

Regulatory Analysis Form

(Completed by Promulgating Agency)



IRRC

Independent Regulatory Review Commission

SECTION I: PROFILE

(1) Agency:

Environmental Protection

(2) Agency Number:

Identification Number: 7-462

IRRC Number:

2874

(3) Short Title:

Commercial Fuel Oil Sulfur Limits for Combustion Units

(4) PA Code Cite:

25 Pa. Code Chapters 121, 123 and 139

(5) Agency Contacts (List Telephone Number, Address, Fax Number and Email Address):

Primary Contact: Michele Tate, 717.783.8727

Secondary Contact: Duke Adams, 717.783.8727

(6) Primary Contact for Public Comments (List Telephone Number, Address, Fax Number and Email Address) – Complete if different from #5:

Environmental Quality Board

PO Box 8477

Harrisburg, PA 17105-8477

Phone: 717.787.4526

(All Comments will appear on IRRC'S website)

(7) Type of Rulemaking (check applicable box):

Proposed Regulation

Final Regulation

Final Omitted Regulation

Emergency Certification Regulation;

Certification by the Governor

Certification by the Attorney General

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(8) Briefly explain the regulation in clear and nontechnical language. (100 words or less)

The proposed rulemaking would amend § 123.22 (relating to combustion units) under Chapter 123 (relating to standards for contaminants) to lower the allowable sulfur content of commercial fuel oil for use in combustion units and replace the existing area-specific sulfur content limits for commercial fuel oils with a statewide sulfur limit; add provisions for sampling and testing, and recordkeeping and reporting, under § 123.22; revise the sampling and testing requirements in Chapter 139 (relating to sampling and testing); and add definitions to § 121.1 (relating to definitions) under Chapter 121 (relating to general provisions) for two new terms, and amend the definitions of eight existing terms to provide clarity and support the amendments to Chapter 123. The provisions would affect the owner or operator of a refinery, pipeline, terminal, carrier, distributor or retail outlet that produces, conveys or stores the commercial fuel oil, as well as the ultimate consumer that uses the commercial fuel oil. The proposed compliance date of the revised sulfur limits is May 1, 2012. The proposed rulemaking, if adopted as a final-form rulemaking, would be submitted to the U.S. Environmental Protection Agency (EPA) as a revision to the State Implementation Plan (SIP).

(9) Include a schedule for review of the regulation including:

- | | |
|---|------------------------------------|
| A. The date by which the agency must receive public comments: | <u>November 2010</u> |
| B. The date or dates on which public meetings or hearings will be held: | <u>October 2010</u> |
| C. The expected date of promulgation of the proposed regulation as a final-form regulation: | <u>4th Quarter 2011</u> |
| D. The expected compliance date of the final-form regulation: | <u>May 2012</u> |
| E. The date by which compliance with the final-form regulation will be required: | <u>May 2012</u> |
| F. The date by which required permits, licenses or other approvals must be obtained: | <u>N/A</u> |

(10) Provide the schedule for continual review of the regulation.

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

SECTION II: STATEMENT OF NEED

(11) State the statutory authority for the regulation. Include specific statutory citation.

Statutory authority for this action comes from section 5(a)(1) of the Air Pollution Control Act (APCA) (35 P.S. § 4005(a)(1)), which grants the Environmental Quality Board (Board) the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth, and section 5(a)(8) of the APCA (35 P.S. § 4005(a)(8)), which grants the Board the authority to adopt rules and regulations designed to implement the provisions of the CAA.

(12) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as any deadlines for action.

No.

(13) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

This proposed rulemaking is designed to lower the allowable sulfur content limits of commercial fuel oils used in residential and commercial oil heat burners and furnaces, and industrial/commercial/institutional (ICI) boilers, in this Commonwealth, and to replace the existing area-specific sulfur content limits for commercial fuel oils with a statewide sulfur limit. Section 123.22 regulates numbers (Nos.) 2, 4, 5 and 6 commercial fuel oils. 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 ICI boilers. The proposed rulemaking would reduce the allowable sulfur levels to 15 parts per million (ppm) for No. 2 and lighter commercial fuel oils to 0.25% sulfur content by weight for No. 4 commercial fuel oil and 0.5% sulfur content by weight for No. 5, 6 and heavier commercial fuel oils beginning May 1, 2012.

Combustion of sulfur-containing commercial fuel oils releases sulfur dioxide (SO₂) emissions, which contribute to the formation of regional haze and fine particulate matter (PM_{2.5}). Regional haze is visibility impairment produced by a multitude of sources and activities which emit fine particles and their precursors and which are located across a broad geographic area.

Sulfur dioxide is the most significant pollutant involved in the formation of regional haze. Sulfur dioxide emissions oxidize in the atmosphere to form sulfate particles. Visibility impairment, including regional haze, in rural areas of eastern North America is mostly due to sulfate particles, according to the 2006 "Contribution Assessment" prepared by the Mid-Atlantic/Northeast Visibility Union (MANE-VU).¹

Emissions of nitrogen oxides (NO_x), which contribute to a number of public health and environmental problems in the Northeast, including unhealthy levels of PM_{2.5} and ground-level ozone, are another product of combustion and would also decrease with the use of low-sulfur content commercial fuel oil

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due to furnace and boiler efficiency improvements. Implementation of the proposed control measure would benefit the health and welfare of the approximately 12 million human residents and numerous animals, and crops, vegetation and natural areas, of this Commonwealth by reducing the ambient levels of SO₂ and NO_x.

Section 169A of the Clean Air Act (CAA), established in the 1977 CAA amendments, sets forth in subsection (a)(1) a National goal for visibility, which goal is the "prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." See 42 USCA § 7491(a)(1). While this Commonwealth has no mandatory Class I Federal areas, emissions from this Commonwealth are considered to impact the MANE-VU Class I Federal areas. There are seven mandatory Class I Federal areas in the Mid-Atlantic and Northeast areas of the country. In addition, the emissions from this Commonwealth are considered to impact the Dolly Sods Wilderness Area in West Virginia and Shenandoah National Park in Virginia.

This Commonwealth is a member of MANE-VU, established in 2000 as the regional planning organization to help the Northeast states plan for their Regional Haze SIP submittals. The MANE-VU states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and the District of Columbia. Native American tribes in the region, the EPA, the U.S. Fish and Wildlife Service and the U.S. Forest Service are also members of MANE-VU.

MANE-VU evaluated several large source categories for their contribution to the MANE-VU SO₂ emission inventory, including electric generating units (EGUs), residential and commercial oil heat burners and furnaces, and ICI boilers. The Northeast States for Coordinated Air Use Management (NESCAUM) performed this evaluation for MANE-VU in 2005 using 2002 data, which was the most current information available at the time of the study. While EGUs are by far the largest source of SO₂ emissions in the MANE-VU region at 71%, SO₂ emissions from the burning of sulfur-containing commercial fuel oil in residential and commercial combustion units, combined, and in ICI boilers, each contribute about 7% to the MANE-VU SO₂ emission inventory, for a total of 14%.² In this Commonwealth, fuel oil combustion in residential and commercial combustion units contributes between 2% and 3% of SO₂ emissions in the MANE-VU region, depending on the season.³ The NESCAUM evaluation indicates that the anticipated annual SO₂ emission reduction benefits in this Commonwealth would be approximately 29,000 tons when the proposed low-sulfur content limits for commercial fuel oils are fully implemented.⁴

MANE-VU identified the reduction of sulfur limits in commercial fuel oils used in residential and commercial combustion units and ICI boilers as a cost effective strategy for reducing regional haze and adopted a statement in which member states agreed to pursue this strategy.⁵ The Department has reviewed the NESCAUM studies and MANE-VU recommendations and determined that the low-sulfur content limits for commercial fuel oil are appropriate measures to be pursued in this Commonwealth as part of the regional strategy to improve visibility. Lowering the sulfur content in commercial fuel oil sold for and used in combustion units in this Commonwealth would contribute to the MANE-VU goals of improving visibility in the region's mandatory Class I Federal areas. Actions taken as part of this Commonwealth's obligations for reducing haze on a regional level would also improve visibility in this Commonwealth's recreational and urban areas.

The existence of PM_{2.5} in the atmosphere not only contributes to the formation of regional haze, but

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also has adverse health effects. The health effects associated with exposure to PM_{2.5} are significant. Epidemiological studies have shown a significant correlation between elevated PM_{2.5} levels and premature mortality. Other important health effects associated with PM_{2.5} exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work and restricted activity days), lung disease, decreased lung function, asthma attacks and certain cardiovascular problems. Individuals particularly sensitive to PM_{2.5} exposure include older adults, people with heart and lung disease and children. On July 18, 1997, the EPA set the health-based (primary) and welfare-based (secondary) annual PM_{2.5} National Ambient Air Quality Standards (NAAQS) at a level of 15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) (62 FR 38652); the 24-hour standard was subsequently revised in October 2006 to a concentration of 35 $\mu\text{g}/\text{m}^3$ (71 FR 61144, October 17, 2006). At the present time, the following counties or portions thereof have been designated nonattainment for either the annual or the 24-hour standard or both: Allegheny (Liberty-Clairton), Allegheny (remainder), Armstrong, Berks, Beaver, Bucks, Butler, Cambria, Chester, Cumberland, Dauphin, Delaware, Greene, Indiana, Lancaster, Lawrence, Lebanon, Montgomery and Philadelphia.

Ozone is a serious human and animal health and welfare threat, causing or contributing to respiratory illnesses and decreased lung function, agricultural crop loss, visible foliar injury to sensitive plant species, and damage to forests, ecosystems and infrastructure. In March 2008, the EPA lowered the ozone NAAQS from 0.080 ppm to 0.075 ppm averaged over 8 hours to provide even greater protection for children, other at-risk populations and the environment against the array of ozone-induced adverse health and welfare effects (73 FR 16436, March 27, 2008). As required by the CAA, the Commonwealth submitted recommendations to the EPA in 2009 to designate 29 counties as nonattainment for the 2008 8-hour ozone NAAQS. However, the EPA has reconsidered the 2008 ozone NAAQS and on January 19, 2010, published a proposed rulemaking to set a more protective 8-hour primary standard at a lower level within the range of 0.060-0.070 ppm; the final revised ozone standard is expected in August 2010. See 75 FR 2938. Should the EPA set the standard at the lowest end of this range, all monitors measuring ozone in this Commonwealth could violate the NAAQS.

There are additional co-benefits of this proposed rulemaking. Sulfur dioxide emissions also contribute to the formation of acid rain. Both acid rain and PM_{2.5} contribute to agricultural crop and vegetation damage, and degradation of the Chesapeake Bay. Combustion of low-sulfur content commercial fuel oil would contribute to reducing the incidences of these adverse effects in this Commonwealth. Emissions of carbon dioxide, a greenhouse gas, should also decrease due to improved furnace and boiler combustion efficiency.

Benefits to commercial fuel oil users: Approximately 26% of the households in this Commonwealth use commercial fuel oil for space heat.⁶ Low-sulfur content commercial fuel oil has the potential to improve furnace and boiler efficiency by reducing fouling rates of furnace and boiler heat exchangers and other components. Reduced boiler and furnace fouling rates translate directly into lower vacuum-cleaning costs for fuel oil companies and homeowners by extending the service intervals. For example, using a median hourly service cost of \$72.50 per hour for vacuum-cleaning a furnace and changing commercial fuel oil from a sulfur content of 2500 ppm to 500 ppm would save \$29,000 a year per 1000 homes, or \$29.00 per home annually in the United States.⁷ Further, the availability of low-sulfur content commercial fuel oil would enable the introduction of highly-efficient advanced technology condensing furnaces. A lower sulfur content commercial fuel oil would also increase the number of cleaner burning fuel types available to consumers.

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Benefits to commercial fuel oil industry: A requirement for lower sulfur content commercial fuel oil would benefit distributors of commercial fuel oil by increasing their ability to compete with natural gas, a cleaner fuel than today's No. 2 commercial fuel oil. Another benefit is that consistency of No. 2 commercial fuel oil sulfur limits with highway and nonroad, locomotive and marine (NRLM) transportation diesel fuel sulfur content limits would help refinery owners and operators, distributors, carriers and owners and operators of commercial fuel oil and transportation diesel fuel terminals minimize the number of tanks and trucks needed. No. 2 commercial fuel oil could be combined with NRLM transportation diesel fuel in the same tanks and trucks. 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 NRLM transportation diesel fuels. The Federal final rule for *Control of Air Pollution from New Motor Vehicles: Heavy Duty Engines and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*, published on January 18, 2001, requires all refiners to produce 100% of their highway diesel fuel to meet the sulfur content limit of 15 ppm beginning June 1, 2010. See 66 FR 5002, p. 5067. The Federal final rule for *Control of Air Emissions from Nonroad Diesel Engines and Fuel*, published on June 29, 2004, requires the sulfur content limit for nonroad transportation diesel fuel be 15 ppm beginning June 1, 2010. See 69 FR 38958 at p. 39039. The sulfur content limit for locomotive and marine (except large ocean-going vessels) diesel fuel will be 15 ppm beginning June 1, 2012. See 69 FR p. 39039. Furthermore, since sulfur content limits for regulated commercial fuel oils would now be Commonwealth-wide rather than area-specific, compliance and recordkeeping would be simplified for the petroleum refining and distribution companies.

This proposed control measure is an important part of the Commonwealth's efforts to meet the 2018 reasonable progress goals for reducing regional haze established by the Commonwealth in consultation with the member states of MANE-VU and is also reasonably necessary to attain and maintain the PM_{2.5} NAAQS in this Commonwealth. The proposed rulemaking, if adopted as a final regulation, will be submitted to the EPA as a revision to the SIP.

(14) If scientific data, studies, references are used to justify this regulation, please submit material with the regulatory package. Please provide full citation and/or links to internet source.

Assessment of Reasonable Progress for Regional Haze In MANE-VU Class I Areas, July 9, 2007, located at: http://www.marama.org/visibility/RPG/FinalReport/RPGFinalReport_070907.pdf

Northeast States for Coordinated Air Use Management (NESCAUM), 2005. MARAMA Workshop on Energy and Air Quality Issues, September 23, 2008, Arthur Marin, NESCAUM.

Contribution of Home Heating Oil to SO₂ Emission Inventory by State, Arthur Marin, NESCAUM, 2005.

U.S. Energy Information Administration State Energy Profiles
(http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=PA)

Pennsylvania Department of General Services fuel report via email March 10, 2010.

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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(15) Describe who and how many will be adversely affected by the regulation. How are they affected?

According to the NESCAUM December 2005 report, the added cost for the lower sulfur content commercial fuel oil is expected to be less than the savings produced by the cleaner operation of combustion units.⁸ While there may be a price increase for commercial fuel oil users, this increase would be partially offset by increased efficiency and lower maintenance costs incurred for combustion units, or through competitive pricing heating oil vendors would experience with other fuels, natural gas in particular.

NRLM transportation diesel fuel is the same as No. 2 commercial fuel oil and is often used as home heating oil. A review of the National Oilheat Research Alliance (NORA) 2008 report "Northeast Heating Oil Assessment," indicates that in the MANE-VU region, 52% of product (including transportation and other diesel fuels) is currently required to be less than 15 ppm (ultra-low sulfur content). Another 33% is limited to 500 ppm and the remainder is above 500 ppm, typically 2000 ppm or higher. By 2012, the ultra-low-sulfur content portion increases to 85% and only 10% is still above 500 ppm, according to the report.⁹ While nonroad transportation diesel fuel is required to be 15 ppm by June 1, 2010, which is before the May 1, 2012, compliance date for No. 2 or lighter commercial fuel oil in the proposed rulemaking, some refineries may not have the technical ability to desulfurize fuel to the levels required by the proposed rulemaking, or to desulfurize enough fuel to meet demand for these fuels. The proposed rulemaking includes authority for the Department to temporarily suspend or modify the proposed requirements, with concurrence by the Administrator of the EPA, if supply in an air basin (or air basins) or a particular geographic area (for nonair basins) is reasonably unavailable. The proposed rulemaking would also specify that the sulfur content limit for No. 2 commercial fuel oil may not exceed 500 ppm if a temporary increase in the applicable limit of sulfur content is granted. This would protect both the producers and the consumers in the event that sufficient quantities of compliant No. 2 commercial fuel oil are unavailable to meet heating needs.

Some suppliers of commercial fuel oil may not be able to make capital investments to increase the volume of lower sulfur oil to supply compliant fuels to which this proposed regulation would apply. In a January 15, 2010, letter to the New Jersey Department of Environmental Protection (NJDEP), the American Petroleum Institute (API), which includes many but not all of the companies involved in the production and refining of petroleum, submitted the following comment on NJDEP's proposed "Sulfur in Fuels Rule": "The primary issue of concern in this rulemaking is the lowering of heating oil to 15 ppm sulfur by 2016. We urge the Department to continue to seek a consensus resolution that would offer significant environmental benefit while providing the necessary flexibility to the transportation and refinery segments. API supports a transition to 500 ppm sulfur home heating oil in 2014. 2014 will accommodate the economic uncertainties, challenges to project financing, and major construction lead time associated with refinery projects that this rule will necessitate. 2014 also fits with the federal diesel schedule and marine requirements in 2015." Furthermore, "API strongly believes that a 15 ppm sulfur standard should not be set for home heating oil. Requiring 15 ppm sulfur heating oil would place residential and commercial customers in the position of competing for supply from the transportation diesel market which has been growing steadily around the world. Moreover, a distinct heating oil market would no longer exist. If the state decides to move beyond a 500 ppm sulfur standard, such a reduction should be limited to 50 ppm...."

The Department was advised (orally) by Sunoco in 2009 that this company supplies about 75% of the

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market for home heating oil (No. 2 commercial fuel oil) in this Commonwealth and will have no difficulty in supplying fuel that meets the 15 ppm limit. Sunoco is not an API member

United Refining and American Refinery Group are two owners and operators in northwest Pennsylvania that would have to make additional desulfurization investments in order to produce compliant fuel oil.

(16) List the persons, groups or entities that will be required to comply with the regulation. Approximate the number of people who will be required to comply.

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 by this rulemaking.

There are five refineries in this Commonwealth, owned by four companies. The products of all five refineries would be affected by the proposed rulemaking. Owners and operators of refineries outside this Commonwealth would be indirectly affected if they supply distributors that sell commercial fuel oil in this Commonwealth. Sulfur limits have been established in motor fuels for 30 years, so this sophisticated industry has the technical capacity for implementing the program.

There are 120 fuel oil terminal operations operated by 38 different companies, and 737 distributors of petroleum products, in this Commonwealth. Not all of these operations handle commercial fuel oil. The terminal operators are dominated by familiar names from the petroleum industry, including Sunoco, BP, ExxonMobil and Gulf. Major distributors in this Commonwealth also operate terminals, including Pennsylvania Petroleum Corporation and Guttman Oil. While the size of distributor operations ranges from large to small, members of the petroleum distribution industry as a whole have been regulated for many years. Existing systems to track the quantity and composition of fuel are of long standing for purposes of compliance with both environmental and tax regulations.

End-users of commercial fuel oil range from large industrial users to homeowners. There are approximately 1.32 million households in this Commonwealth that may use this fuel (5.08 million households * 26% of households). (U.S. Energy Information Administration (EIA) State Energy Profiles (http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=PA)) However, the primary burden of compliance would be on those that "offer for sale, deliver for use, exchange in trade or permit the use of commercial fuel oil." These are the suppliers and operations selling to ultimate consumers. No recordkeeping or reporting would be required of ultimate consumers at private residences or apartment complexes and condominiums; all they need to do is buy and use compliant fuel.

Fuel combustion at many ICI sources is already regulated by the Department under its permit program; these sources would be required to comply with the proposed rulemaking, which retains (with modification) the equivalency provisions of the existing regulation as an alternative compliance mechanism. The equivalency provisions allow the use of equipment or a process to control emissions to the same level as would result from the use of a compliant commercial fuel oil. This choice would most likely only occur if the cost of control were less than the cost of the purchase of compliant commercial fuel oil.

Market forces and regulations for transportation-related diesel fuels in both the United States and internationally will be the major forces affecting this industry, since the use of commercial fuel oil for

residential heating and ICI boilers is a very small portion of diesel fuel consumption. No. 2 commercial fuel oil is the same as NRLM transportation diesel fuel.

SECTION III: COST AND IMPACT ANALYSIS

(17) Provide a specific estimate of the costs and/or savings to the **regulated community** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

The 2008 Northeast Heating Oil Assessment estimates that there would be a 6.3 to 6.8 cents per gallon (cents/gal) incremental production cost for 500 ppm vs. 2500 ppm sulfur content home heating oil (No.2 commercial fuel oil), including capital costs. Costs are estimated to be as much as 8.9 cents/gal for 15 ppm sulfur content vs. 2500 ppm. However, where refiners have desulfurization capabilities, the incremental cost of producing 15 ppm sulfur vs. 2500 ppm home heating oil will be less than 5 cents/gal (4.6 cents/gal). Note that these are costs to the producers; prices to the ultimate consumer will be influenced by factors in addition to the cost of reducing the sulfur content in the fuel oil. While additional desulfurization capacity may be needed to supply the MANE-VU region as a whole, we believe that the market can provide adequate supply of compliant fuel to Pennsylvania, including diversion of fuel that has been exported.

Furnace and boiler maintenance costs for consumers would be lower due to less fouling of their combustion units. Although low-sulfur content commercial fuel oil may cost a few cents per gallon more, savings on maintenance costs would help to defray that impact. Decreased fouling improves efficiency of the combustion unit, which results in lower fuel usage.

The EIA data for Adjusted Sales of Distillate Fuel Oil by End Use indicates that Pennsylvania residential customers purchased 601,113,000 gallons of distillate fuel oil in 2008. The average price of heating oil in 2008 was \$2.04/gallon (excluding taxes), also according to the EIA. Therefore, on average, each household used 455 gallons of fuel oil in 2008 (601,113,000 gallons/1,320,968 households in Pennsylvania). By multiplying the average price per gallon by the gallons used, it is estimated that each household spent \$928 on fuel oil in 2008, excluding taxes ($\$2.04 * 455 \text{ gal} = \928). Assuming that the additional cost of producing 15 ppm fuel oil is \$0.046 per gallon, as stated above, the increased cost to the residential customer would be \$21.00 ($\$2.04/\text{gal cost} + \$0.046/\text{gal increase} = \$2.086/\text{gal}$; $\$2.086/\text{gal} * 455 \text{ gal} = \949 ; $\$949 - \$928 = \$21.00$ additional cost). However, NESCAUM reports a median annual savings of \$29.00 per household on furnace vacuuming by using 500 ppm sulfur content commercial fuel oil. Therefore, the net savings would be \$8.00 per household by switching to lower sulfur fuel oil ($\$29.00$ vacuuming savings - $\$21.00$ additional costs = $\$8.00$ net savings).

(18) Provide a specific estimate of the costs and/or savings to **local governments** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

Local governments would be affected by this regulation primarily in their purchase of No. 2 commercial fuel oil for space heating, water heating, or both. It could be assumed that the use of commercial fuel oil for this purpose by local governments is proportionate to the use of commercial fuel oil in the general

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population. About 26% of Pennsylvania households rely on commercial fuel oil for space heating, water heating, or both, concentrated more in the eastern part of the Commonwealth than in other parts of it. (EIA State Energy Profiles (http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=PA))

Costs for the production of compliant fuel by the owners and operators of refineries are discussed in question 17. The wholesale and retail price differential for compliant fuel that affects local governments will be influenced by many factors in addition to the cost of reducing the sulfur content of the commercial fuel oil, including the demand and supply in the international markets for petroleum, diesel fuel and fuel oil. Therefore, costs, savings, or both, to local governments cannot be precisely projected. In recent years, the annual average spot market price (wholesale price at the New York Harbor) differential between No. 2 diesel fuel (15 ppm) and No. 2 home heating oil (No. 2 commercial fuel oil) has been between 4-6 cents.¹⁰

Local governments would also realize savings due to lower furnace and boiler maintenance costs due to less fouling of their combustion units. Although low-sulfur content commercial fuel oil may cost a few cents per gallon more, savings on maintenance costs would help to defray that impact. Decreased fouling improves efficiency of the combustion unit, which means lower fuel usage.

(19) Provide a specific estimate of the costs and/or savings to **state government** associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

State government would be affected by this regulation primarily in its purchase of No. 2 commercial fuel oil for space heating, water heating, or both, at Commonwealth facilities. The Pennsylvania Department of General Services (DGS) purchased a minimum of 3,323,113 gallons of No. 2 commercial fuel oil in 2009.¹¹ Only one Commonwealth facility uses No. 4 commercial fuel oil, of which it purchased 80,500 gallons in 2009.¹²

Costs for the production of compliant commercial fuel oil by the owners and operators of refineries are discussed in question 17. The wholesale and retail price differential for compliant fuel that affects state governments will be influenced by factors in addition to the cost of improving the commercial fuel oil, including demand and supply in the international markets for petroleum, diesel fuel and fuel oil. Therefore, costs, savings, or both, to state government cannot be precisely projected. In recent years, the annual average spot market price (wholesale price at the New York Harbor) differential between No. 2 diesel fuel (15 ppm) and No. 2 home heating oil (No. 2 commercial fuel oil) has been between 4-6 cents.¹³

State government would also realize savings due to lower furnace and boiler maintenance costs due to less fouling of its combustion units. Although low-sulfur content commercial fuel oil may cost a few cents per gallon more, savings on maintenance costs would help to defray that impact. Decreased fouling improves efficiency of the combustion unit, which means lower fuel usage.

(20) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

This table cannot be accurately completed due to the huge number of uncertainties involved, primarily in

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predicting the price of fuel, but also in the investments that may be needed by refineries to supply this Commonwealth with compliant fuel. The Department believes there is a sufficient capacity for 15 ppm commercial fuel oil to be distributed to Pennsylvania. Therefore, costs used below reflect the lower cents per gallon increase which was based on revamping existing desulfurization equipment. It should be noted, however, that Conoco Phillips and API have indicated that new desulfurization equipment would be required to increase the capacity of 15 ppm commercial fuel oil to be distributed to the entire MANE-VU area. In addition, there are two refineries in northwest Pennsylvania that would have to install additional desulfurization capacity to supply compliant fuel. The cost of those investments has not been included in the total costs below because fuel supplies could come from other suppliers, and because noncompliant fuel could be exported by the refiners to other markets.

Only the total rows are completed because given the Pennsylvania sales data from the EIA, local and state government costs or savings could not be broken out. The values in the table were derived using the following assumptions:

Total costs:

1. The cost increase of \$0.046/gallon to change from 2500 ppm to 15 ppm commercial fuel oil. (4.6 cents/gal (min) from NORA "Northeast Heating Oil Assessment" Table VIII.1, March 2008.)
2. 1,069,026,000 gallons of distillate fuel oil purchased in Pennsylvania in 2008. (EIA data: Adjusted Sales of Distillate Fuel Oil by End User information totaling the Residential, Commercial, Industrial, Oil Company, Farm and Electric Power sectors.)
3. The increase in price would be similar to the increase in cost to manufacture. (Based on the New York Harbor spot market price differential in the last year.)
4. There is little change in demand or other variables that would affect the actual price of commercial fuel oil.
5. The values do not include an increase for the change in Nos. 4, 5, 6 and heavier fuels in 2012 because no data was found on cost or price of lowering sulfur content of these fuel types.
6. 1,069,026,000 gallons x \$0.046/gallon equals \$49,175,196.

Cost increase for residential sector:

1. The cost increase of \$0.046/gallon to change from 2500 ppm to 15 ppm commercial fuel oil. (4.6 cents/gal (min) from NORA "Northeast Heating Oil Assessment" Table VIII.1, March 2008.)
2. 601,113,000 gallons of distillate fuel oil purchased by Pennsylvania residential customers in 2008. (EIA data: Adjusted Sales of Distillate Fuel Oil by End Use.)
3. The increase in price would be similar to the increase in cost to manufacture. (Based on the New York Harbor spot market price differential in the last year.)
4. There is little change in demand or other variables that would affect the actual price of commercial fuel oil.
5. 601,113,000 gallons x \$0.046/gallon equals \$27,651,198. (This would be an approximate increase of \$21.00 per household using commercial fuel oil.)

Cost increase for nonresidential sector includes: (state and local governments), commercial, industrial, oil company, farm and electric power:

1. Total costs – residential costs = nonresidential costs: \$49,175,196 - \$27,651,198 = \$21,523,998.

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Total savings, residential sector only:

1. EIA State Profile info: PA population is 12.6 million in 2009, 26% of households use commercial fuel oil for home heating.
2. Assume 2.48 people per household equals 5,080,645 households. This number of households x 26% equals 1,320,968 households using fuel oil.
3. NESCAUM reports a median annual savings of \$29.00 per household on furnace vacuuming by using 500 ppm sulfur content commercial fuel oil instead of 2500 ppm sulfur content commercial fuel oil.
4. 1,320,968 households x \$29 annual savings = \$38,308,072 savings.

	Current FY Year (09-10)	FY +1 Year (10-11)	FY +2 Year (11-12)	FY +3 Year (12-13)	FY +4 Year (13-14)	FY +5 Year (14-15)
SAVINGS:	\$	\$	\$	\$	\$	\$
Regulated Community – residential sector		negligible	\$38,308,072	\$38,308,072	\$38,308,072	\$38,308,072
Regulated Community – nonresidential sector (Businesses and State and Local Governments)		unknown	unknown	unknown	unknown	unknown
Total Savings		negligible	\$38,308,072	\$38,308,072	\$38,308,072	\$38,308,072
COSTS:						
Regulated Community – residential sector		negligible	\$27,651,198	\$27,651,198	\$27,651,198	\$27,651,198
Regulated Community – nonresidential sector (Businesses and State and Local Governments)		negligible	\$21,523,998	\$21,523,998	\$21,523,998	\$21,523,998
Total Costs		negligible	\$49,175,196	\$49,175,196	\$49,175,196	\$49,175,196

Regulatory Analysis Form

REVENUE LOSSES:						
Regulated Community						
Local Government						
State Government						
Total Revenue Losses						

(20a) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY-3 (07/08)	FY-2 (08/09)	FY-1 (09/10)	Current FY (10/11)
Clean Air Fund Major Emission Facilities (215-20077)	\$18,353,000	\$22,660,000	\$21,877,000	\$24,732,000

(21) Explain how the benefits of the regulation outweigh any cost and adverse effects.

Costs to the industry to comply with this proposed rulemaking would be outweighed by the health and welfare benefits of this proposed rulemaking. The health and welfare benefits are two-fold. First, the emissions of pollutants into the atmosphere and subsequent formation of regional haze and PM2.5 are reduced from using lower sulfur content commercial fuel oils. Secondly, less commercial fuel oil is burned due to the improved combustion efficiency of lower sulfur content commercial fuel oil, thereby using less fossil fuel resources.

Regional consistency of commercial fuel oil sulfur limits and consistency of commercial fuel oil sulfur limits with transportation diesel sulfur limits would help refinery owners and operators, distributors and owners and operators of fuel oil and transportation diesel fuel terminals with tank storage constraints and record-keeping requirements. No. 2 commercial fuel oil could be combined with NRLM transportation diesel fuel in the same tanks and trucks. Regional implementation of low-sulfur content limits in commercial fuel oil would help industry comply by providing a broad Northeast and Mid-Atlantic market for low-sulfur content product. In addition, since commercial fuel oil sulfur limits would now be Commonwealth-wide rather than area-specific, compliance and recordkeeping would be simplified for the petroleum refining and distribution companies. Reducing costs to producers through regional consistency would reduce fuel costs to Pennsylvania consumers. Pennsylvania consumers would also benefit from reduced maintenance costs and longer-lasting heating equipment due to less fouling of heat exchangers.

(22) Describe the communications with and input from the public and any advisory council/group in the development and drafting of the regulation. List the specific persons and/or groups who were involved.

Stakeholder consultation occurred at various levels of development. MANE-VU consulted with stakeholders during the initial development of the regional strategy. MANE-VU also held a meeting with oil distributors and terminal operators in December 2008 and with refinery owners and operators in February 2009. The Department participated in these discussions. The Department also met with the

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Associated Petroleum Industries of Pennsylvania, representatives of the American Petroleum Institute and their member companies, with individual refiners and distributors such as Sunoco, United Refining Company and the American Refining Group, the Pennsylvania Petroleum Marketers and Convenience Store Association, the National Oilheat Research Alliance, and has also consulted with owners and operators of terminals and retail outlets to get background information and input in drafting the proposed regulation.

The concepts of the proposed rulemaking were discussed with the Air Quality Technical Advisory Committee (AQTAC, Committee) at its February 12, 2009, meeting. The proposed rulemaking was discussed with the AQTAC on February 18, 2010. The Committee voted 12-0 to concur with the Department's recommendation to present the proposed amendments, with suggested revisions, to the Environmental Quality Board for consideration for publication as a proposed rulemaking. The AQTAC recommended that the proposal include a provision allowing for the use, by the ultimate consumer, of non-complying commercial fuel oil, in tanks, purchased before the compliance date. In addition, the proposed rulemaking was discussed with the Citizens Advisory Council (CAC) air committee at its February 16, 2010, meeting. The CAC air committee had no objections and the full CAC concurred on March 16, 2010. The Department presented the proposed rulemaking on April 21, 2010, to the Agricultural Advisory Board and on April 28, 2010, to the Small Business Compliance Advisory Committee.

(23) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

One alternative was to use the later compliance date of July 1, 2016, contained in the MANE-VU strategy for 15 ppm commercial fuel oil. The proposed rulemaking has proposed a compliance date of May 1, 2012, for 15 ppm commercial fuel oil because the Department believes the environmental and economic advantages are great and the threat of supply problems is small.

MANE-VU originally designed a two-zone approach, by which "inner zone" states, including this Commonwealth, would implement requirements earlier than "outer zone" states, which are the New England states. MANE-VU and stakeholders now agree that the two-zone approach is not necessary.

(24) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

The proposed rulemaking is more stringent than Federal standards since the Federal government does not regulate the sulfur content of commercial fuel oils. There are Federal regulations that require highway and NRLM transportation diesel fuels meet low-sulfur content limits on phased-in schedules. Commercial fuel oil is a small portion of diesel fuel production. The sulfur level of 15 ppm in the proposed rulemaking for No. 2 commercial fuel oil is consistent with the level that will be required in highway and NRLM transportation diesel fuels.

The Federal final rule for *Control of Air Pollution from New Motor Vehicles: Heavy Duty Engines and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*, published on January 18, 2001, requires all refiners to produce 100% of their highway transportation diesel fuel to meet the sulfur content limit of 15 ppm beginning June 1, 2010. See 66 FR 5002, p. 5067.

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The sulfur content limit of 15 ppm in the proposed rulemaking for No. 2 commercial fuel oil is also consistent with the sulfur content requirements of the indirectly related Federal final rule for *Control of Air Emissions from Nonroad Diesel Engines and Fuel*, published on June 29, 2004 (69 FR 38958). The requirements under this Federal regulation include sulfur content limits for NRLM transportation diesel fuel. This Federal regulation contains a three-step implementation schedule for reducing the sulfur content of NRLM transportation diesel fuel from uncontrolled levels down to 15 ppm. Beginning June 1, 2007, refiners and importers were required to produce or import NRLM transportation diesel fuel with a maximum sulfur content of 500 ppm. Beginning June 1, 2010, refiners and importers are required to produce or import nonroad transportation diesel fuel with a maximum sulfur content of 15 ppm. Beginning June 1, 2012, refiners and importers are required to produce or import locomotive and marine (except large ocean-going vessels) transportation diesel fuel with a maximum sulfur content of 15 ppm. See 69 FR p. 39039. Therefore, by 2012, almost all transportation diesel fuels must meet the same 15 ppm standard that is proposed in this rulemaking for No. 2 commercial fuel oil with a compliance date of May 1, 2012. No. 2 commercial fuel oil is the same as NRLM transportation diesel fuel.

(25) How does this regulation compare with those of other states? How will this affect Pennsylvania's ability to compete with other states?

The proposed amendments are part of a regional strategy for the Commonwealth and other MANE-VU states. The MANE-VU statement to pursue lower sulfur content commercial fuel oil was agreed to by all MANE-VU states and included in the submissions of Regional Haze SIP revisions for those states that have made such submissions to date.

New Jersey proposed its "Sulfur in Fuels Rules" for sulfur limits in fuel oil, for which public comment closed on March 15, 2010. The New Jersey proposal limits No. 2 commercial fuel oil to 500 ppm in 2014 and 15 ppm in 2016, consistent with the MANE-VU implementation strategy. In addition, legislation to limit home heating oil to 15 ppm by 2011 is being considered. In New York, legislation to limit home heating oil to 15 ppm by 2011 has been passed by their House and is being considered by their Senate. New York City, a huge commercial fuel oil market, may ban the use of Nos. 4-6 commercial fuel oil entirely because of the fine particulate issues in the city. Other states in the MANE-VU region are expected to develop regulations subsequently.

Industry and commercial businesses in this Commonwealth would not be put at a disadvantage by the proposed amendments. Owners and operators of refineries and retail outlets of commercial fuel oil would be able to continue to market higher sulfur content commercial fuel oil to Ohio and other southern states outside of the MANE-VU area and outside of this Commonwealth, but would be subject to the same requirements as manufacturers and sellers of products that are produced for the Pennsylvania market. Ultimate consumers would be able to buy compliant commercial fuel oil easily because of the regional nature of the regulation.

(26) Will the regulation affect any other regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

No.

(27) Submit a statement of legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork, including copies of forms or reports, which will be required for implementation of the regulation and an explanation of measures which have been taken to minimize

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these requirements.

The Department conferred with the regulated industry on normal industry practices and has taken those practices into account in crafting requirements allowing adequate enforcement without undue extra burden. The proposed regulation would require that, beginning with the refinery owner or operator who sells or transfers commercial fuel oil and ending with the ultimate consumer, each time the physical custody of or title to a shipment of commercial fuel oil changes hands the transferor would be required to provide the transferee with an electronic or paper record of the transaction. Each affected person would be required to keep the records in electronic or paper format for 2 years, except those ultimate consumers located at a private residence or owners of an apartment or condominium building housing private residents.

(28) Please list any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, elderly, small businesses, and farmers.

There are no special provisions.

¹Contributions to Regional Haze in the Northeast and Mid-Atlantic United States, Mid-Atlantic/ Northeast Visibility Union, (MANE-VU) Contribution Assessment, August 2006, p. 2-4.

²Northeast States for Coordinated Air Use Management (NESCAUM), 2005. MARAMA Workshop on Energy and Air Quality Issues, September 23, 2008, Arthur Marin, NESCAUM.

³Contribution of Home Heating Oil to SO₂ Emission Inventory by State, Arthur Marin, NESCAUM, 2005.

⁴MANE-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.

⁵Statement of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) Concerning a Course of Action Within MANE-VU Toward Assuring Reasonable Progress (June 20, 2007)

⁶U.S. Energy Information Administration, State Energy Profiles

⁷NESCAUM report: "Low Sulfur Heating Oil in the Northeast States: An Overview of Benefits, Costs and Implementation Issues," December 2005, pages 3-2 and 3-3.

⁸NESCAUM report: "Low Sulfur Heating Oil in the Northeast States: An Overview of Benefits, Costs and Implementation Issues," December 2005, page 3-1.

⁹"Northeast Heating Oil Assessment" by Hart Energy Consulting for National Oilheat Research Alliance, March 2008 page 36

¹⁰U.S. Energy Information Administration, New York Harbor Low Sulfur No. 2 Diesel Spot Price and No. 2 Heating Oil Spot Price, (annual), obtainable from EIA Petroleum Navigator at http://tonto.eia.doe.gov/dnav/pet/pet_pri_top.asp

¹¹Pennsylvania Department of General Services fuel report via email March 10, 2010.

¹²Ibid.

¹³U.S. Energy Information Administration, New York Harbor Low Sulfur No. 2 Diesel Spot Price and No. 2 Heating Oil Spot Price, (annual), obtainable from EIA Petroleum Navigator at http://tonto.eia.doe.gov/dnav/pet/pet_pri_top.asp.

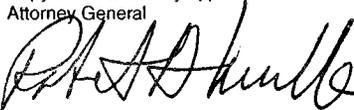
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By: (Deputy Attorney General)

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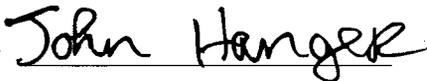
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DOCUMENT/FISCAL NOTE NO. 7-462

DATE OF ADOPTION JULY 13, 2010

BY 

TITLE JOHN HANGER
CHAIRMAN

EXECUTIVE OFFICER CHAIRMAN OR SECRETARY

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BY


DATE OF APPROVAL

(Deputy General Counsel)
(Chief Counsel - Independent Agency)
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or objection within 30 days after submission.

NOTICE OF PROPOSED RULEMAKING

DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD

COMMERCIAL FUEL OIL SULFUR LIMITS FOR COMBUSTION UNITS

25 Pa. Code, Chapters 121, 123 and 139

Notice of Proposed Rulemaking
Department of Environmental Protection
Environmental Quality Board
(25 Pa. Code Chapters 121, 123 and 139)
Commercial Fuel Oil Sulfur Limits for Combustion Units

Preamble

The Environmental Quality Board (Board) proposes to amend Chapters 121, 123 and 139 (relating to general provisions; standards for contaminants; and sampling and testing) to read as set forth in Annex A.

The proposed rulemaking would amend § 123.22 (relating to combustion units) to lower the allowable sulfur content of commercial fuel oil for use in combustion units and replace the existing area-specific sulfur content limits for commercial fuel oils with a statewide sulfur limit; add provisions for sampling and testing, and recordkeeping and reporting, under § 123.22; revise the sampling and testing requirements in Chapter 139; and add definitions to § 121.1 (relating to definitions) for two new terms, and amend the definitions of eight existing terms, to provide clarity and support the amendments to Chapter 123.

This proposal was adopted by the Board at its meeting of July 13, 2010.

A. Effective Date

These amendments will go into effect upon publication in the *Pennsylvania Bulletin* as final rulemaking.

B. Contact Persons

For further information contact Arleen Shulman, Chief, Division of Air Resource Management, P.O. Box 8468, Rachel Carson State Office Building, Harrisburg, PA 17105-8468, (717) 772-3436, or Kristen Furlan, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Information regarding submitting comments on this proposal appears in Section J of this preamble. Persons with a disability may use the Pennsylvania AT&T Relay Service by calling (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This proposal is available electronically through the Department of Environmental Protection's (Department) Web site at www.depweb.state.pa.us (DEP Search/Keyword: Public Participation).

C. Statutory Authority

The proposal is authorized under section 5(a)(1) of the Air Pollution Control Act (APCA) (35 P.S. § 4005(a)(1)), which grants the Board the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth, and section

5(a)(8) of the APCA (35 P.S. § 4005(a)(8)), which grants the Board the authority to adopt rules and regulations designed to implement the provisions of the CAA.

D. Background and Purpose

Combustion of sulfur-containing commercial fuel oils releases sulfur dioxide (SO₂) emissions, which contribute to the formation of regional haze and fine particulate matter (PM_{2.5}), both of which are serious public welfare and human health threats. Regional haze is visibility impairment that is produced by a multitude of sources and activities that emit fine particles and their precursors and which are located across a broad geographic area. Fine particles have a diameter smaller than 2.5 micrometers and are also called PM_{2.5}. Particles affect visibility through the scattering and absorption of light, and PM_{2.5} – particles similar in size to the wavelength of light – are most efficient, per unit of mass, at reducing visibility. Regional haze affects urban and rural areas, including National parks, forests, and wilderness areas (Federal “Class I” areas).

Sulfur dioxide is the most significant pollutant involved in the formation of regional haze. Sulfur dioxide emissions oxidize in the atmosphere to form sulfate particles. Visibility impairment, including regional haze, in rural areas of eastern North America is mostly due to sulfate particles, according to the 2006 "Contribution Assessment" prepared by the Mid-Atlantic/Northeast Visibility Union (MANE-VU). *Contributions to Regional Haze in the Northeast and Mid-Atlantic United States*, Mid-Atlantic/ Northeast Visibility Union, (MANE-VU) Contribution Assessment, August 2006, p. 2-4.

In 1977, Congress amended the Federal Clean Air Act (CAA) by adding Section 169A (relating to visibility protection for Federal class I areas) to set a National goal of the “prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution.” See 42 USCA § 7491(a)(1). Congress amended the CAA in 1990, adding Section 169B (relating to visibility) to authorize further research and regular assessments of the progress made so far toward the National visibility goals. See 42 USCA § 7492.

The National Academy of Sciences concluded in 1993 that the average visual range in the eastern United States has been reduced to approximately 30 kilometers or one-fifth of the visual range that would exist under natural conditions. (Committee on Haze in National Parks and Wilderness Areas, National Research Council, National Academy of Sciences, *Protecting Visibility in National Parks and Wilderness Areas*, (Washington, D.C. 1993).)

On July 1, 1999, the U.S. Environmental Protection Agency (EPA) published its initial regulations setting forth states’ requirements to reduce regional haze (64 FR 35714). The regulations aim to achieve the National visibility goal set by the CAA by 2064. The EPA published final regional haze regulations on July 6, 2005 (70 FR 39104). The regulations can be found at 40 CFR Part 51, Subpart P (relating to protection of visibility) (40 CFR §§ 51.300-51.309). EPA’s regulations require all states, even those that do not contain a Federal Class I area, to submit a revision to their State Implementation Plan (SIP) containing emission reduction strategies to improve visibility in Class I areas that their emissions affect.

The EPA regulations require states to demonstrate reasonable progress toward meeting the National goal of a return to natural visibility conditions by 2064. States with Class I areas must establish reasonable progress goals, expressed in deciviews, for visibility improvement at each Class I area. (The lower the deciview value, the better the perception of visibility.) The first set of reasonable progress goals must be met through measures contained in each state's long-term strategy covering the period from the present until 2018. A long-term strategy includes enforceable emissions limitations, compliance schedules and other measures as necessary to achieve the reasonable progress goals.

States are required to evaluate progress toward reasonable progress goals every five years to assure that emissions controls are on track with emissions reduction forecasts in the SIP. The first progress report is due 5 years from the submittal of the initial implementation plan. If emissions controls are not on track to meet SIP forecasts, then a state would need to take action to assure emissions controls by 2018 would be consistent with the SIP or to revise the SIP to be consistent with the revised emissions forecast.

This Commonwealth is a member of the MANE-VU, established in 2000 as the regional planning organization to help the Northeast states plan for their Regional Haze SIP submittals. The MANE-VU states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont and the District of Columbia. Native American tribes in the region, the EPA, the U.S. Fish and Wildlife Service and the U.S. Forest Service are also members.

Although this Commonwealth has no mandatory Class I Federal areas, emissions from this Commonwealth are considered to impact the seven mandatory Class I Federal areas in the MANE-VU region. In addition, the emissions from this Commonwealth are considered to impact the Dolly Sods Wilderness Area in West Virginia and Shenandoah National Park in Virginia.

MANE-VU evaluated several large source categories for their contribution to the MANE-VU SO₂ emission inventory, including electric generating units (EGUs), residential and commercial oil heat burners and furnaces, and industrial/commercial/institutional (ICI) boilers. The Northeast States for Coordinated Air Use Management (NESCAUM) performed this evaluation for MANE-VU in 2005 using 2002 data, which was the most current information available at the time of the study. While EGUs are by far the largest source of SO₂ emissions in the MANE-VU region at 71%, SO₂ emissions from the burning of sulfur-containing commercial fuel oil in residential and commercial combustion units, combined, and in ICI boilers, each contribute about 7% to the MANE-VU SO₂ emission inventory, for a total of 14%. In this Commonwealth, commercial fuel oil combustion in residential and commercial combustion units contributes between 2% and 3% of SO₂ emissions in the MANE-VU region, depending on the season. The NESCAUM evaluation indicates that the anticipated annual SO₂ emission reduction benefits in this Commonwealth would be approximately 29,000 tons when the proposed low-sulfur content limits for commercial fuel oils are fully implemented.

MANE-VU identified the reduction of sulfur limits in commercial fuel oils used in residential and commercial combustion units as a cost effective strategy for reducing regional haze and adopted a statement in which member states agreed to pursue this strategy. The Department has reviewed the

NESCAUM studies and MANE-VU recommendations and determined that the recommended low-sulfur content limits for commercial fuel oil are appropriate measures to be pursued in this Commonwealth as part of the regional strategy to improve visibility. Lowering the sulfur content in commercial fuel oil sold for and used in combustion units in this Commonwealth would contribute to the MANE-VU goals of improving visibility in the region's mandatory Class I Federal areas. Actions taken as part of this Commonwealth's obligations for reducing haze on a regional level would also improve visibility in this Commonwealth's recreational and urban areas.

The existence of PM_{2.5} in the atmosphere not only produces regional haze but also has significant adverse health effects. Epidemiological studies have shown a significant correlation between elevated PM_{2.5} levels and premature mortality. Other important health effects associated with PM_{2.5} exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work and restricted activity days), lung disease, decreased lung function, asthma attacks and certain cardiovascular problems. Individuals particularly sensitive to PM_{2.5} exposure include older adults, people with heart and lung disease and children.

On July 18, 1997, the EPA set health-based (primary) and welfare-based (secondary) PM_{2.5} annual National Ambient Air Quality Standards (NAAQS) at a level of 15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) (62 FR 38652); the 24-hour NAAQS was subsequently revised in October 2006 to a concentration of 35 $\mu\text{g}/\text{m}^3$. 71 FR 61144 (October 17, 2006). The EPA has designated the following counties or portions thereof as being in nonattainment of either the annual or the 24-hour PM_{2.5} standard or both: Allegheny (Liberty-Clairton), Allegheny (remainder), Armstrong, Berks, Beaver, Bucks, Butler, Cambria, Chester, Cumberland, Dauphin, Delaware, Greene, Indiana, Lancaster, Lawrence, Lebanon, Montgomery and Philadelphia.

In a March 2010 draft report prepared as part of the EPA's periodic review of NAAQS, the EPA concluded that existing standards for fine particles are insufficient to protect public health and reduce the pollutant's impact on visibility. The draft report recommends that the EPA consider setting significantly more protective standards, based on the fact that recent research into the health effects of fine particles calls into question the adequacy of the current suite of standards. See the EPA's *Policy Assessment for the Review of the Particulate Matter National Ambient Air Quality Standards: First External Review Draft*, March 2010. The draft report also recommends the agency consider setting a secondary standard for PM_{2.5} to protect visibility.

Sulfur dioxide emissions also contribute to the formation of acid rain. Both acid rain and PM_{2.5} contribute to agricultural crop and vegetation damage, and degradation of the Chesapeake Bay. Combustion of low-sulfur content commercial fuel oil would contribute to reducing the incidences of these adverse effects in this Commonwealth.

There are several important co-benefits of this proposed rulemaking. Emissions of nitrogen oxides (NO_x), which contribute to a number of public health and environmental problems in the Northeast, including unhealthy levels of PM_{2.5} and ground-level ozone, would also decrease with the use of low-sulfur content commercial fuel oil due to furnace and boiler efficiency improvements. Emissions of carbon dioxide, a greenhouse gas, should also be reduced since with improved efficiency, overall commercial fuel oil consumption should decrease.

Ozone is a serious human and animal health and welfare threat, causing or contributing to respiratory illnesses and decreased lung function, agricultural crop loss, visible foliar injury to sensitive plant species, and damage to forests, ecosystems and infrastructure. In March 2008, the EPA lowered the ozone NAAQS from 0.080 parts per million (ppm) to 0.075 ppm averaged over 8 hours to provide even greater protection for children, other at-risk populations and the environment against the array of ozone-induced adverse health and welfare effects. 73 FR 16436 (March 27, 2008). As required by the CAA, the Commonwealth submitted recommendations to the EPA in 2009 to designate 29 counties as nonattainment for the 2008 8-hour ozone NAAQS. However, the EPA has reconsidered the 2008 ozone NAAQS and on January 19, 2010, published a proposed rulemaking to set a more protective 8-hour primary standard at a lower level within the range of 0.060-0.070 ppm; the final revised ozone standard is expected in August 2010. See 75 FR 2938. Should EPA set the standard at the lowest end of this range, all monitors measuring ozone in this Commonwealth could violate the NAAQS.

This proposed rulemaking is designed to lower the allowable sulfur content limits of commercial fuel oils used in oil-burning combustion units in this Commonwealth and to replace the existing area-specific sulfur content limits for commercial fuel oils with a statewide sulfur limit. The rulemaking would reduce the levels of sulfur in commercial fuel oils used in residential and commercial oil heat burners and furnaces, and in ICI boilers. Section 123.22 regulates numbers (Nos.) 2, 4, 5 and 6 commercial fuel oils. No. 2 and lighter commercial fuel oil is generally used for residential and commercial heating. Nos. 4, 5, 6 and heavier commercial fuel oils are used in ICI boilers.

The proposed rulemaking would apply to the owner or operator of refineries, pipelines, terminals, retail outlet fuel storage facilities, and ultimate consumers, including commercial and industrial facilities, facilities with a unit burning regulated fuel oil to produce electricity, and domestic home heaters. The requirements would be focused on persons or entities that “offer for sale, deliver for use, exchange in trade or permit the use of commercial fuel oil.” These are the suppliers and operations selling to the ultimate consumer. No recordkeeping or reporting would be required of the ultimate consumer receiving commercial fuel oil for use at a private residence or an apartment or condominium building that houses private residents; all they would need to do is buy and use compliant commercial fuel oil.

The Department consulted with the Air Quality Technical Advisory Committee (Committee) on the proposed rulemaking on February 18, 2010. The Committee unanimously concurred in the Department’s recommendation to present the proposed amendments, with suggested revisions, to the Board for approval. The Department also consulted with the Citizens Advisory Council, Small Business Compliance Advisory Committee and Agricultural Advisory Board.

E. Summary of Regulatory Requirements

This proposed rulemaking would amend definitions of eight terms in § 121.1. The proposed rulemaking would amend the definitions of “commercial fuel oil” and “noncommercial fuel” to synchronize them. The proposal would expand the definition of “carrier” so that it applies when commercial fuel oil is carried. The proposal would amend the definition of “distributor” so that it applies when commercial fuel oil is distributed and to broaden the list of transferees. The proposal

would similarly expand the definitions of “retail outlet,” and “terminal.” The proposal would provide more specificity to the definitions of “transferee” and “transferor” by listing examples of persons and entities included in the definition. The proposed rulemaking would add the terms “ASTM” and “ultimate consumer” because these terms are used elsewhere in the rulemaking.

The proposed rulemaking would amend each of the subsections of § 123.22 and add two new subsections at the end. Subsection (a) applies to nonair basin areas. (Air basins are defined geographically in § 121.1.) The proposed amendments to subsection (a) would make minor editorial revisions to the general provision in paragraph (1). The proposed rulemaking would reduce the allowable sulfur limits of commercial fuel oil found in paragraph (2), in proposed subparagraph (i), to 15 ppm for No. 2 and lighter commercial fuel oils and to 0.25% sulfur content by weight for No. 4 commercial fuel oil and 0.5% sulfur content by weight for No. 5, 6 and heavier commercial fuel oils beginning May 1, 2012. On and after those dates, no person would be authorized to offer for sale, deliver for use, exchange in trade or permit the use of a non-complying commercial fuel oil in a nonair basin.

Proposed amendments to paragraph (2) would contain two exceptions. The first would be found in proposed subparagraph (ii), which would allow commercial fuel oil that is stored in this Commonwealth by the ultimate consumer prior to the applicable compliance date listed above and which met the applicable maximum sulfur content at the time it was stored to be used in this Commonwealth after the applicable compliance date. The second would be found in proposed subparagraph (iii), which would authorize the Department to temporarily suspend or increase the applicable limit or percentage by weight of sulfur content of a commercial fuel oil if the Department were to determine that an insufficient quantity of compliant commercial fuel oil were reasonably available in a nonair basin area. Proposed subparagraph (iv) would authorize the Department to limit a suspension or increase granted under subparagraph (iii) to the shortest duration in which adequate supplies of compliant commercial fuel oil can be made reasonably available. Proposed subparagraph (v) would specify that the sulfur content limit for No. 2 and lighter commercial fuel oil may not exceed 500 ppm if a temporary increase in the applicable limit of sulfur content is granted under subparagraph (iii).

The proposed rulemaking would amend the equivalency provision of paragraph (3) to provide greater clarity. The equivalency provision requires an equivalent amount of emission reductions when equipment or a process is used to reduce sulfur emissions from the burning of a fuel with a higher sulfur content than that specified in paragraph (2).

The proposed rulemaking would make similar amendments to the remaining four subsections of § 123.22, which apply as follows: subsection (b) applies to the Erie, Harrisburg, York, Lancaster, and Scranton, Wilkes-Barre air basins; subsection (c) applies to the Allentown, Bethlehem, Easton, Reading, Upper Beaver Valley and Johnstown air basins; subsection (d) applies to the Allegheny County, Lower Beaver Valley and Monongahela Valley air basins; and subsection (e) applies to the Southeast Pennsylvania air basin. Each of these air basins is defined in § 121.1. In subsection (d), the proposed rulemaking would add the commercial fuel oil limits and percentages, as well as the equivalency provision, as this subsection did not previously contain them.

The proposed rulemaking would add subsection (f) to § 123.22, establishing sampling and testing requirements for refinery and terminal owners and operators to ensure compliance with the allowable sulfur limits for commercial fuel oil. A refinery owner or operator who produces commercial fuel oil intended for use or used in this Commonwealth on or after the applicable compliance dates would be required to sample, test and calculate the sulfur content of each batch of the commercial fuel oil. A terminal owner or operator would be required to develop and implement written procedures, including procedures for commercial fuel oil sampling and testing, which would be required to be made available to the Department upon request.

The proposed rulemaking would add subsection (g) to § 123.22, establishing recordkeeping and reporting requirements applicable to all transferors and transferees in the manufacture and distribution chain for commercial fuel oil, from the refinery owner or operator to the ultimate consumer. This subsection would require each transferor to provide each transferee with an electronic or paper record containing specified information each time the physical custody of, or title to, a shipment of commercial fuel oil were to change hands. The transferors and transferees would be required to maintain the records for two years and provide them to the Department upon request. The subsection would also require refinery and terminal owners and operators to maintain the records developed under proposed subsection (f) for two years and to provide them to the Department upon request. Under this proposed subsection, private residence ultimate consumers would not be required to maintain records; nor would ultimate consumers who were owners of apartment or condominium buildings housing private residents if the transfer or use of the commercial fuel oil occurs for use at the building. Other ultimate consumers would be required to maintain the record provided to them in the transfer of the commercial fuel oil.

The proposed rulemaking would amend § 139.4 (relating to references) to update six of the applicable sulfur method references and to add two new sulfur method references.

The proposed rulemaking would amend § 139.16 (relating to sulfur in fuel oil) to add cross-references to the two new sulfur method references in § 139.4.

This proposed control measure is an important part of the Commonwealth's efforts to meet the 2018 reasonable progress goals for reducing regional haze established by the Commonwealth in consultation with the member states of MANE-VU and is also reasonably necessary to attain and maintain the PM2.5 NAAQS in this Commonwealth. The proposed rulemaking, if adopted as a final regulation, will be submitted to the EPA as a revision to the SIP.

F. Benefits, Costs and Compliance

Benefits

Implementation of the proposed control measure would benefit the health and welfare of the approximately 12 million human residents and numerous animals, and crops, vegetation and natural areas, of this Commonwealth by reducing the ambient levels of SO₂, resulting in reductions in regional haze and PM2.5. There are also important co-benefits of this proposed rulemaking. Emissions of NO_x, which contribute to unhealthy levels of PM2.5 and ground-level ozone, would also decrease with the use of low-sulfur content commercial fuel oil due to furnace and boiler

combustion efficiency improvements. Emissions of carbon dioxide, a greenhouse gas, should also be reduced since with improved combustion efficiency, overall commercial fuel oil consumption should decrease.

Commercial fuel oil users benefit, too. According to the U.S. Energy Information Administration (EIA), State Energy Profiles, approximately 26% of the households in this Commonwealth use No. 2 commercial fuel oil for space heat. Low-sulfur content commercial fuel oil has the potential to improve furnace and boiler combustion efficiency by reducing fouling rates of furnace and boiler heat exchangers and other components. Reduced boiler and furnace fouling rates translate directly into lower vacuum-cleaning costs for fuel oil companies and homeowners by extending the service intervals. For example, according to a NESCAUM study, using a median hourly service cost of \$72.50 per hour for vacuum-cleaning a furnace and changing No. 2 commercial fuel oil from a sulfur content of 2500 ppm to 500 ppm would save \$29,000 a year per 1000 homes, or \$29.00 annually per home in the United States. (See NESCAUM report: *Low Sulfur Heating Oil in the Northeast States: An Overview of Benefits, Costs and Implementation Issues*, December 2005, pages 3-2 and 3-3.) Further, the availability of low-sulfur content commercial fuel oil would enable the introduction of highly efficient advanced technology condensing furnaces. A lower sulfur content commercial fuel oil would also increase the number of clean fuel types available to consumers.

The commercial fuel oil industry also benefits. A requirement for lower sulfur content No. 2 commercial fuel oil would benefit distributors of commercial fuel oil by increasing their ability to compete with natural gas, a cleaner fuel than today's No. 2 commercial fuel oil. Another benefit is that consistency of No. 2 commercial fuel oil sulfur content limits with highway and nonroad, locomotive and marine (NRLM) transportation diesel sulfur content limits would help refinery owners and operators, distributors, carriers and owners and operators of commercial fuel oil and transportation diesel fuel terminals minimize the number of tanks and trucks needed. No. 2 commercial fuel oil could be combined with NRLM transportation diesel fuel in the same tanks and trucks. 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 NRLM transportation diesel fuels. The Federal final rule for *Control of Air Pollution from New Motor Vehicles: Heavy Duty Engines and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*, published on January 18, 2001, requires all refiners to produce 100% of their highway diesel fuel to meet the sulfur content limit of 15 ppm beginning June 1, 2010. See 66 FR 5002, p. 5067. The Federal final rule for *Control of Air Emissions from Nonroad Diesel Engines and Fuel*, published on June 29, 2004, requires the sulfur content limit for nonroad transportation diesel fuel be 15 ppm beginning June 1, 2010. See 69 FR 38958 at p. 39039. The sulfur content limit for locomotive and marine (except large ocean-going vessels) diesel fuel will be 15 ppm beginning June 1, 2012. See 69 FR p. 39039. Furthermore, since sulfur content limits for regulated commercial fuel oils would now be Commonwealth-wide rather than area-specific, compliance and recordkeeping would be simplified for the petroleum refining and distribution companies.

Compliance Costs

The proposed rulemaking would affect the owners and operators of refineries, distributors and carriers of commercial fuel oils; owners and operators of commercial fuel oil terminals; ICI boiler owners and operators; and anyone who uses commercial fuel oils in this Commonwealth.

There are five refineries in this Commonwealth, owned by four companies. The products of all five refineries would be affected by the proposed rulemaking. Owners and operators of refineries outside this Commonwealth would be indirectly affected if they supply distributors that sell commercial fuel oil in this Commonwealth. The Department believes that this sophisticated industry has the technical capacity for implementing the program because sulfur limits have been established in motor fuels for 30 years.

There are 120 fuel oil terminal operations operated by 38 different companies, and 737 distributors of petroleum products, in this Commonwealth. Not all of these operations handle commercial fuel oil. Major distributors in this Commonwealth also operate terminals. While the size of distributor operations ranges from large to small, members of the petroleum distribution industry as a whole have been regulated for many years. Existing systems to track the quantity and composition of fuel are of long standing for purposes of compliance with both environmental and tax regulations.

End-users of commercial fuel oil range from large industrial users to homeowners. There are approximately 1.32 million households in this Commonwealth that may use commercial fuel oil for residential heating (5.08 million households * 26% of households). The EIA State Energy Profile estimates that 26% of homes in this Commonwealth use commercial fuel oil for space heat.

Fuel combustion at many ICI sources is already regulated by the Department under its permit program; these sources would be required to comply with the proposed rulemaking, which retains (with modification) the equivalency provisions of the existing regulation as an alternative compliance mechanism. The equivalency provisions allow the use of equipment or a process to control emissions to the same level as would result from the use of a compliant commercial fuel oil. This choice would most likely only occur if the cost of control were less than the cost of the purchase of compliant commercial fuel oil.

Market forces and regulations for transportation-related diesel fuels in both the United States and internationally will be the major forces affecting this industry, since the use of commercial fuel oil for residential heating and ICI boilers is a very small portion of diesel fuel consumption. No. 2 commercial fuel oil will be identical in sulfur content level to nonroad transportation diesel fuel in 2012, if the proposed rulemaking compliance date of May 1, 2012, is implemented.

In a 2008 report entitled, "Northeast Heating Oil Assessment," the National Oilheat Research Alliance (NORA) estimated that there would be a 6.3 to 6.8 cents per gallon (cents/gal) incremental production cost for 500 ppm vs. 2500 ppm sulfur content home heating oil (No. 2 commercial fuel oil), including capital costs. Costs are estimated to be as much as 8.9 cents/gal for 15 ppm sulfur content vs. 2500 ppm. However, where refinery owners and operators have desulfurization capabilities, the incremental cost of producing 15 ppm sulfur vs. 2500 ppm home heating oil will be less than 5 cents/gal. Note that these are costs to the producers; prices to the ultimate consumer will be influenced by factors in addition to the cost of reducing the sulfur content in the fuel oil.

Furnace and boiler maintenance costs for consumers would be lower due to less fouling of their combustion units. According to NORA, although low-sulfur content commercial fuel oil may cost a

few cents per gallon more, savings on maintenance costs would help defray that impact. Decreased fouling improves efficiency of the combustion unit, which results in lower fuel usage.

Compliance Assistance Plan

The Department plans to educate and assist the public and regulated community in understanding the newly amended requirements and how to comply with them. This will be accomplished through the Department's ongoing compliance assistance program.

Paperwork Requirements

The proposed regulation would require that, beginning with the refinery owner or operator who sells or transfers commercial fuel oil and ending with the ultimate consumer, each time the physical custody of or title to a shipment of commercial fuel oil changes hands the transferor would be required to provide the transferee with an electronic or paper record of the transaction. Each affected person would be required to keep the records in electronic or paper format for 2 years, except those ultimate consumers located at a private residence. No recordkeeping or reporting would be required of ultimate consumers at private residences or apartment complexes and condominiums; all they need to do is buy and use compliant commercial fuel oil. The Department conferred with industry on normal industry practices and took those practices into account in crafting the paperwork requirements.

G. Pollution Prevention

The Federal Pollution Prevention Act of 1990 (42 USCA §§ 13101-13109) established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials, and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance.

This proposed rulemaking would prevent emissions of SO₂ and NO_x air pollutants by requiring a lower amount of sulfur in commercial fuel oil used in this Commonwealth, thereby reducing regional haze and ambient levels of PM_{2.5} in this Commonwealth and throughout the Northeast. The proposed rulemaking would not require add-on controls, although existing provisions allow the use of noncompliant fuel if the emissions are equivalent to those obtained with compliant commercial fuel oil.

H. Sunset Review

This regulation will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulation effectively fulfills the goals for which it was intended.

I. Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on September 13, 2010, the Department submitted a copy of these proposed amendments to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the House and Senate Environmental Resources and Energy Committees. In addition to submitting the proposed amendments, the Department has provided IRRC and the Committees with a copy of a detailed Regulatory Analysis Form prepared by the Department. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey any comments, recommendations or objections to the proposed rulemaking within 30 days following the close of the public comment period. The comments, recommendations or objections shall specify the regulatory review criteria that have not been met. The Regulatory Review Act specifies detailed procedures for review of these issues by the Department, the General Assembly and the Governor prior to final publication of the regulations.

J. Public Comments

Written Comments - Interested persons are invited to submit comments, suggestions or objections regarding the proposed rulemaking to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477 (express mail: Rachel Carson State Office Building, 16th Floor, 400 Market Street, Harrisburg, PA 17101-2301). Comments submitted by facsimile will not be accepted. Comments, suggestions or objections must be received by the Board on or before November 29, 2010. Interested persons may also submit a summary of their comments to the Board. The summary may not exceed one page in length and must also be received by the Board on or before November 29, 2010. The one-page summary will be provided to each member of the Board in the agenda packet distributed prior to the meeting at which the final regulation will be considered.

Electronic Comments - Comments may be submitted electronically to the Board at RegComments@state.pa.us and must also be received by the Board on or before November 29, 2010. A subject heading of the proposal and a return name and address must be included in each transmission. If an acknowledgement of electronic comments is not received by the sender within 2 working days, the comments should be retransmitted to the Board to ensure receipt.

K. Public Hearings

The Environmental Quality Board will hold public hearings in Harrisburg, Cranberry Township and Norristown for the purpose of accepting comments on this proposal. The hearings will be held at 7:00 p.m as follows:

October 26, 2010
7:00 p.m.

Department of Environmental Protection
Rachel Carson State Office Building
Conference Room 105
400 Market Street
Harrisburg, PA 17101

October 27, 2010
7:00 p.m.

Cranberry Township Municipal Building
2525 Rochester Road
Cranberry Township, PA 16066-6499

October 28, 2010
7:00 p.m.

Department of Environmental Protection
Southeast Regional Office
Delaware Conference Room
2 East Main Street
Norristown, PA 19401

Persons wishing to present testimony at a hearing are requested to contact the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526, at least 1 week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to 10 minutes for each witness. Witnesses are requested to submit three written copies of their oral testimony to the hearing chairperson at the hearing. Organizations are limited to designating one witness to present testimony on their behalf at each hearing.

Persons in need of accommodations as provided for in the Americans With Disabilities Act of 1990 should contact the Board at (717) 787-4526 or through the Pennsylvania AT&T Relay Service at (800) 654-5984 (TDD users) or (800) 654-5988 (voice users) to discuss how the Board may accommodate their needs.

JOHN HANGER
Chairperson

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUBPART C. PROTECTION OF NATURAL RESOURCES

ARTICLE III. AIR RESOURCES

CHAPTER 121. GENERAL PROVISIONS

§ 121.1. Definitions.

The definitions in section 3 of the act (35 P. S. § 4003) apply to this article. In addition, the following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

ASTM—ASTM International, 100 Barr Harbor Drive, P. O. Box C700, West Conshohocken, PA 19428-2959 USA, or on the World Wide Web at www.astm.org.

* * * * *

Carrier—A distributor who does not take title to or otherwise have ownership of the commercial fuel oil or gasoline, and does not alter either the quality or quantity of the commercial fuel oil or gasoline.

* * * * *

Commercial fuel oil—[Commercial fuel oil and mixtures] A fuel oil specifically produced, manufactured for sale and intended for use in fuel oil-burning equipment. A mixture of commercial fuel [oils] oil with [other fuels] noncommercial fuel where greater than 50% of the heat content is derived from the commercial fuel oil portion is considered a commercial fuel oil.

* * * * *

Distributor—

(i) A person who transports, stores or causes the transportation or storage of commercial fuel oil or gasoline at any point between a refinery, [an oxygenate] a blending facility or terminal and a retail outlet [or] , wholesale purchaser-consumer's facility or ultimate consumer.

(ii) The term includes a refinery, [an oxygenate] a blending facility or a terminal.

* * * * *

Noncommercial [fuels] fuel—A gaseous or liquid fuel generated as a byproduct or waste product which is not specifically produced and manufactured for sale. A mixture of a noncommercial **fuel** and a commercial fuel oil where at least 50% of the heat content is derived from the noncommercial fuel portion is considered a noncommercial fuel.

* * * * *

Retail outlet—An establishment at which **commercial fuel oil or** gasoline is sold or offered for sale to the ultimate consumer for use in a **combustion unit or** motor **[vehicles] vehicle,** respectively.

* * * * *

Terminal—

(i) A facility which is capable of receiving **commercial fuel oil or** gasoline in bulk, that is, by pipeline, barge, ship or other transport, and at which **commercial fuel oil or** gasoline is sold or transferred into trucks for transportation to retail outlets **[or]**, wholesale purchaser-consumer's facilities **or ultimate consumers.**

(ii) The term includes bulk gasoline terminals and bulk gasoline plants. **[The]**

(iii) For purposes of Chapter 126, Subchapter A (relating to oxygenate content), the terminal does not have to be physically located in the control area.

* * * * *

Transferee—

(i) A person who is the recipient of a sale or transfer.

(ii) The term includes the following:

(A) Terminal owner or operator.

(B) Carrier.

(C) Distributor.

(D) Retail outlet owner or operator.

(E) Ultimate consumer.

* * * * *

Transferor—

(i) A person who initiates a sale or transfer.

(ii) The term includes the following:

(A) Refinery owner or operator.

(B) Terminal owner or operator.

(C) Carrier.

(D) Distributor.

(E) Retail outlet owner or operator.

* * * * *

*Ultimate consumer—*With respect to a commercial fuel oil transfer or purchase, the last person, facility owner or operator or entity who in good faith receives the commercial fuel oil for the purpose of using it in a combustion unit or for purposes other than resale.

CHAPTER 123. STANDARDS FOR CONTAMINANTS

SULFUR COMPOUND EMISSIONS

§ 123.22. Combustion units.

(a) *Nonair basin areas.* Combustion units in nonair basin areas shall conform with the following:

(1) *General provision.* [No] A person may **not** permit the emission into the outdoor atmosphere of sulfur oxides, expressed as SO₂, from a combustion unit in excess of the rate of 4 pounds per million Btu of heat input over [any] a 1-hour period, except as provided [for] in paragraph (4).

(2) *Commercial fuel oil.* [No]

(i) Except as specified in subparagraphs (ii) and (iii), a person may **not** offer for sale, deliver for use, exchange in trade or permit the use of commercial fuel oil in nonair basin areas [which] **on or after the applicable compliance date listed in this subparagraph, if the commercial fuel oil** contains sulfur in excess of the applicable **limit or** percentage by weight set forth in the following table:

[Grades Commercial Fuel Oil	% Sulfur
No. 2 and Lighter (viscosity less than or equal to 5.820cSt)	0.5
No. 4, No. 5, No. 6, and heavier (viscosity greater than 5.82cSt)	2.8]

Compliance Date	May 1, 2012	May 1, 2012
Commercial Fuel oil		
No. 2 and lighter (viscosity less than or equal to 5.820cSt)	15 ppm	
No. 4 oil (viscosity greater than 5.820cSt)		0.25% sulfur
No. 5, No. 6 & heavier oil (viscosity greater than 5.820cSt)		0.5% sulfur

(ii) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to the applicable compliance date in subparagraph (i), which met the applicable maximum sulfur content at the time it was stored, may be used in this Commonwealth after the applicable compliance date in subparagraph (i).

(iii) The Department, with the written concurrence of the Administrator of the EPA, may temporarily suspend or increase the applicable limit or percentage by weight of sulfur content of a commercial fuel oil set forth in the table in subparagraph (i) if both of the following occur:

(A) The Department determines that an insufficient quantity of compliant commercial fuel oil is reasonably available in a nonair basin area.

(B) The Department receives a written request for a suspension or increase on the basis that compliant commercial fuel oil is not reasonably available. The request must include both of the following:

(I) The reason compliant commercial fuel oil is not reasonably available.

(II) The duration of time for which the suspension or increase is requested and the justification for the requested duration.

(iv) The Department will limit a suspension or increase in the applicable limit granted under subparagraph (iii) to the shortest duration in which adequate supplies of compliant commercial fuel oil can be made reasonably available.

(v) The sulfur content limit for No. 2 and lighter commercial fuel oil may not exceed 500 ppm if a temporary increase in the applicable limit of sulfur content is granted under subparagraph (iii).

(3) *Equivalency provision.* Paragraph (2) [may] does not apply to [those persons] a person who uses equipment or a process, or [installations] to the owner or operator of an installation where equipment or [processes are] a process is used, to reduce the sulfur emissions from the burning of [fuels] a fuel with a higher sulfur content than that specified in paragraph (2). The emissions may not exceed those which would result from the use of [the fuels] commercial fuel oil that meets the applicable limit or percentage by weight specified in paragraph (2).

* * * * *

(b) *Erie; Harrisburg; York; Lancaster; and Scranton, Wilkes-Barre air basins.* Combustion units in these subject air basins shall conform with the following:

(1) *General provision.* [No] A person may not permit the emission into the outdoor atmosphere of sulfur oxides, expressed as SO₂, from a combustion unit in excess of the rate of 4 pounds per million Btu of heat input over a 1-hour period, except as provided [for] in paragraph (4).

(2) *Commercial fuel oil.* [No]

(i) Except as specified in subparagraphs (ii) and (iii), a person may not offer for sale, deliver for use, exchange in trade or permit the use of commercial fuel oil in the subject air basins [which contain] on or after the applicable compliance date listed in this subparagraph, if the commercial fuel oil contains sulfur in excess of the applicable limit or percentage by weight set forth in the following table:

[Grades Commercial Fuel Oil	Effective August 1, 1979 % Sulfur
No. 2 and Lighter (viscosity less than or equal to 5.820cSt)	0.3
No. 4, No. 5, No. 6, and heavier (viscosity greater than 5.82cSt)	2.8]

<u>Compliance Date</u>	<u>May 1, 2012</u>	<u>May 1, 2012</u>
<u>Commercial Fuel oil</u>		
<u>No. 2 and lighter (viscosity less than or equal to 5.820cSt)</u>	<u>15 ppm</u>	
<u>No. 4 oil (viscosity greater than 5.820cSt)</u>		<u>0.25% sulfur</u>
<u>No. 5, No. 6 & heavier oil (viscosity greater than 5.820cSt)</u>		<u>0.5% sulfur</u>

(ii) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to the applicable compliance date in subparagraph (i), which met the applicable maximum sulfur content at the time it was stored, may be used in this Commonwealth after the applicable compliance date in subparagraph (i).

(iii) The Department, with the written concurrence of the Administrator of the EPA, may temporarily suspend or increase the applicable limit or percentage by weight of sulfur content of a commercial fuel oil set forth in the table in subparagraph (i) if both of the following occur:

(A) The Department determines that an insufficient quantity of compliant commercial fuel oil is reasonably available in the subject air basins.

(B) The Department receives a written request for a suspension or increase on the basis that compliant commercial fuel oil is not reasonably available. The request must include both of the following:

(I) The reason compliant commercial fuel oil is not reasonably available.

(II) The duration of time for which the suspension or increase is requested and the justification for the requested duration.

(iv) The Department will limit a suspension or increase in the applicable limit granted under subparagraph (iii) to the shortest duration in which adequate supplies of compliant commercial fuel oil can be made reasonably available.

(v) The sulfur content limit for No. 2 and lighter commercial fuel oil may not exceed 500 ppm if a temporary increase in the applicable limit of sulfur content is granted under subparagraph (iii).

(3) *Equivalency provision.* Paragraph (2) does not apply to [those persons] a person who uses equipment or a process, or [installations] to the owner or operator of an installation where equipment or [processes are] a process is used, to reduce the sulfur emissions from the burning of [fuels] a fuel with a higher sulfur content than that specified in paragraph (2). The emissions may not exceed those which would result from the use of [the fuels] commercial fuel oil that meets the applicable limit or percentage by weight specified in paragraph (2).

* * * * *

(c) *Allentown, Bethlehem, Easton, Reading, Upper Beaver Valley and Johnstown air basins.* Combustion units in these subject air basins shall conform with the following:

(1) *General provision.* [No] A person may not permit the emission into the outdoor atmosphere of sulfur oxides, expressed as SO₂, from [any] a combustion unit [, at any time,] in excess of the rate of 3 pounds per million Btu of heat input over [any] a 1-hour period, except as provided [for] in paragraph (4).

(2) *Commercial fuel oil.* [No]

(i) Except as specified in subparagraphs (ii) and (iii), a person may [, at any time,] not offer for sale, deliver for use, exchange in trade or permit the use of commercial fuel oil in the subject air basins on or after the [effective dates] applicable compliance date listed in this [paragraph which] subparagraph, if the commercial fuel oil contains sulfur in excess of the applicable limit or percentage by weight set forth in the following table:

[Grades Commercial Fuel Oil	Effective August 1, 1979 % Sulfur
No. 2 and Lighter (viscosity less than or equal to 5.82cSt)	0.3
No. 4, No. 5, No. 6 and heavier (viscosity greater than 5.82cSt)	2.0]

<u>Compliance Date</u>	<u>May 1, 2012</u>	<u>May 1, 2012</u>
<u>Commercial Fuel oil</u>		
<u>No. 2 and lighter (viscosity less than or equal to 5.820cSt)</u>	<u>15 ppm</u>	
<u>No. 4 oil (viscosity greater than 5.820cSt)</u>		<u>0.25% sulfur</u>
<u>No. 5, No. 6 & heavier oil (viscosity greater than 5.820cSt)</u>		<u>0.5% sulfur</u>

(ii) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to the applicable compliance date in subparagraph (i), which met the applicable maximum sulfur content at the time it was stored, may be used in this Commonwealth after the applicable compliance date in subparagraph (i).

(iii) The Department, with the written concurrence of the Administrator of the EPA, may temporarily suspend or increase the applicable limit or percentage by weight of sulfur content of a commercial fuel oil set forth in the table in subparagraph (i) if both of the following occur:

(A) The Department determines that an insufficient quantity of compliant commercial fuel oil is reasonably available in the subject air basins.

(B) The Department receives a written request for a suspension or increase on the basis that compliant commercial fuel oil is not reasonably available. The request must include both of the following:

(I) The reason compliant commercial fuel oil is not reasonably available.

(II) The duration of time for which the suspension or increase is requested and the justification for the requested duration.

(iv) The Department will limit a suspension or increase in the applicable limit granted under subparagraph (iii) to the shortest duration in which adequate supplies of compliant commercial fuel oil can be made reasonably available.

(v) The sulfur content limit for No. 2 and lighter commercial fuel oil may not exceed 500 ppm if a temporary increase in the applicable limit of sulfur content is granted under subparagraph (iii).

(3) *Equivalency provision.* Paragraph (2) does not apply to [those persons] a person who uses equipment or a process, or [installations] to the owner or operator of an installation where equipment or [processes are] a process is used, to reduce the sulfur emissions from the burning of [fuels] a fuel with a higher sulfur content than that specified in paragraph (2) [**however, the].** The emissions may not exceed those which would result from the use of [the fuels] commercial fuel oil that meets the applicable limit or percentage by weight specified in paragraph (2).

* * * * *

(d) *Allegheny County, Lower Beaver Valley, and Monongahela Valley air basins.* [No person may permit the emission into the outdoor atmosphere of sulfur oxides, expressed as SO₂, from any combustion unit in excess of any of] Combustion units in these subject air basins shall conform with the following:

(1) General provision. A person may not permit the emission into the outdoor atmosphere of sulfur oxides, expressed as SO₂, from a combustion unit in excess of one or more of the following:

(i) The rate of one pound per million Btu of heat input, when the heat input to the combustion unit in millions of Btus per hour is greater than 2.5 but less than 50.

[(2)] (ii) The rate determined by the following formula: $A = 1.7E^{-0.14}$, where: A = Allowable emissions in pounds per million Btu of heat input, and E = Heat input to the combustion unit in millions of Btus per hours when E is equal to or greater than 50 but less than 2,000.

[(3)] (iii) The rate of 0.6 pounds per million Btu of heat input when the heat input to the combustion unit in millions of Btus per hour is equal to or greater than 2,000.

(2) Commercial fuel oil.

(i) Except as specified in subparagraphs (ii) and (iii), a person may not offer for sale, deliver for use, exchange in trade or permit the use of commercial fuel oil in the subject air basins on or after the applicable compliance date listed in this subparagraph, if the

commercial fuel oil contains sulfur in excess of the applicable limit or percentage by weight set forth in the following table:

<u>Compliance Date</u>	<u>May 1, 2012</u>	<u>May 1, 2012</u>
<u>Commercial Fuel oil</u>		
<u>No. 2 and lighter (viscosity less than or equal to 5.820cSt)</u>	<u>15 ppm</u>	
<u>No. 4 oil (viscosity greater than 5.820cSt)</u>		<u>0.25% sulfur</u>
<u>No. 5, No. 6 & heavier oil (viscosity greater than 5.820cSt)</u>		<u>0.5% sulfur</u>

(ii) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to the applicable compliance date in subparagraph (i), which met the applicable maximum sulfur content at the time it was stored, may be used in this Commonwealth after the applicable compliance date in subparagraph (i).

(iii) The Department, with the written concurrence of the Administrator of the EPA, may temporarily suspend or increase the applicable limit or percentage by weight of sulfur content of a commercial fuel oil set forth in the table in subparagraph (i) if both of the following occur:

(A) The Department determines that an insufficient quantity of compliant commercial fuel oil is reasonably available in the subject air basins.

(B) The Department receives a written request for a suspension or increase on the basis that compliant commercial fuel oil is not reasonably available. The request must include both of the following:

(I) The reason compliant commercial fuel oil is not reasonably available.

(II) The duration of time for which the suspension or increase is requested and the justification for the requested duration.

(iv) The Department will limit a suspension or increase in the applicable limit granted under subparagraph (iii) to the shortest duration in which adequate supplies of compliant commercial fuel oil can be made reasonably available.

(v) The sulfur content limit for No. 2 and lighter commercial fuel oil may not exceed 500 ppm if a temporary increase in the applicable limit of sulfur content is granted under subparagraph (iii).

(3) *Equivalency provision.* Paragraph (2) does not apply to a person who uses equipment or a process, or to the owner or operator of an installation where equipment or a process is used, to reduce the sulfur emissions from the burning of a fuel with a higher sulfur content than that specified in paragraph (2). The emissions may not exceed those which would

result from the use of commercial fuel oil that meets the applicable limit or percentage by weight specified in paragraph (2).

(e) *Southeast Pennsylvania air basin.* Combustion units in the Southeast Pennsylvania air basin shall conform with the following:

(1) *General provision.* [No] A person may **not** permit the emission into the outdoor atmosphere of sulfur oxides, expressed as [SO2] **SO₂**, from [any] a combustion unit except as provided [for] in paragraph (3) or (5), in excess of the applicable rate in pounds per million Btu of heat input specified in the following table:

<i>Rated Capacity of Units in 10⁶ Btus per hour</i>	<i>Inner Zone</i>	<i>Outer Zone</i>
less than 250	1.0	1.2
greater than or equal to 250	0.6	1.2

(2) *Commercial fuel oil.* [No]

(i) Except as specified in subparagraphs (ii) and (iii), a person may [, at any time,] not offer for sale, deliver [or] for use, exchange in trade or permit the use of commercial fuel oil [for use] in a combustion [units] unit in the Southeast Pennsylvania air basin [which] on or after the applicable compliance date listed in this subparagraph, if the commercial fuel oil contains sulfur in excess of the applicable [percentages] limit or percentage by weight set forth in the following table:

[Grades of Commercial Fuel Oil	Inner Zone	Outer Zone
No. 2 and lighter (viscosity less than or equal to 5.82cSt)	0.2%	0.3%
No. 4, No. 5, No. 6 and Heavier (viscosity greater than 5.82cSt)	0.5%	1.0%]

<u>Compliance Date</u>	<u>May 1, 2012</u>	<u>May 1, 2012</u>
<u>Commercial Fuel oil</u>		
<u>No. 2 and lighter (viscosity less than or equal to 5.820cSt)</u>	<u>15 ppm</u>	
<u>No. 4 oil (viscosity greater than 5.820cSt)</u>		<u>0.25% sulfur</u>
<u>No. 5, No. 6 & heavier oil (viscosity greater than 5.820cSt)</u>		<u>0.5% sulfur</u>

(ii) Commercial fuel oil that was stored in this Commonwealth by the ultimate consumer prior to the applicable compliance date in subparagraph (i), which met the applicable maximum sulfur content at the time it was stored, may be used in this Commonwealth after the applicable compliance date in subparagraph (i).

(iii) The Department, with the written concurrence of the Administrator of the EPA, may temporarily suspend or increase the applicable limit or percentage by weight of sulfur content of a commercial fuel oil set forth in the table in subparagraph (i) if both of the following occur:

(A) The Department determines that an insufficient quantity of compliant commercial fuel oil is reasonably available in the subject air basin.

(B) The Department receives a written request for a suspension or increase on the basis that compliant commercial fuel oil is not reasonably available. The request must include both of the following:

(I) The reason compliant commercial fuel oil is not reasonably available.

(II) The duration of time for which the suspension or increase is requested and the justification for the requested duration.

(iv) The Department will limit a suspension or increase in the applicable limit granted under subparagraph (iii) to the shortest duration in which adequate supplies of compliant commercial fuel oil can be made reasonably available.

(v) The sulfur content limit for No. 2 and lighter commercial fuel oil may not exceed 500 ppm if a temporary increase in the applicable limit of sulfur content is granted under subparagraph (iii).

(3) *Noncommercial fuels.* [No] A person may not permit the emission into the outdoor atmosphere of sulfur oxides, expressed as SO₂, from [any] a combustion unit using a noncommercial fuel [at any time] , in excess of the rate of 0.6 pounds per million Btu of heat input in the inner zone or 1.2 pounds per million Btu of heat input in the outer zone.

(4) *Equivalency provision.* Paragraph (2) does not apply to [those persons] a person who uses equipment or a process, or [installations] to the owner or operator of an installation

where equipment or [processes are] a process is used, to reduce the sulfur emissions from the burning of [fuels] a fuel with a higher sulfur content than that specified in paragraph (2)]; however, the]. The emissions may not exceed those which would result from the use of [the fuels] commercial fuel oil that meets the applicable limit or percentage by weight specified in paragraph (2).

* * * * *

(f) Sampling and testing.

(1) For the purpose of determining compliance with the requirements of this section, the sulfur content of commercial fuel oil shall be determined by one of the following:

(i) In accordance with the sample collection, test methods and procedures specified under § 139.16 (relating to sulfur in fuel oil).

(ii) Other methods developed or approved by the Department, the Administrator of the EPA or both.

(2) A refinery owner or operator who produces commercial fuel oil intended for use or used in this Commonwealth on or after the applicable compliance date in paragraphs (a)(2), (b)(2), (c)(2), (d)(2) and (e)(2), is required to sample, test and calculate the sulfur content of each batch of the commercial fuel oil as specified in paragraph (1).

(3) A terminal owner or operator shall develop and implement written procedures, including procedures for commercial fuel oil sampling and testing as specified in paragraph (1). These procedures shall be made available to the Department upon request.

(g) Recordkeeping and reporting.

(1) Beginning with the refinery owner or operator who sells or transfers commercial fuel oil in this Commonwealth and ending with the ultimate consumer, on or after the applicable compliance date specified in paragraphs (a)(2), (b)(2), (c)(2), (d)(2) and (e)(2), each time the physical custody of, or title to, a shipment of commercial fuel oil changes hands, the transferor shall provide to the transferee an electronic or paper record described in this paragraph. This record shall legibly and conspicuously contain the following information:

(i) The date of the sale or transfer.

(ii) The name and address of the transferor.

(iii) The name and address of the transferee.

(iv) The volume of commercial fuel oil being sold or transferred.

(v) The sulfur content of the commercial fuel oil by limit or weight percent on a per-gallon basis determined using the sampling and testing methods specified in subsection (f).

(vi) The location of the commercial fuel oil at the time of transfer.

(2) The refinery owner or operator shall do both of the following:

(i) Maintain in electronic or paper format, the records developed under paragraph (f)(2) to determine the sulfur content of each batch of the commercial fuel oil.

(ii) Provide electronic or written copies of the records developed under paragraph (f)(2) of the sulfur content of each batch of the commercial fuel oil to the Department upon request.

(3) The terminal owner or operator shall do both of the following:

(i) Maintain in electronic or paper format, the records developed under paragraph (f)(3) to determine the sulfur content of the commercial fuel oil.

(ii) Provide electronic or written copies of the records of the sulfur content of the commercial fuel oil to the Department upon request.

(4) A person subject to this section shall do both of the following:

(i) Maintain the applicable record or records required under paragraphs (1)-(3) in electronic or paper format for 2 years.

(ii) Provide an electronic or written copy of the applicable record to the Department upon request.

(5) The ultimate consumer shall maintain in electronic or paper format the record containing the information listed in paragraph (1), except in either of the following situations:

(i) The transfer or use of the commercial fuel oil occurs at a private residence.

(ii) The ultimate consumer is an owner of an apartment or condominium building housing private residents and the transfer or use of the commercial fuel oil occurs for use at the building.

CHAPTER 139. SAMPLING AND TESTING

GENERAL

§ 139.4. References.

The references referred to in this chapter are as follows:

* * * * *

(10) [*Standard Method of Sampling Petroleum and Petroleum Products*, American Society for Testing Materials, D 270-80, 1916 Race Street, Philadelphia, Pennsylvania 19103] ASTM D 4057, Practice for Manual Sampling of Petroleum and Petroleum Products, including updates and revisions.

(11) [*Standard Method of Test for Kinematic Viscosity of Transparent and Opaque Liquids (and the calculation of Dynamic Viscosity)*, American Society for Testing Materials, D 445-79, 1916 Race Street, Philadelphia, Pennsylvania 19103] ASTM D 445, Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity), including updates and revisions.

(12) [*Standard Method of Test for Sulfur in Petroleum Products (Lamp Method)*, American Society for Testing Materials, D 1266-80, 1916 Race Street, Philadelphia, Pennsylvania 19103] ASTM D 1266, Test Methods for Sulfur in Petroleum Products: Lamp Method, including updates and revisions.

(13) [*Standard Method of Test for Sulfur in Petroleum Products by the Bomb Method*, American Society for Testing Materials, D 129-78, 1916 Race Street, Philadelphia, Pennsylvania 19103] ASTM D 129, Test Methods for Sulfur in Petroleum Products: General Bomb Method, including updates and revisions.

(14) [*Standard Method of Test for Sulfur in Petroleum Products (High Temperature Method)*, American Society for Testing Materials, D 1552-79, 1916 Race Street, Philadelphia, Pennsylvania 19103] ASTM D 1552, Test Methods for Sulfur in Petroleum Products: High-Temperature Method, including updates and revisions.

(15) [*Standard Method of Test for Sulfur in Petroleum Products (X-Ray Spectrographic Method)*, American Society for Testing Materials, D 2622-77, 1916 Race Street, Philadelphia, Pennsylvania 19103] ASTM D 2622, Test Methods for Sulfur in Petroleum Products by X-Ray Spectrometry, including updates and revisions.

* * * * *

(20) ASTM D 4294, Test Method for Sulfur in Petroleum and Petroleum Products by Energy Dispersive X-ray Fluorescence Spectrometry, including updates and revisions.

(21) ASTM D 4177, Practice for Automatic Sampling of Petroleum and Petroleum Products, including updates and revisions.

CHAPTER 139. SAMPLING AND TESTING

STATIONARY SOURCES

§ 139.16. Sulfur in fuel oil.

The following are applicable to tests for the analysis of commercial fuel oil:

(1) The fuel oil sample for chemical analysis shall be collected in a manner that provides a representative sample. Upon the request of a Department official, the person responsible for the operation of the source shall collect the sample employing the procedures and equipment specified in § 139.4(10) or (21) (relating to references).

(2) Test methods and procedures for the determination of viscosity shall be that specified in § 139.4(11). The viscosity shall be determined at 100°F.

(3) Tests methods and procedures for the determination of sulfur shall be those specified in § 139.4(12)—(15) and (20).

(4) Results shall be reported in accordance with the units specified in § 123.22 (relating to combustion units).



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

POLICY OFFICE

September 13, 2010

Mr. Kim Kaufman, Executive Director
Independent Regulatory Review Commission
14th Floor
333 Market Street
Harrisburg, PA 17120

Re: Proposed Rulemaking – Commercial Fuel Oil Sulfur Limits for Combustion Units (#7-462)

Dear Mr. Kaufman:

Pursuant to Section 5(a) of the Regulatory Review Act, please find enclosed a copy of a proposed regulation for review and comment by the Independent Regulatory Review Commission. The proposal is scheduled for publication in the *Pennsylvania Bulletin* on September 25, 2010, with a 60-day public comment period and three public hearings scheduled in Cranberry Township, Harrisburg, and Norristown, respectively. The Environmental Quality Board (EQB) adopted this proposal on July 13, 2010.

The purpose of the proposed rulemaking is to amend 25 *Pa Code* Chapter 123 to lower the allowable sulfur content of commercial fuel oil used in oil-burning combustion units in this Commonwealth and to replace the existing area-specific sulfur content limits of commercial fuel oils with a statewide sulfur limit. Combustion of sulfur-containing commercial fuel oils releases sulfur dioxide (SO₂) emissions into the atmosphere, which contributes to the formation of regional haze and fine particulate matter (PM_{2.5}), both of which are serious public welfare and human health threats. The use of lower sulfur-content commercial fuel oil will not only reduce SO₂ emissions but will also improve furnace and boiler combustion efficiency, which will lead to a reduction in nitrogen oxides emissions, which contribute to unhealthy levels of PM_{2.5} and ground-level ozone and carbon dioxide. The proposed control measures in the rulemaking are an important part of the Commonwealth's efforts to meet the 2018 reasonable progress goals for reducing regional haze established by the Commonwealth in consultation with the member states of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) and is also reasonably necessary to attain and maintain the PM_{2.5} National Ambient Air Quality Standards (NAAQS) in this Commonwealth.

The proposed rulemaking adds provisions for sampling and testing, recordkeeping and reporting and would affect the owner or operator of a refinery, pipeline, terminal, carrier, distributor or retail outlet that produces, conveys or stores commercial fuel oil, as well as the ultimate consumer that uses the commercial fuel oil. The proposed amendments would reduce the sulfur limit in commercial fuel oil to 15 ppm for Number (No.) 2 and lighter commercial fuel oils on and after May 1, 2011; and to less than 0.25% sulfur for No. 4 commercial fuel oil and less than 0.5%



sulfur for Nos. 5, 6 and heavier commercial fuel oils on and after July 1, 2012. The Northeast States for Coordinated Air Use Management estimates the annual SO₂ emission reduction benefits in Pennsylvania from this rulemaking would be approximately 29,000 tons. If adopted as a final-form rulemaking, the regulation will be submitted to Environmental Protection Agency as a revision to the State Implementation Plan (SIP).

Stakeholder consultation occurred at various levels of development of this rulemaking. The Department of Environmental Protection (Department) along with the MANE-VU consulted with stakeholders during the initial development of the regional strategy, including meeting with oil distributors and terminal operators in December 2008 and with refinery owners and operators in February 2009. The Department also met with the Pennsylvania Associated Petroleum Industries of Pennsylvania, representatives of the American Petroleum Institute and their member companies, and with individual refiners and distributors such as Sunoco, United Refining Company and the American Refining Group, the Pennsylvania Petroleum Marketers and Convenience Store Association, and the National Oilheat Research Alliance. The Department also consulted with owners and operators of terminals and retail outlets to get background information and input in drafting the proposed regulation. In addition, the Department discussed the rulemaking with the Air Quality Technical Advisory Committee who on February 18, 2010, voted 12-0 to concur with the Department's recommendation to present the proposed amendments, with suggested revisions, to the Board for consideration as a proposed rulemaking. In addition, the proposed rulemaking was discussed with the Citizens Advisory Council (CAC) Air Committee at its February 16, 2010, meeting. The CAC Air Committee had no objections and the full CAC concurred with the proposed rulemaking on March 16, 2010. The proposed amendments were also discussed with the Agricultural Advisory Board on April 21, 2010, and the Small Business Compliance Advisory Committee on April 28, 2010.

The Department will provide the Commission with the assistance required to facilitate a thorough review of this proposal. Section 5(d) of the Regulatory Review Act provides that the Commission may, within 30 days of the close of the comment period, convey its comments, recommendations and objections to the proposed regulation. The Department will consider any comments, recommendations or suggestions made by the Commission, as well as the Committees and public commentators, prior to final adoption of these rulemakings.

Please contact me at the number above if you have any questions or need additional information.

Sincerely,



Michele L. Tate
Regulatory Coordinator

Enclosures





TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO
THE REGULATORY REVIEW ACT

RECEIVED
IRRC

2010 SEP 13 P 3:01

I.D. NUMBER: 7-462
SUBJECT: Commercial Fuel Oil Sulfur Limits For Combustion Units
AGENCY: DEPARTMENT OF ENVIRONMENTAL PROTECTION

TYPE OF REGULATION

- Proposed Regulation
- Final Regulation
- Final Regulation with Notice of Proposed Rulemaking Omitted
- 120-day Emergency Certification of the Attorney General
- 120-day Emergency Certification of the Governor
- Delivery of Tolloed Regulation
 - a. With Revisions
 - b. Without Revisions

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
9-13-10	<u>D Newton</u>	Majority Chair, HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY Rep. Camille George
9-13-10	<u>M. White</u>	Minority Chair, HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
9-13-10	<u>D. Castelli</u>	Majority Chair, SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY Senator Mary Jo White
9-13-10	<u>R. Fox</u>	Minority Chair, SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
9/13/10	<u>St. Belmont</u>	INDEPENDENT REGULATORY REVIEW COMMISSION
_____	_____	ATTORNEY GENERAL (for Final Omitted only)
9/13/10	<u>n. Lattin</u>	LEGISLATIVE REFERENCE BUREAU (for Proposed only)

