



310 CMR 7.73 Program Review

***Reducing Methane Emissions from Natural Gas Distribution Mains
and Services***

September 10, 2020

Existing Regulation

- Promulgated August 11, 2017
- Established company-specific annual methane emissions limits that declined from 2018 to 2019 to 2020
- Applied to 6 Local Distribution Companies (LDCs) (Berkshire, Columbia, Eversource, Liberty, NGRID, Unitil) that have a Department of Public Utilities (DPU) approved Gas System Enhancement Plan (GSEP) work intended to eliminate leak prone pipe as required by MGL c.164 s. 145
- Provided option to petition for portion of annual emissions set-aside based on:
 - DPU GSEP or Gas System Reconciliation (GREC) Orders,
 - Unanticipated growth of miles or services, and/or
 - Other unanticipated changes (e.g., reclassification of pipeline type)

Existing Regulation

310 CMR 7.73(9) required a program review, as follows:

(9) Program Review. Not later than December 31, 2020, the Department shall complete a review, including an opportunity for public comment on the program review, of the requirements of 310 CMR 7.73 to determine whether the program should be amended or extended. This review shall evaluate whether to require the use of feasible technologies to detect and quantify gas leaks and any other information relevant to review of the program.

Compliance in 2018 and 2019

Metric tons CO2e	2018	2019	2020
310 CMR 7.73 Table 7 aggregate limit	187,491	178,582	169,320
Amount petitioned from emissions set-aside	1,945 4.8% of available	2,963 7.4% of available	5,094 12.9% of available
Modified aggregate limit	189,436	181,545	174,414
Actual emissions	188,836	181,345	n/a

Questions for Discussion - Overview

- **Should the decreasing annual emissions limits be extended beyond 2020?**
- **What is the appropriate size and role of the emissions set-aside?**
- **What are the most appropriate emission factors or other metrics to determine emission limits and evaluate progress?**
 - **Are there practical, economically feasible technologies to detect and quantify gas leaks?**
 - **Are DPU's 3/22/2019 regulation 220 CMR 114 *Uniform Natural Gas Leaks Classification* (which details technologies to detect and quantify the areal extent of gas leaks) and 12/27/2019 regulation 220 CMR 115 *Uniform Reporting of Lost and Unaccounted-for [LAUF] Gas* (which quantifies LAUF components) sufficient?**
- **Does the petition process in 310 CMR 7.73(4)(c) need any changes?**

Questions for Discussion

Should the decreasing annual emissions limits be extended beyond 2020?

- On April 30, 2020 DPU issued GSEP orders covering 2020 through 2024

If so, what is the appropriate size and role of the emissions set-aside?

- The current set-aside equals 5% of the Table 7 aggregate limit plus the emissions from 1600 miles of pipeline that might need to be reclassified from cathodically- to noncathodically-protected steel

Questions for Discussion

- **What are the most appropriate emission factors or other metrics to determine emission limits and evaluate progress?**

Draft Potential Limits using Current Method

growth projections to be added

Metric tons CO2e	2020	2021	2022	2023	2024
Berkshire	3,288	3,100	2,935	2,764	2,595
Columbia* (Bay State)	27,109	25,349	23,031	20,801	18,256
Eversource*	25,686	24,060	22,438	20,815	19,188
Liberty	5,465	5,067	4,668	4,268	3,871
National Grid	110,932	106,947	102,874	98,783	94,796
Unitil (Fitchburg Gas)	1,817	1,712	1,617	1,539	1,476
Aggregate Limit	174,297	166,235	157,563	148,970	140,452

*Columbia and Eversource to be combined

Comparison of Metrics: Options

	310 CMR 7.73 and DPU 220 CMR 115 fugitive emissions method	DPU 220 CMR 115 alternate fugitive emissions method based on number of leaks	DPU 220 CMR 114 number of leaks
Who	6 GSEP LDCs	6 GSEP LDCs	6 GSEP LDCs + Blackstone
What	Pipeline and Hazardous Materials Safety Administration (PHMSA) miles & services	# of open and closed Grade 3 leaks of significant environmental impact (G3SEI); # of open and closed Non-G3SEI leaks; Average % of year open and closed leaks remain open; % total leaks by material type	# environmentally significant Grade 3 leaks on leak prone pipe; # Grade 1, # Grade 2, # Grade 3 leaks
Emission Factors (EFs)	Volume per mile EFs by material type (same as MA GHG Inventory)	Volume per leak EFs by material type for average and 95% Upper Confidence Limit leaks	n/a

Metrics: 2019 fugitive emissions from two emissions methodologies in 220 CMR 115

Metric tons CO ₂ e	310 CMR 7.73 and DPU 220 CMR 115 fugitive emissions method	DPU 220 CMR 115 alternate fugitive emissions method based on number of leaks
Mains	126,206	142,995
Services	36,047	23,149

- Observations about the alternate method:
 - Overall emissions are approximately 2.3-2.4% larger
 - Alternate method is based on historic data and does not provide forward looking projections
 - Method used to establish limits is typically the same method used to demonstrate compliance

Questions for Discussion

- Are there practical, economically feasible technologies to detect and quantify gas leaks? Are DPU's 3/22/2019 regulation 220 CMR 114 *Uniform Natural Gas Leaks Classification* (which details technologies to detect and quantify the areal extent of gas leaks) and 12/27/2019 regulation 220 CMR 115 *Uniform Reporting of Lost and Unaccounted-for [LAUF] Gas* (which quantifies LAUF components) sufficient?

Metrics: DPU technologies

Uniform Natural Gas Leaks Classification, 220 CMR 114.07(1)(a), details technologies to detect and quantify the areal extent of gas leaks:

(a) Each Gas Company shall designate Grade 3 gas leaks as environmentally significant if during the initial identification or the most recent annual survey-if:

- 1. the highest barhole reading shows a gas-in-air reading of 50% or higher or*
- 2. the Leak Extent is 2,000 square feet or greater.*

*A Gas Company is not precluded from proposing to the Department a more rigorous method of designating environmentally significant Grade 3 leaks based on field data or tested and proven technologies that may become available from time to time. **Such proposals shall be submitted to the Department for approval.***

Questions for Discussion

Does the petition process in 310 CMR 7.73(4)(c) need any changes?

- A GSEP contains projections of work for 5 years; therefore, the projected GSEP work for a given year can be updated up to five times. This has resulted in MassDEP receiving multiple petitions.
- In addition, the overlapping nature and timing of the three petition categories in the current regulation also result in MassDEP receiving multiple petition requests.
- MassDEP proposes for discussion a single petition deadline of 30 days after a given year's reports are due to the Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA reports are due on March 15th; therefore, the petition deadline would be April 15th.

Next Steps: Information Request

MassDEP requests that by 5pm on Friday, September 18, 2020 the LDCs email climate.strategies@mass.gov:

- annual projected growth of miles of pipeline and number of services for each year from 2020 through 2024, and
- remaining number of miles of pipeline that could yet be reclassified from cathodically- to noncathodically-protected steel.

Next Steps: Process and Schedule

- September 10, 2020, 5-7pm: stakeholder meeting
- September 18, 2020, 5pm: public comment deadline
Submit electronically to climate.strategies@mass.gov or by mail to: Sharon Weber, Massachusetts Department of Environmental Protection, 1 Winter Street, Boston, MA 02108.
- September/October 2020: publish proposed regulation amendments
- October 2020: hold public hearing
- 12/11/2020: file regulation amendments with Secretary of State
- 12/25/2020: regulation amendments published and effective