



Proposed Rulemaking:
Sulfur in Commercial Fuel Oil
25 Pa. Code Section 123.22

Environmental Quality Board Meeting
Harrisburg, PA
July 13, 2010

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Proposed Rulemaking: Sulfur in Commercial Fuel Oil

Purpose of rulemaking

- The purpose of this proposed rulemaking is to limit sulfur content in commercial fuel oil used in residential and commercial/industrial boilers, furnaces and other heaters.
- The environmental and health benefits of lowering sulfur content in fuel are reduced sulfur dioxide(SO₂) and fine particulate (PM_{2.5}) emissions which:
 - decrease regional haze and improve visibility, and
 - decrease health effects of PM_{2.5} exposure such as respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks and certain cardiovascular problems.



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Background

- The 1977 Clean Air Act Amendments declared a national goal to prevent future visibility impairment and remedy existing impairment in the national parks, wilderness areas, and wildlife refuges (“Class I” areas).
- The goal is to reach natural visibility conditions by 2064: the first milestone is 2018. All states must submit plans for reducing “regional haze.” Pennsylvania contributes to visibility impairment in the Mid-Atlantic/Northeast.
- The sulfate ion is the primary chemical species contributing to visibility impairment.



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Why was rulemaking initiated?

- The Mid-Atlantic/Northeast Visibility Union (MANE-VU) was established in 2000 to help the Northeast states plan for meeting regional haze requirements.
- MANE-VU evaluated four source categories (electric generating units, cement and lime kilns, industrial/commercial/institutional boilers, and heating oil) for potential sulfur reductions.
- In 2007, MANE-VU states adopted a formal statement agreeing to pursue a regional low-sulfur oil strategy, along with emission reductions for certain electric generating units.

Mid-Atlantic/Northeast Visibility Union

MANE-VU





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Federal and state initiatives

- There are no federal sulfur standards for fuel oil.
- Since all MANE-VU states have committed to a low sulfur fuel strategy, Pennsylvania will not be at a disadvantage with the other states in the Northeast
- The sulfur level of 15 ppm in the proposed rulemaking for No. 2 commercial fuel oil is consistent with the level that is or will be required in highway and nonroad locomotive and marine transportation diesel fuels.
 - Federal rules require all refiners to produce 100% of their highway diesel fuel and nonroad transportation diesel fuel at 15 ppm beginning June 1, 2010.
 - The federal sulfur content limit for locomotive and marine (except large ocean-going vessels) diesel fuel will be 15 ppm beginning June 1, 2012.



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Provisions

- The proposed rulemaking adds two new terms and definitions and amends eight definitions under 25 *Pa. Code* Section 121.1 (relating to definitions).
- The proposed rulemaking amends 25 *Pa. Code* Section 123.22 (relating to combustion units) to lower the allowable sulfur limit in commercial fuel oil and make it consistent across the state, instead of varying by air basin.
- The proposed rulemaking amends 25 *Pa. Code* Sections 139.4 (relating to references) and 139.16 (relating to sulfur in fuel oil) to update the sampling and testing methods and references.
- A provision is included that allows for the Department, with written concurrence from the Administrator of the EPA, to grant a temporary suspension of the sulfur limit in the event of a commercial fuel oil shortage in a geographical area.



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Applicability

- The proposed regulation would be applicable to anyone who offers for sale, delivers for use, exchanges in trade or permits the use of commercial fuel oil in this Commonwealth.
 - Owners and operators of refineries, terminals and retail outlets that produce, convey, store or sell commercial fuel oils; distributors, carriers, ICI boiler owners; and anyone who uses commercial fuel oils in this Commonwealth would be affected.
 - End-users of commercial fuel oil range from large industrial users to homeowners.



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- Section 123.22 would require commercial fuel oils to meet the limits listed below by May 1, 2012.
- No. 2 and lighter commercial fuel oil is generally used for residential and commercial heating. Numbers 4, 5, 6 and heavier commercial fuel oils are used in industrial/commercial/institutional boilers.

Fuel oil type	Limit
No. 2 and lighter	15 ppm
No. 4 oil	0.25% sulfur
No. 5, No. 6 & heavier oil	0.5% sulfur



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- **Expected results- Annual SO₂ Emission Benefits in the MANE-VU Region in 2018**

Area	15 ppm #2 (from 2000+ ppm baseline)	0.5% #4 & #6 (from 1% baseline)	Total Reductions from Low Sulfur Oil Strategy
MANE-VU	167,000 tons	19,000 tons	186,000 tons
Pennsylvania	25,000 tons	4,000 tons	29,000 tons

MANE-VU totals from MANE-VU Modeling for Reasonable Progress Goals, NESCAUM, February 7, 2008. Pennsylvania-specific benefits used in this modeling conveyed by e-mail from John Graham, NESCAUM, October 2009.



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Costs

- The National Oilheat Research Alliance (NORA) estimated the cost of refining 15 ppm distillate at between about 5 and 9 cents per gallon more than producing oil at current unregulated levels, depending on existing refining equipment. Where refiners have desulfurization capabilities, the differential cost would be less, about 4.6 cents per gallon.
- Forces other than production costs will play a role in determining the price differential that consumers will pay for cleaner commercial fuel oil.



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Savings to the regulated community

- Sulfur reductions can save consumers money (approximately \$8 per household annually) because low sulfur heating oil reduces the rate of fouling of heating equipment and therefore reduces maintenance.
- Cleaner furnaces or boilers burn less commercial fuel oil which saves consumers money on quantity of fuel purchased.



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Compliance and Enforcement

- The primary indication of compliance will be the bill of sale or lading that proceeds through the chain of custody from the refiner to the ultimate consumer containing the commercial fuel oil sulfur content. This recordkeeping requirement follows industry practice as much as possible.
- The recordkeeping requirements do not apply to ultimate consumers at a private residence or to owners of apartment buildings, or condominiums, or both, housing private residents.



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Advisory Committee Review

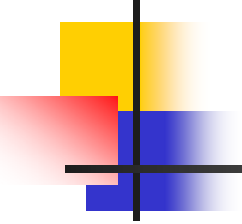
- The Air Quality Technical Advisory Committee reviewed the proposed rulemaking on February 18, 2010, and concurred unanimously with the Department's recommendation to present the proposal to the Board with suggested revisions.
- The Citizens Advisory Council air committee reviewed the proposal on February 16, 2010.
- The proposal was discussed with the Small Business Compliance Advisory Committee on April 28, 2010 and to the Agricultural Advisory Board on April 21, 2010.



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Recommended Public Participation

- The Department recommends a 60-day public comment period and three public hearings on the proposed rulemaking.
- If adopted as a final-form rulemaking, a revision to the State Implementation Plan will be submitted to the EPA.



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION



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