major regulatory changes that impact new safety planning priorities and/or changes to existing safety plans.*

Cascade’s Plan includes three sections, which include:

- 1. A safety plan for addressing all pipes with an elevated risk of failure.*
- 2. A project plan that specifically identifies the goals for the upcoming period.*
- 3. A plan for identifying the location of pipe that presents elevated risk of failure.*

The three sections include the information required in paragraph 22 of the stipulation approved in Order 17-084.

Section 1 -Safety Plan

This Plan will serve as the guide that Cascade Natural Gas Corporation (Cascade) will use to determine which pipelines and facilities should be addressed as part of this Plan. This Plan will describe the possible risks that can be associated with a pipeline, how the pipelines are analyzed to assess and quantify risks, how the pipelines to be addressed are identified, and how information for identified and new risks is obtained. The Plan will also describe the role that Cascade’s Distribution Integrity Management Plan (DIMP) and Transmission Integrity Management Plan (TIMP) plays in this Plan.

Possible Risks

Cascade operates pipelines that are classified as Pre-CNG piping systems. Pre-CNG pipelines are distribution systems that were constructed to distribute manufactured gas or natural gas. These pipelines were originally installed, owned, operated, and maintained by others prior to 1955. Cascade acquired many of these systems in the late 1950s and throughout the 1960s. The condition of the Pre-CNG pipe is bare steel or coal tar wrapped. This pipe is of concern since it is at least 60 years old and lacked cathodic protection until the early 1970s, leaving the pipe suspect to corrosion risk. The extent of this pipe varies throughout Cascade systems and depends on the history of the system and how it was acquired by Cascade.

Total Footage of Pre-CNG (OR)	230,360
Percentage of Pre-CNG Pipe in System (OR)	2.74%

Note: Footage and percentage above is from DIMP and doesn't include transmission main identified as PRE-CNG

In addition to the risks inherent with Pre-CNG pipelines, Cascade's pipelines are exposed to risks due to the following factors:

- Corrosion
- Natural Forces
- Excavation Damage
- Other Outside Force Damage
- Material, Weld, or Joint Failure
- Equipment Failure
- Incorrect Operation
- Other – Forces unique to a particular area on the system

Cascade's DIMP and TIMP describes these risks in greater detail. Cascade's DIMP and TIMP are on file with the Commission.

Analysis and Quantification

As part of Cascade's DIMP and TIMP information is collected and is inputted into the appropriate risks models, where it is analyzed to find areas of concern and trends. This allows Cascade to quantify the risk associated with each pipeline based on factors that are pertinent to this Plan. Cascade's DIMP and TIMP contains a more detailed explanation of this process.

Identification of Pipelines for Replacement

DIMP and TIMP risk results are used to identify the locations of pipelines that should be addressed in the Plan.

For pipelines identified by DIMP, samples of the DIMP model outputs for the projects identified in Section 2 of this document are included in Appendix A. Once replacement locations are identified, specific projects within these areas are planned and prioritized based on coordination with district and on-site personnel considered to be Subject Matter Experts (SMEs). This helps ensure the replacement of the higher risk pipelines within the identified areas.

Obtaining New Information

Cascade obtains new information for DIMP and TIMP through the following methods:

1. Observing trending – DIMP and TIMP are analyzed on a yearly basis. As part of this analysis trends are identified and the plan and/or model is modified as needed.
2. Company forms that gather information on exposed pipelines – every time a Cascade pipeline is exposed an Integrity Management Dig Report – Form 625 is completed. Additionally, all leaks are documented with a Leak Investigation – Form 293. Information from these forms are inputted into the DIMP model.
3. Continuing Subject Matter Expert (SME) panel meetings – SME panel meetings are held on an appropriate basis. Information from the panel meetings is used to validate the DIMP model and new information is input into the DIMP model.
4. Updating plan and/or model annually – Cascade’s DIMP and TIMP are updated annually. Results are used to prioritize pipeline replacement projects.

Cascade’s DIMP and TIMP describes these methods in greater detail.

Section 2 – Project Plan

Planned Safety Initiatives and Projects

The list below is Cascade’s Project Plan for the 2018 time period outlined in this plan.

PROJECT	DISTRICT	TYPE OF PIPE TO BE REPLACED, RISKS	ESTIMATED COST
BEND PIPE REPLACEMENT PHASE 7	BEND	PRE-CNG PIPE - IDENTIFIED HIGH (RED) RISK IN DIMP, CORROSION AND LEAK HISTORY	\$2,703,564
6" BEND HP REPLACEMENT PHASE 1	BEND	PRE-CNG PIPE - IDENTIFIED HIGH (RED) RISK IN DIMP, CORROSION AND SHALLOW BURY DEPTH	\$1,682,598
PENDLETON PIPE REPLACEMENT PHASE 2	PENDLETON	FISH PIPE INSTALLED APPROX. 50-60 YEARS AGO, CORROSION AND LEAK HISTORY	\$2,187,578
4" MADRAS HP REPLACEMENT PHASE 1	BEND	PIPE INSTALLED IN 1962, CORROSION AND MATERIAL FAILURE (SEAM LEAKS) HISTORY	\$4,954,182

The projects listed are based on the best information available at this time. As more information becomes available and DIMP and TIMP are updated, the prioritization of the projects may change. DIMP output for replacement projects are shown in Appendix A.

Below is Cascade’s Project Plan for calendar year 2017. This component is added to coincide with Cascade’s Safety Cost Recovery Mechanism (SCRM).

PROJECT	DISTRICT	TYPE OF PIPE TO BE REPLACED	ESTIMATED COST
BEND PIPE REPLACEMENT PHASE 6	BEND	PRE-CNG PIPE - IDENTIFIED HIGH (RED) RISK IN DIMP, CORROSION AND LEAK HISTORY	\$3,402,119
6" PILOT ROCK HP REPLACEMENT	PENDLETON	PIPE INSTALLED IN 1956, CORROSION HISTORY	\$470,430
PENDLETON PIPE REPLACEMENT PHASE 1	PENDLETON	FISH PIPE INSTALLED APPROX. 50-60 YEARS AGO, CORROSION AND LEAK HISTORY	\$2,091,725

Initiative and Project Benefits

Benefits to completing the identified safety projects would include the following:

1. Increase system reliability
2. Increase customer and public safety by eliminating aging pipe and facilities with an increased likelihood to leak.
3. Reduce operation and maintenance costs.
4. Risk reduction in DIMP.
5. Operation of pipe with known operating and installation history.

Initiative and Project Alternatives

No alternatives can be identified for the safety initiatives and projects identified. Given the operating history, age of pipe, corrosion history, and leak history of the projects identified, the projects will need to be completed in the near future to be able to continue to provide a safe and reliable service to Cascade’s customers.

Section 3 - Plan for Identifying the Location of Pipe that Presents Elevated Risk of Failure

Cascade identifies the location of pipe that presents an elevated risk of failure through DIMP and TIMP. DIMP calls for information to be gathered on exposed pipe, leaks to be tracked, and SME knowledge to be incorporated into the plan. DIMP has sufficient flexibility to identify and adjust to trends and new sources of information. Yearly analyses are performed that quantify the risks on each pipeline.

As outlined in Cascade's DIMP, additional or accelerated (A/A) actions are implemented when existing compliance activities and procedures need to be supplemented to address risk identified to the integrity of Cascade's distribution system. A/A actions that may be implemented to mitigate risk are outlined in Cascade's DIMP, as well as the requirements for implementation and documentation.

In instances where unknown pipe properties are encountered (i.e. pipe grade, wall thickness, material type, etc.) Cascade takes actions to obtain unknown properties. These actions include, but are not limited to, removal and sampling, in-situ testing, and pipeline replacement.

APPENDIX A
DIMP MODEL OUTPUT

Areas in red represent highest risk areas.









