

Revised Express Terms

6 NYCRR Subpart 227-1, Stationary Combustion Installations

Existing 6 NYCRR Subpart 227-1, Stationary Combustion Installations is repealed. A new Subpart 227-1, Stationary Combustion Installations is added as follows:

Section 227-1.1 Definitions. The definitions within Part 200, Part 201, and Subpart 227-2 of this Title apply to this Subpart.

Section 227-1.2 Applicability and Prohibitions.

(a) This Subpart applies to stationary combustion installations except for those stationary combustion installations that are subject to new source performance standards under 40 Code of Federal Regulation (CFR) 60 and/or national emissions standards for hazardous air pollutants under 40 CFR 63, where the particulate matter standards established in the above regulations are equal to or more stringent than the particulate matter emission standards established in this Subpart.

(b) No owner or operator shall construct, install, or modify, or cause to be constructed, installed, or modified, any hand fed stationary combustion installation designed to fire bituminous coal.

Section 227-1.3 Particulate emissions.

(a) Upon promulgation of this regulation, no owner or operator of an existing stationary combustion installation which fires oil or oil in combination with other liquid or gaseous fuels shall be allowed to emit particulate matter in excess of 0.10 pound per million Btu heat input. Within four years of the promulgation of this regulation, no owner or operator of an existing stationary combustion installation firing solid fuel shall be allowed to emit particulate matter in excess of 0.10 pound per million Btu heat input. Upon the commencement

of operation, no owner or operator of a new stationary combustion installation shall be allowed to emit particulate matter in excess of 0.10 pound per million Btu heat input. The above emission limits apply to stationary combustion installations with a maximum heat input capacity equal to or exceeding:

(1) 1 million Btu per hour firing any amount of solid fuel; or

(2) 50 million Btu per hour firing oil or oil in combination with other liquid or gaseous fuels.

(b) When two or more stationary combustion installations are connected to a common air cleaning device and/or stack, the total heat input of all the connected emission sources shall be the heat input for the purpose of determining the applicability of subdivision (a) of this Section, unless there is a limit in the facility's permit that prohibits operation of the connected emission sources below the specified heat inputs in subdivision (a) of this Section.

(c) All stationary combustion installations subject to the requirements of this subpart shall perform an annual tune-up of their equipment.

Section 227-1.4 Opacity.

(a) No owner or operator shall operate a stationary combustion installation which exhibits greater than 20 percent opacity (six-minute average), except for one six-minute period per hour of not more than 27 percent opacity.

(b) Compliance with the opacity standard may be determined by:

(1) conducting observations in accordance with 40 CFR 60 Appendix A Method 9 (See Table 1, section 200.9 of this Title);

(2) evaluating Continuous Opacity Monitoring System (COMS) records and reports as per Procedure 3 – Quality Assurance Requirements for Continuous Opacity Monitoring Systems at Stationary Sources of 40 CFR Part 60 Appendix F, Procedure – 3 (See Table 1, section 200.9 of this Title); and/or

(3) considering any other credible evidence.

Section 227-1.5 Compliance testing, monitoring, and recordkeeping.

(a) The owner or operator of a new solid fuel fired stationary combustion installation must conduct an initial compliance test within 180 days of the commencement of operation of the new stationary combustion installation to determine compliance with the applicable particulate matter emission limit as prescribed in this Subpart. The owner or operator of an existing solid fuel fired stationary combustion installation must conduct a compliance test within four years of the promulgation of this regulation. After the initial compliance test, all solid fuel fired stationary combustion installations must conduct periodic compliance tests at least once during the term of the permit. Prior to each test, the owner or operator of a solid fuel fired stationary combustion installation must meet the following criteria:

(1) submit a compliance test protocol to the department for approval at least 30 days prior to emission testing. The conditions of the testing, including the representative loads of operation the testing will be conducted at, and the locations of the sampling devices must be acceptable to the department; and

(2) follow the procedures set forth in 40 CFR 60, Appendix A Method 5 (See Table 1, section 200.9 of this Title), or any other method acceptable to the department and the administrator for determining compliance with the appropriate particulate matter emission limit in section 227-1.3 of this Subpart:

(3) submit a compliance test report containing the results of the emission test to the department for approval no later than 60 days after completion of the emission test.

(b) Monitoring requirements.

(1) Any owner or operator of a stationary combustion installation (excluding combustion turbines) or a group of stationary combustion installations with a total maximum heat input capacity exceeding 250 million Btu per hour shall install, operate, and properly maintain (in accordance with manufacturer's instructions), accurate COMS that satisfy the criteria in either 40 CFR 60 Appendix B (See Table 1, section 200.9 of this Title) or a department approved case-by-case method for continuously monitoring and recording opacity. Stationary

combustion installations required to install COMS shall operate the COMS during all periods of oil and/or solid fuel firing.

(2) Each owner or operator required to operate a COMS in accordance with paragraph (1) of this subdivision shall submit an accurate excess emissions and monitoring system performance report to the department for each calendar year quarter. All reports shall be certified by a responsible corporate official as true, accurate and complete and postmarked by the 30th day following the end of each calendar quarter. The quarterly excess emissions report shall be submitted in a form acceptable to the department and shall include the following minimum information:

(i) the magnitude, date and time of each six-minute block average during which the average opacity of emissions exceeds 20 percent, except for one six-minute block average per hour not to exceed 27 percent;

(ii) identification of the specific cause and corrective action taken for each period of excess emission;

(iii) identification of all periods of COMS downtime, including the date, time and duration of each inoperable period, and the cause and corrective action for each COMS downtime period;

(iv) the total time in which the COMS are required to record data during the reporting period;

(v) the total number of exceedances and the duration of exceedances expressed as a percentage of the total time in which the COMS are required to record data; and

(vi) such other things as the department may deem necessary, proper or desirable in order to enforce article 19 of the Environmental Conservation Law or the rules promulgated thereunder.

(3) Any owner or operator of a stationary combustion installation (excluding combustion turbines) or a group of stationary combustion installations firing oil or oil in combination with other liquid or gaseous fuels with a total maximum heat input capacity of at least 50 million Btu per hour shall keep vendor certified fuel receipts

which contain the sulfur content of the oil being fired as required in 6 NYCRR Subpart 225-1 of this Chapter.

(c) Recordkeeping.

(1) All records, department approved compliance testing protocols, and test results must be maintained on site or at an alternative location, as approved by the department, for a minimum of five years.

(2) Stationary combustion installations required to maintain a COMS must maintain a record of all measurements made by the COMS and the hours of COMS downtime.

(3) Facilities required to conduct annual tune-ups must maintain records of each annual tune-up for all subject stationary combustion installations at the facility.

Section 227-1.6 Severability. Each provision of this Subpart shall be deemed severable. In the event that any provision of this Subpart is held to be invalid the remainder of this Subpart shall continue in full force and effect.

6 NYCRR Part 200, General Provisions

Revised Express Terms

(Existing sections 200.1 through 200.8 remain unchanged.)

Existing section 200.9, Table 1 is amended as follows:

[227-1.3(b)(1)]	[40 CFR Part 60, Appendix A (Updated July 1, 1996) Reference Method 9, pages 734-740]	[*]
<u>227-1.4(b)(1)</u>	<u>40 CFR 60, Appendix A (Updated July 1, 2017) Reference Method 9, pages 311-318</u>	<u>*</u>
<u>227-1.4(b)(2)</u>	<u>40 CFR 60, Appendix F, Procedure - 3 (Updated July 1, 2017)</u>	<u>*</u>
<u>227-1.5(a)(2)</u>	<u>40 CFR 60, Appendix A Method 5 (Updated July 1, 2017)</u>	<u>*</u>
<u>227-1.5(b)(1)</u>	<u>40 CFR 60, Appendix B (Updated July 1, 2017)</u>	<u>*</u>

(Existing section 200.10 through section 200.16 remains unchanged.)

Revised Regulatory Impact Statement Summary
6 NYCRR Subpart 227-1, Stationary Combustion Installations
6 NYCRR Part 200, General Provisions

INTRODUCTION

The New York State Department of Environmental Conservation (Department) is proposing to repeal and replace 6 NYCRR Subpart 227-1, “Stationary Combustion Installations” as well as attendant provisions under Part 200, “General Provisions” (collectively, Subpart 227-1). Currently, Subpart 227-1 establishes emission limits for particulate matter (PM) on oil fuel (including oil which is fired in combination with other liquid and gaseous fuels), and solid fuel (any amount) fired stationary combustion installations. Subpart 227-1 also establishes an opacity limit for all stationary combustion installations.

The Department is revising Subpart 227-1 to lower PM emission limits for existing and new stationary combustion installations except for those sources subject to new source performance standards under 40 Code of Federal Regulation (CFR) 60 and/or national emissions standards for hazardous air pollutants under 40 CFR 63, where the particulate matter standards are equal to or more stringent than the particulate matter emission standards established in this Subpart. These revisions will also correct minor typographical errors and update the regulation to incorporate changes to the air permitting regulations that have occurred over the past twenty years. In addition, the Department is revising Part 200 to incorporate by reference the applicable federal rule provisions.

As required by the Clean Air Act (CAA), the Department will incorporate the revisions to Subpart 227-1 and the attendant revisions to Part 200 into New York’s State Implementation Plan (SIP) and provide the revised SIP to U.S. Environmental Protection Agency (EPA) for review and approval. The SIP is directed at

maintaining the PM national ambient air quality standard (NAAQS) and fulfilling the Department's obligations under the regional haze SIP submitted to the EPA on March 15, 2010. These revisions are not a mandate on local governments. It applies to any entity that owns or operates a stationary combustion installation as set forth in the regulations.

STATUTORY AUTHORITY

The statutory authority for these revisions is found in the New York State Environmental Conservation Law (ECL): sections 1-0101, 3-0301, 3-0303, 19-0103, 19-0105, 19-0107, 19-0301, 19-0302, 19-0303, 19-0305, 19-0311, 71-2103, and 71-2105.

Based on the above-referenced sections, the Department has very broad authority to regulate air pollution from portable or stationary sources, including the promulgation of 6 NYCRR Subpart 227-1 entitled "Stationary Combustion Installations".

LEGISLATIVE OBJECTIVES

Article 19 of the ECL was adopted for the purpose of safeguarding the air resources of New York State from pollution. To facilitate this purpose, the Legislature bestowed specific powers and duties on the Department including the power to formulate, adopt, promulgate, amend, and repeal regulations for preventing, controlling or prohibiting air pollution. This authority also specifically includes promulgating rules and regulations for preventing, controlling or prohibiting air pollution in such areas of the state as shall or may be affected by air pollution, and provisions establishing areas of the state and prescribing for such areas (1) the degree of air pollution or air contamination that may be permitted therein, and (2) the extent to which air contaminants may be emitted to the air by any air contamination source. In addition, this authority also includes the preparation of a general comprehensive plan for the control or abatement of existing air pollution and for the

control or prevention of any new air pollution recognizing various requirements for different areas of the state.

The legislative objectives underlying the statutes are directed toward protection of the environment and public health. The proposed rulemaking will further the state's goals by reducing air pollution, specifically PM emissions, a criteria pollutant and a precursor to PM-2.5, which in turn is a precursor to visibility-impairing haze from the majority of oil firing stationary sources.

NEEDS AND BENEFITS

There are many environmental benefits inherent in the reductions of PM that do not explicitly relate to visibility improvement. These reductions will lead to advances in health protection as well. In addition to experiencing improved visibility, forested areas such as the Adirondack Park will benefit from reduced PM acid deposition impacts. These environmental impacts could also be expected to translate into economic benefits from increased public use of a cleaner and visibly healthier park.

Elevated PM levels are of concern for the New York City metropolitan area, which has been designated, until recently, as non-attainment for the annual and 24-hour PM-2.5 NAAQS. PM consists of microscopic solid or liquid particles and is the major cause of the regional haze issue. PM can be emitted directly from stationary sources or comprised of nitrate and sulfate particles formed through reactions involving NO_x and SO₂ in the atmosphere. These particles are small enough to be inhaled into the lungs and can even enter the bloodstream. Ongoing scientific studies show that particulate inhalation, similarly to ozone, leads to health problems such as coughing, difficulty breathing, aggravated asthma, and a higher likeliness for other respiratory disorders. Increased PM exposure may even cause premature death in those with existing heart or lung disease.

The revisions to Subpart 227-1 are intended to reduce the emission of PM that are the precursors of PM-

2.5 below the present levels. Regulatory efforts such as the NSPS and NESHAP programs, past NYS and federal fuel PM emission limits for stationary and mobile sources, and efforts like the Clean Air Interstate Rule have had a significant effect on air quality and health. The proposed PM limits in this rule are expected to further reduce monitored values of PM-2.5, and to enable and maintain attainment of the NAAQS. The proposed PM emission limits will reduce actual PM emissions throughout NYS by two to five tons per day.

Stakeholder Meetings:

The Department held stakeholder meetings on July 26th through July 28th, 2017 in Albany, NY, New York City, NY and Avon, NY, respectively. The Department sent a fact sheet out to interested parties including the environmental justice community. Several of the interested parties attended each of these meetings where they asked questions and provided comments on the draft regulatory language.

COSTS

Costs to Regulated Parties and Consumers:

For oil fuel fired stationary combustion installation control costs, there is a direct correlation between the sulfur content of fuel oil and PM emissions. The USEPA's 5th Edition AP-42 Final Section for External Combustion Sources (AP-42) emission factors for residual oil contain a sulfur-in-fuel component. Since the 2013 revision of Subpart 225-1 lowered the sulfur-in-fuel requirements for fuel oil (both residual and distillate oils), the emission factor derived from AP-42 would be lower than the Subpart 227-1 revised prescribed PM emission limit of 0.1 pounds per million Btu for oil fired stationary combustion installations.

The AP-42 distillate oil PM emission factors are also lower than the prescribed Subpart 227-1 PM emission limits. Based on these factors, the Department does not believe that there will be a need to install PM emission controls on oil fired stationary combustion installations as a result of these proposed revisions to

Subpart 227-1. Therefore, the Department’s proposed PM emission limit for oil fired stationary combustion installations will not cause any new control costs to be incurred by the sources subject to the proposed regulation.

For solid fuel fired stationary combustion installation control costs, there are several control technologies that may be used to control PM emissions from solid fuel stationary combustion installations. The following table¹ lists the control types and costs for installing PM controls on solid stationary combustion installations of 10 mmBtu/hr or smaller heat input:

Control Type	Removal Effectiveness (%)	Installation Costs (\$)	Annual Operations/Maintenance Costs (\$)
Cyclone	50	7,000 - 10,000	< 1,000
Multi-Clone	75	10,000 – 16,000	< 1,000
Core Separator	60	100,000	Unknown
ESP	90	60,000 – 175,000	1,000 – 3,000 + electricity costs
Fabric Filter	98	80,000 – 135,000	10,000

For solid fuel fired stationary combustion installations greater than 10 mmBtu/hr heat input the cost figures can be conservatively increased one time for every 10 mmBtu/hr increase in heat input. Therefore, the cost figure would double for a 20 mmBtu/hr heat input stationary combustion installation, while tripling for a 30 mmBtu/hr heat input combustion installation. The life span of these control devices has been conservatively estimated to be 20 years.

¹ The information contained in this table comes from the July 2010 NYSERDA report – Comparative Emissions Characterization of a Small-Scale Wood Chip-Fired Boiler and an Oil-Fired Boiler.

Both oil and solid fuel fired stationary combustion installations will be required to perform annual tune-ups. Solid fuel fired stationary combustion installations will be required to conduct emissions compliance testing at least once during the term of their permit. Annual tune-ups cost between \$1,000.00 and \$5,000.00 per tune-up, depending on the size of the source. Compliance tests cost between \$5,000.00 and \$10,000.00 per test, depending on the size of the source and complexity of the test set-up based on source configuration.

Costs to State and Local Governments:

New York State and local governments may incur increased control and compliance testing costs associated with this proposed regulation. There will also be minimal new recordkeeping and annual tune-up requirements imposed on local governments as a result of this proposed rule-making. Based on the Department's permitting data, there are a total of 56 Title V permits, 104 state facility permits, and 760 registrations at New York State and local government facilities. Approximately 210 of these facilities contain stationary combustion installations where the requirements of Subpart 227-1 are applicable. Of the 210 affected facilities 180 contain oil fired stationary combustion installations while there are 30 facilities that fire wood for fuel. Therefore, over 85 percent of the affected New York State and local government facilities will incur minimal costs to comply with the proposed rulemaking.

Costs to the Regulating Agency:

The Department will face some initial administrative costs associated with the application review and permitting of the new PM limits. Minimal additional monitoring, recordkeeping, and reporting requirements are being proposed under this rule-making. Therefore, minimal additional costs will be incurred by the regulating agency based on these factors.

LOCAL GOVERNMENT MANDATES

This is not a mandate on local governments. Local governments have no additional compliance obligations as compared to other subject entities. Also, no additional monitoring, recordkeeping, reporting, or other requirements will be imposed on local governments under this rulemaking.

PAPERWORK

The proposed changes to Subpart 227-1 will create no additional paperwork for the facilities subject to the requirements of this rule.

DUPLICATION

The proposed revisions to Subpart 227-1 do not duplicate, overlap, or conflict with any other State or federal requirements.

ALTERNATIVES

The Department evaluated the following alternatives:

(1) Take no action: This alternative could prevent New York State from complying with its obligations under the CAA. If the Department does not implement this regulation, the state would not be able to meet its obligations to maintain attainment with the PM-2.5 standard, nor would it reduce the regional haze impacts in the northeast. The reduction in PM emission limits will directly result in reductions of PM, PM-10, and PM-2.5. Therefore, the “Take no action” alternative has been rejected.

(2) Partial revision of the current regulation: The Department could revise Subpart 227-1 to only correct the typographical errors and update the permitting language contained in the regulation. However, the Subpart 227-1 PM emission limits were last revised in 1971 and are over 45 years old, and do not lend favorably to the state's air quality goals that were discussed earlier. These limitations are based on combustion and control technologies that are 50 years old. Therefore, based on the vast improvements in both combustion and control technologies the "partial revision" alternative has been rejected.

FEDERAL STANDARDS

The proposed revisions to Subpart 227-1 do not exceed any minimum federal standards.

COMPLIANCE SCHEDULE

The compliance date for existing solid fuel fired stationary combustion installations, including the installation of any required controls and the completion of compliance testing, is four years from the effective date of the revisions. For existing stationary combustion installations which fire oil or oil in combination with other liquid or gaseous fuels, compliance is required on the effective date of the regulation. The compliance date for new stationary combustion installations will be upon the commencement of operation.

Revised Regulatory Impact Statement
6 NYCRR Subpart 227-1, Stationary Combustion Installations
6 NYCRR Part 200, General Provisions

I. INTRODUCTION

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The revisions to Subpart 227-1 include lowering PM emission limits for existing and new stationary combustion installations, except for those stationary combustion installations that are subject to new source performance standards under 40 Code of Federal Regulation (CFR) 60 and/or national emissions standards for hazardous air pollutants under 40 CFR 63, where the particulate matter standards established in the above regulations are equal to or more stringent than the particulate matter emission standards established in this Subpart. These revisions will also correct minor typographical errors and update the regulation to incorporate changes to the air permitting regulations that have occurred over the past twenty years. In addition, the Department is revising Part 200 to incorporate by reference the applicable federal rule provisions.

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II. STATUTORY AUTHORITY

The statutory authority for these revisions is found in the New York State Environmental Conservation Law (ECL), sections 1-0101, 3-0301, 3-0303, 19-0103, 19-0105, 19-0107, 19-0301, 19-0302, 19-0303, 19-0305, 19-0311, 71-2103, and 71-2105.

ECL section 1-0101. This section declares it to be the policy of the state to conserve, improve and protect its natural resources and environment and control air pollution in order to enhance the health, safety and welfare of the people of the state and their overall economic and social wellbeing. Section 1-0101 provides that it is the policy of the state to coordinate the state's environmental plans, functions, powers and programs with those of the federal government and other regions and manage air resources to the end that the state may fulfill its responsibility as trustee of the environment for present and future generations. This section also provides that it is the policy of the state to foster, promote, create and maintain conditions by which man and nature can thrive in harmony by providing that care is taken for air resources that are shared with other states.

ECL section 3-0301. This section empowers the Department to promulgate regulations to carry out the environmental policy of New York State as set forth in section 1-0101 and specifically empowers the Department to cooperate with officials and representatives of the federal government, other states and interstate agencies regarding problems affecting the environment. Section 3-0301 specifically empowers

the Department to provide for the prevention and abatement of air pollution.

ECL section 3-0303. This section requires that the Department formulate and, from time to time, revise a statewide environmental plan for the management and protection of the quality of the environment and the natural resources of the state. In formulating this plan and any revisions, the Department is required to conduct public hearings, cooperate with other departments, agencies and government officials, and any other interested parties, and obtain assistance and data as may be necessary from any department, division, board, bureau, commission or other agency of the state or political subdivision or any public authority to enable the Department to carry out its responsibilities.

ECL section 19-0103. This section declares that it is the policy of New York State to maintain the purity of air resources and to require the use of all available practical and reasonable methods to prevent and control air pollution in the state.

ECL section 19-0105. This section declares that it is the purpose of Article 19 of the ECL to safeguard the air resources of New York State under a program which is consistent with the policy expressed in section 19-0103 and in accordance with other provisions of Article 19.

ECL section 19-0107. This section provides definitions to be used in the application of the requirements of Article 19 of the ECL.

ECL section 19-0301. This section authorizes the Department to adopt regulations to prevent and control air pollution in such areas of the state that are affected by air pollution, develop a general comprehensive plan for the control and abatement of existing air pollution and for the control and prevention of new air

pollution, and cooperate with government agencies and other states or interstate agencies with respect to the control of air pollution.

ECL section 19-0302. This section states that permit applications, renewals, modifications, suspensions and revocations are governed by rules and regulations adopted by the Department, and that permits issued may not include performance, emission or control standards more stringent than any standard established by the Act or EPA unless such standards are authorized by rules or regulations.

ECL section 19-0303. This section provides that the terms of any air pollution control regulation promulgated by the Department may differentiate between particular types and conditions of air pollution and air contamination sources.

ECL section 19-0305. This section authorizes the Department to enforce the codes, rules and regulations established in accordance with Article 19.

ECL section 19-0311. Section 19-0311(1) requires that the Department “establish an operating permit program for sources subject to Title V of the Act.” This section also outlines the various requirements that the permit program must satisfy, including the specific emission sources that are subject to the program. Section 19-0311(2)(a) states that the Department shall “review and revise, as necessary to be consistent with the Act and other applicable federal and state laws, existing regulations to provide for adequate, streamlined and reasonable procedures for processing permit applications, for public notice and participation, including offering an opportunity for public comment and hearing, and for expeditious review of permit actions, including applications, renewals and revisions.”

ECL sections 71-2103 and 71-2105 provide for civil and criminal penalties for violations of regulations promulgated pursuant to Article 19.

Based on the above-referenced sections, the Department has very broad authority to regulate air pollution from portable or stationary sources, including the promulgation of 6 NYCRR Subpart 227-1 entitled “Stationary Combustion Installations”.

III. LEGISLATIVE OBJECTIVES

Article 19 of the ECL was adopted for the purpose of safeguarding the air resources of New York State from pollution. To facilitate this purpose, the Legislature bestowed specific powers and duties on the Department including the power to formulate, adopt, promulgate, amend, and repeal regulations for preventing, controlling or prohibiting air pollution. This authority also specifically includes promulgating rules and regulations for preventing, controlling or prohibiting air pollution in such areas of the state as shall or may be affected by air pollution, and provisions establishing areas of the state and prescribing for such areas (1) the degree of air pollution or air contamination that may be permitted therein, and (2) the extent to which air contaminants may be emitted to the air by any air contamination source. In addition, this authority also includes the preparation of a general comprehensive plan for the control or abatement of existing air pollution and for the control or prevention of any new air pollution recognizing various requirements for different areas of the state.

The legislative objectives underlying the statutes are directed toward protection of the environment and public health. The proposed rulemaking will further the state’s goals by reducing air pollution, specifically PM emissions, a criteria pollutant and a precursor to PM-2.5, which in turn is a precursor to visibility-impairing haze from the majority of oil firing stationary sources.

IV. NEEDS AND BENEFITS

Regional haze refers to the presence of light-inhibiting pollutants in the atmosphere. These particles and gases scatter or absorb light to cause a net effect referred to as “light extinction.” This scattering and absorbing occurs across the sight path of an observer, thus leading to a hazy condition. Emissions of pollutants such as SO₂, PM, PM-10, and PM-2.5 are the primary contributors to visibility problems. These pollutants lend themselves to being transported great distances once they enter the atmosphere. Accordingly, sources contribute to visibility impairment in Class I areas (e.g., national parks and wilderness areas) far downwind of their locations, thereby necessitating a regional approach to solving the haze issue.

Although no Class I areas exist within New York State, modeling shows that emissions from sources within the state contribute to visibility impairment in nine downwind Class I areas: Lye Brook Wilderness Area, VT; Brigantine Wilderness Area, NJ; Presidential Range/Dry River Wilderness Area and Great Gulf Wilderness Area, NH; Roosevelt/Campobello International Park, Acadia National Park, and Moosehorn Wilderness Area, ME; Shenandoah National Park, VA; and Dolly Sods Wilderness Area, WV.

The pervasive, regional nature of haze throughout the eastern United States requires a unified strategy for reducing emissions among the states. For this purpose, EPA established five Regional Planning Organizations (RPOs). New York State is a member of the Mid-Atlantic/Northeast Visibility Union (MANE-VU) RPO and works with the other member states to develop regional haze strategies. New York has the responsibility of controlling visibility-impairing pollution from oil and wood-fired sources, to the greatest extent possible, as the emissions from these sources affect nine federal Class I areas.

There are many environmental benefits inherent in the reductions of PM that do not explicitly relate to visibility improvement. These reductions will also lead to advances in health protection. Although downwind

rural and urban areas within New York State were not specifically targeted by the Regional Haze Rule, these areas can expect to benefit from improved air quality. In addition to experiencing improved visibility, forested areas such as the Adirondack Park, will benefit from reduced PM acid deposition impacts, which could also be expected to translate into economic benefits from increased public use of a cleaner and visibly healthier park.

In rural areas of New York State, increased wood burning during the heating season contributes to the increase in haze forming pollutant emissions, both locally and regionally. As stated above, these increased emissions contribute to regional visibility impairment and public health issues. Reductions of PM emissions are imperative to improving the air quality in rural areas. This rulemaking, in combination with the federal residential wood heat regulations, will aid on a regional level in the overall reduction of haze causing pollutants.

In April 2016, the New York State Energy Research and Development Authority (NYSERDA) issued a report titled "New York State Wood Heat Report: An Energy, Environmental, and Market Assessment", which set forth its analysis on the modeled impacts of different size and types of wood fired emission sources in rural areas. The report looked at three specific facilities that fired wood, sized from 1.7 to 7.1 million British thermal units (Btu) per hour heat input, at three locations throughout New York State. Two of the facilities were located at schools, and the third was located at a hospital. The report stated that:

"In neighborhoods where distances between homes with wood-burning devices are large, a large institutional wood-fired boiler will be the predominant source of woodsmoke. Controlling the institutional boiler in these cases will have the biggest potential for health-relevant effects. In neighborhoods with a high density of inefficient wood-fired boilers with poor emissions controls, installing improved wood-fired boiler technology at the large institution can significantly mitigate air impacts, but the existing residential sources will continue to produce moderate air

impacts on the neighborhood¹."

The report concluded that oil fired emission sources have less air quality impacts than wood fired emissions sources and that uncontrolled wood fired technologies (like those currently in place) have the highest impacts on air quality. The report states:

"The results presented in this chapter indicate that moving from oil to wood will increase air quality impacts, which may have associated health impacts (not quantified here), but that those impacts can be significantly reduced through use of best available technology (BAT) or next BAT technologies, best practices, and proper installation. The results of this analysis show the potential for some installations of wood-fired technologies at residential and institutional sources to cause near-source pollutant levels namely for PM_{2.5} and NO₂—to be above the level of federal air quality standards.²"

Based on the conclusions of the April 2016 NYSERDA report, the Department has determined that reducing the emission standard for existing wood fired emission sources will reduce air quality impacts and improve air quality for sensitive receptors that reside, are located, or work in the impact zones of these emission sources.

Elevated PM levels are also of concern for the New York City metropolitan area, which had been designated, until recently, as non-attainment for the annual and 24-hour PM-2.5 NAAQS. PM consists of microscopic solid or liquid particles and is the major cause of the regional haze issue. PM can be emitted directly from stationary sources or comprised of nitrate and sulfate particles formed through reactions involving

¹ April 2016 NYSERDA "New York State Wood Heat Report: An Energy, Environmental, and Market Assessment", Chapter 9, pages 284-285.

² Id, page 295.

NO_x and SO₂ in the atmosphere. These particles are small enough to be inhaled into the lungs and can even enter the bloodstream. Ongoing scientific studies show that particulate inhalation, similarly to ozone, leads to health problems such as coughing, difficulty breathing, aggravated asthma, and a higher likeliness for other respiratory disorders. Studies have also shown that elevations in PM concentrations are associated with such cardiovascular threats as irregular heartbeat and non-fatal heart attacks. Increased PM exposure may even cause premature death in those with existing heart or lung disease.

The revisions to Subpart 227-1 are intended to reduce the emissions of PM, that are the precursors of PM-2.5, below the present levels. Existing regulations and emission control programs have been successful in the past at reducing these emissions. Regulatory efforts such as the NSPS and NESHAP programs, past NYS and federal fuel PM emission limits for stationary and mobile sources, and efforts like the Clean Air Interstate Rule have had a significant effect on air quality and health. The proposed PM emission limits in this rule are expected to further reduce monitored values of PM-2.5 and to maintain attainment of the NAAQS.

The proposed PM emission limit of 0.1 pounds per million Btu for oil fired sources will yield a potential PM reduction of fifty percent from the existing PM emission limit of 0.2 pounds per million Btu, while the proposed solid fuel fired PM emission limit of 0.1 pounds per million Btu will potentially lower emissions up to eighty-plus percent depending on the size of the stationary combustion installation. The proposed PM emission limits will reduce actual PM emissions throughout New York State by two to five tons per day.

Stakeholder Meetings:

In July 2017, the Department invited interested parties and the environmental justice community to participate in informational sessions regarding the Department's plans to initiate Part 227-1 rulemaking. The Department provided stakeholders with a fact sheet explaining the Department's preliminary rulemaking ideas,

and invited participants to ask questions and provide feedback at three scheduled stakeholder meetings, which were held on: July 26, 2017 in Albany, NY; July 27, 2017 in New York City, NY; and July 28, 2017 in Avon, NY. Several interested parties attended each of these meetings, asked several questions and provided comments on the preliminary regulatory initiative. This rulemaking incorporates some of the ideas and recommendations discussed at the stakeholder meetings.

V. COSTS

Costs to Regulated Parties and Consumers:

For oil fuel fired stationary combustion installation control costs, a large contributor to PM emissions is the sulfur content of the fuel. There is a direct correlation between the sulfur content of fuel oil and PM emissions; the lower the fuel sulfur content, the lower the amount of PM emitted. The EPA's 5th Edition AP-42 Final Section for External Combustion Sources (AP-42) emission factors for residual oil contains a sulfur-in-fuel component. Since the 2013 revision of 6 NYCRR Subpart 225-1, which lowered the sulfur-in-fuel requirements for fuel oil (both residual and distillate oils), the emission factor derived from AP-42 would be lower than the Subpart 227-1 revised prescribed PM emission limit of 0.1 pounds per million Btu for oil fired stationary combustion installations.

The AP-42 distillate oil PM emission factors are also lower than the prescribed Subpart 227-1 PM emission limit. Based on these factors, the Department does not believe that there will be a need to install PM emission controls on oil fired stationary combustion installations as a result of these proposed revisions to Subpart 227-1. Therefore, the Department's proposed PM emission limit for oil fired stationary combustion installations will not cause any new control costs to be incurred by the facilities subject to this regulation.

For solid fuel fired stationary combustion installation control costs, there are several control

technologies that may be used to control PM emissions from solid fuel stationary combustion installations. These control technologies include proper boiler design and operation, cyclones, multi-clones, core separators, electrostatic precipitators (ESPs), and fabric filters (aka: bag houses). The following table³ lists the costs for installing PM controls on solid stationary combustion installations of 10 mmBtu/hr or smaller heat input:

Control Type	Removal Effectiveness (%)	Installation Costs (\$)	Annual Operations/Maintenance Costs (\$)
Cyclone	50	7,000 - 10,000	< 1,000
Multi-Clone	75	10,000 – 16,000	< 1,000
Core Separator	60	100,000	Unknown
ESP	90	60,000 – 175,000	1,000 – 3,000 + electricity costs
Fabric Filter	98	80,000 – 135,000	10,000

For solid fuel fired stationary combustion installations greater than 10 mmBtu/hr heat input, the cost figures can be conservatively increased one time for every 10 mmBtu/hr increase in heat input. Therefore, the cost figure would double for a 20 mmBtu/hr heat input stationary combustion installation, while tripling for a 30 mmBtu/hr heat input combustion installation. The life span of these control devices has been conservatively estimated to be 20 years.

Both oil and solid fuel fired stationary combustion installations will be required to perform annual tune-ups. Solid fuel fired stationary combustion installations will be required to conduct emissions compliance testing at least once during the term of their permit (either once every five years for Title V facilities or once

³ The information contained in this table comes from the July 2010 NYSERDA report – Comparative Emissions Characterization of a Small-Scale Wood Chip-Fired Boiler and an Oil-Fired Boiler.

every 10 years for State facilities and Registrations). Annual tune-ups cost between \$1,000.00 and \$5,000.00 per tune-up, depending on the size of the stationary combustion installation. The compliance tests generally run between \$5,000.00 and \$10,000.00 per test, depending on the size of the stationary combustion installation and the complexity of the test set-up based on source configuration.

Costs to State and Local Governments:

New York State and local governments may incur increased control and compliance testing costs associated with this proposed regulation. There will also be minimal new recordkeeping and annual tune-up requirements imposed on local governments as a result of this proposed rule-making. Based on the Department's permitting data, there are a total of 56 Title V permits, 104 state facility permits, and 760 registrations at New York State and local government facilities. Approximately 210 of these facilities contain stationary combustion installations where the requirements of Subpart 227-1 are applicable. The vast majority of the 210 affected facilities contain oil fired stationary combustion installations (approximately 180 facilities). The Department has issued permits or registrations to 51 facilities throughout the State that employ 76 wood fired emission sources. These emission sources range in size from 1.4 mmBtu/hr heat input to 855 mmBtu/hr heat input and burn wood chips, hogged wood fuel, and wood pellets. Of these 51 facilities, 30 are owned by New York State or local governments. Therefore, over 85 percent of the affected New York State and local government facilities will incur minimal costs to comply with the proposed rulemaking.

Costs to the Regulating Agency:

The Department will face some initial administrative costs associated with the application review and permitting of the new PM limits. Minimal additional monitoring, recordkeeping, and reporting requirements are being proposed under this rule-making. Therefore, minimal additional costs will be incurred by the regulating agency based on these factors.

VI. LOCAL GOVERNMENT MANDATES

This is not a mandate on local governments. Local governments have no additional compliance obligations as compared to other subject entities. Also, no additional monitoring, recordkeeping, reporting, or other requirements will be imposed on local governments under this rulemaking.

VII. PAPERWORK

The proposed changes to Subpart 227-1 will create no additional paperwork for the facilities subject to the requirements of this rule.

VIII. DUPLICATION

The proposed revisions to Subpart 227-1 do not duplicate, overlap, or conflict with any other State or federal requirements.

IX. ALTERNATIVES

The Department evaluated the following alternatives:

- (1) Take no action: This alternative could prevent New York State from complying with its obligations under the CAA. If the Department does not implement this regulation, the state would not be able to meet its obligations to maintain attainment in the PM-2.5 attainment areas throughout New York State. Also, without the promulgation of Subpart 227-1, the state would not reduce its regional haze impacts in the northeast. The reduction in PM emission limits will directly result in reductions of PM, PM-10, and PM-2.5. Reducing these air contaminants will aid New York in maintaining its attainment status for PM-2.5 and reduce the state's regional haze impact.

Therefore, the “Take no action” alternative has been rejected.

- (2) Partial revision of the current regulation: The Department could revise Subpart 227-1 to only correct the typographical errors and update the permitting language contained in the regulation. However, the PM emission limits in the current regulation were last revised in 1971 and are over 45 years old. These limitations are based on combustion and control technologies that are 50 years old, out-of-date, and do not lend favorably to the state’s air quality goals that were discussed earlier. Therefore, based on the vast improvements in both combustion and control technologies the “partial revision” alternative has been rejected.

X. FEDERAL STANDARDS

The proposed revisions to Subpart 227-1 do not exceed any minimum federal standards.

XI. COMPLIANCE SCHEDULE

The compliance date at existing solid fuel fired stationary combustion installations, including the installation of any required controls and the completion of compliance testing, is four years from the effective date of the revisions. For existing stationary combustion installations which fire oil or oil in combination with other liquid or gaseous fuels, compliance is required on the effective date of the regulation. The compliance date for new stationary combustion installations will be upon the commencement of operation.

Stationary combustion installations which fire oil or oil in combination with other liquid or gaseous fuels shall comply with the particulate emission limit of this Subpart by firing oil that is compliant with the sulfur-in-fuel standards in 6 NYCRR Subpart 225-1. These emission sources are also required to maintain vendor fuel certifications pursuant to 6 NYCRR Subpart 225-1. Solid fuel fired stationary combustion

installations shall comply with the particulate matter standards of this rule, which includes installing, maintaining, and operating particulate matter control equipment, while periodically conducting compliance testing of the emission sources.

Job Impact Statement

6 NYCRR Subpart 227-1, Stationary Combustion Installations

6 NYCRR Part 200, General Provisions

NATURE OF IMPACT

CATEGORIES AND NUMBERS OF JOBS OR EMPLOYMENT OPPORTUNITIES AFFECTED

The promulgation of Subpart 227-1 is not anticipated to have any long-term effects on the number of current jobs or future employment opportunities throughout New York State (NYS).

The reductions in visibility-impairing pollutants resulting from the implementation of Subpart 227-1 could result in a positive impact on the tourism industry, particularly for the Adirondack and Catskill Parks. Aside from the mitigation of haze in these areas and across New York State, improvements in acid deposition will be seen, keeping trees and waterways in good condition, thus allowing state parks to remain healthy and attractive places to visit. Increased tourism could create additional job opportunities throughout the state.

REGIONS OF ADVERSE IMPACT

The proposed Subpart 227-1 is a statewide regulation. This regulation is not expected to have an adverse impact on jobs or employment opportunities in New York State. It does not impact any region or area in the state disproportionately in terms of jobs or employment opportunities.

MINIMIZING ADVERSE IMPACT

The Department does not expect any adverse impacts on jobs in New York State based on the proposed changes to Subpart 227-1. Subpart 227-1 is a statewide regulation. Its requirements are the same for all facilities and will not impact job opportunities in the state.

SELF-EMPLOYMENT OPPORTUNITIES

There are no anticipated adverse impacts towards self-employment opportunities associated with the proposed Subpart 227-1 regulation.

Revised Rural Area Flexibility Analysis
6 NYCRR Subpart 227-1, Stationary Combustion Installations
6 NYCRR Part 200, General Provisions

TYPES AND ESTIMATED NUMBERS OF RURAL AREAS AFFECTED

The proposed rule (Subpart 227-1) is not expected to have a substantial adverse impact on rural areas in New York State (NYS). Rural areas are defined as rural counties in New York State that have populations of less than 200,000 people, towns in non-rural counties where the population densities are less than 150 people per square mile, and villages within those towns. The proposed rulemaking will apply statewide and thus all affected stationary combustion installations throughout the state will be equally affected.

COMPLIANCE REQUIREMENTS

The proposed rule will lower particulate matter (PM) emission limits, correct typographical errors, and update the regulation to incorporate changes to the air permitting regulations. Minimal additional recordkeeping and reporting requirements are being proposed under this rule-making.

COSTS

Solid fuel fired (any amount) stationary combustion installations subject to the Subpart 227-1 provisions may incur increased control costs associated with this proposed regulation. Depending on the size of the affected emission source and type of control required to meet the prescribed limit of the proposed regulation the costs incurred may vary greatly. The annualized cost control range, which includes installation, operations, maintenance (including annual tune-ups), and monitoring costs is based on a 20-year control life, and has been calculated to be between \$1,250.00 and \$20,500.00 per individual emission source.

There are no projected control costs associated with oil fired (this includes oil fired in combination with other liquid and gaseous fuels) stationary combustion installations. There will be minimal new costs associated with compliance testing (once during the term of the permit or registration), recordkeeping, and annual tune-ups that are required under the proposed regulation. The annualized cost for these sources has been calculated to be between \$1,250.00 and \$5,500.00 per individual emission source.

MINIMIZING ADVERSE IMPACT

The Department does not expect any adverse impacts on rural areas of the state. There will be positive environmental impacts from the regulation in rural areas. Rural areas should witness improved visibility with an associated decrease in airborne PM.

Subpart 227-1 is a statewide regulation. Its requirements are the same for all affected facilities, and rural areas are impacted no differently than other areas in New York State.

RURAL AREA PARTICIPATION

The Department held stakeholder meetings on July 26th through July 28th, 2017 in Albany, NY, New York City, NY and Avon, NY, respectively. The Department sent a fact sheet out to interested parties, including the environmental justice community. Several of the interested parties attended each of these meetings where they asked questions and provided comments on the draft regulatory language. These meetings included the rural-area stakeholders as well as industry representatives. The Department will also hold public hearings and seek comments on Subpart 227-1 in the upstate and other rural areas as part of this proposed rulemaking.

Revised Regulatory Flexibility Analysis for Small Businesses and Local Governments

6 NYCRR Subpart 227-1, Stationary Combustion Installations

6 NYCRR Part 200, General Provisions

EFFECT OF RULE ON SMALL BUSINESSES AND LOCAL GOVERNMENTS

The Department proposes to revise Subpart 227-1, “Stationary Combustion Installations” as well as attendant provisions under Part 200, “General Provisions” (collectively, Subpart 227-1). The proposed rulemaking will apply statewide. Small businesses are those that are independently owned, located within New York State (NYS), and that employ 100 or fewer persons. The proposed revisions to the Subpart 227-1 requirements flow from the state’s obligations under the federal Clean Air Act. Therefore, the proposed revisions do not constitute a mandate on local governments. The Subpart 227-1 requirements apply equally to every facility that contains a stationary combustion installation in New York State. The proposed revisions will not affect small businesses or local governments differently from any other source subject to this rule.

COMPLIANCE REQUIREMENTS

The proposed rule will lower particulate matter (PM) emission limits, correct typographical errors, and update the regulation to incorporate changes to the air permitting regulations. Minimal additional monitoring, recordkeeping, and reporting requirements are being proposed under this rule-making.

PROFESSIONAL SERVICES

The proposed rule will lower PM limits. No changes will be made in the monitoring, recordkeeping, or reporting requirements in the current version of Subpart 227-1. Facilities subject to this rule are simply required to comply with the new lower PM emission limits. Based on the requirement to meet lower PM emission limits the Department expects that some small businesses and/or local governments will need to hire additional

professional services to comply with the provisions of the proposed rule.

COSTS

Solid fuel fired (any amount) stationary combustion installations subject to the Subpart 227-1 provisions may incur increased control costs associated with this proposed regulation. Depending on the size of the affected emission source and type of control required to meet the prescribed limit of the proposed regulation the costs incurred may vary greatly. The annualized cost control range, which includes installation, operations, maintenance (including annual tune-ups), and monitoring costs is based on a 20-year control life and has been calculated to be between \$1,250.00 and \$20,500.00 per individual emission source.

There are no projected control costs associated with oil fired (this includes oil fired in combination with other liquid and gaseous fuels) stationary combustion installations. There will be minimal new costs associated with compliance testing (once during the term of the permit or registration), recordkeeping, and annual tune-ups that are required under the proposed regulation. The annualized cost for these sources has been calculated to be between \$1,250.00 and \$5,500.00 per individual emission source.

Based on the Department's permitting data, there are a total of 56 Title V permits, 104 state facility permits, and 760 registrations at New York State and local government facilities. Approximately 210 of these facilities contain stationary combustion installations where the requirements of Subpart 227-1 are applicable. The vast majority of the 210 affected facilities contain oil fired stationary combustion installations (approximately 180 facilities). The Department has issued permits or registrations to 51 facilities throughout the State that employ 76 wood fired emission sources. These emission sources range in size from 1.4 mmBtu/hr heat input to 855 mmBtu/hr heat input and burn wood chips, hogged wood fuel, and wood pellets. Of these 51 facilities 30 are owned by New York State or local governments. Therefore, over 85 percent of the affected

New York State and local government facilities will incur minimal costs to comply with the proposed rulemaking.

MINIMIZING ADVERSE IMPACTS

The Department does not expect any particular adverse impacts on small businesses and local governments throughout New York State. Subpart 227-1 is a statewide regulation. Its requirements are the same for all facilities. The Department does not anticipate small businesses or local governments to be impacted differently than other sources subject to the proposed revisions to Subpart 227-1.

SMALL BUSINESS AND LOCAL GOVERNMENT PARTICIPATION

The Department held stakeholder meetings (including environmental justice outreach) on July 26th through July 28th, 2017 in Albany, NY, New York City, NY and Avon, NY, respectively. The Department sent a fact sheet out to interested parties, including the environmental justice community. Several of the interested parties attended each of these meetings where they asked questions and provided comments on the draft regulatory language. The meetings were held to give representatives from the affected small business and local government representatives an opportunity to meet with Department staff and discuss various issues during the rulemaking process. The Department will also hold public hearings and seek comments on Subpart 227-1 throughout New York State and will notify small business and local government representatives as part of this proposed rulemaking.

ECONOMIC AND TECHNOLOGICAL FEASIBILITY

The Department has determined that the control technologies available for affected emission sources are both economically and technologically feasible.

CURE PERIOD OR AMELIORATIVE ACTION

The Department is not including a cure period in this rulemaking. The purpose of this regulation is to provide timely emissions reductions, delaying enforcement of the regulation adversely affects such emissions reductions.

Assessment of Public Comments Summary

6 NYCRR Subpart 227-1, Stationary Combustion Installations

During the public comment period for the proposed revisions to 6 NYCRR Subpart 227-1, the Department received a total of five comment letters. The Department parsed the comments into the following categories and prepared responses for each comment. This document summarizes those comments.

General:

The Department received comments on the number of wood-burning facilities affected by the proposed regulation, clarity on permit renewals, emissions from residential sectors, adverse impacts, and expenses required to achieve environmental benefits. Based on these comments, the Department clarified both the Regulatory Impact Statement (RIS) and the Regulatory Flexibility Analysis for Small Businesses and Local Governments to include the number of wood-burning facilities affected by the proposed changes.

The revisions to Subpart 227-1 lower PM emission limits for existing and new stationary combustion installations that are not subject to an equivalent or more stringent federal new source performance standard (NSPS) and/or national emissions standard for hazardous air pollutants (NESHAP). Currently, there is no NSPS for commercial/industrial/institutional wood burning sources in the 1 to 10 mmBtu/hr size range. Under Subpart 227-1, the current PM standard of 0.6 lbs/mmBtu for these size sources was developed over 40 years ago. Facilities that seek to replace existing wood burning sources have no incentive to purchase state-of-the-art equipment with controls. Therefore, as emissions of PM from residential sources decreases, the percentage of the emissions from the commercial/industrial/institutional will increase, if no new requirements are promulgated.

Annual Tune-ups:

The Department received comments requesting that wood burning sources smaller than 2 mmBtu/hr heat input be exempt from field testing of emissions, be required to only meet the annual tune-up provisions, or be exempted entirely from the regulation.

The Department's response states that periodic emissions testing will demonstrate if a source is complying with the required emission standards, and also indicate how much a source's performance may have degraded from the time it was originally installed. The current version of the regulation requires wood burning sources one mmBtu/hr or greater to meet an emission limit. Based on the current applicability and requirements, the Department stated that it could not "back slide" and exempt these sources or remove emission limit requirements.

Applicability:

The Department received comments requesting clarification regarding rule applicability. The express terms state that sources subject to equivalent or more stringent federal requirement are not subject to the requirements of the proposed Subpart. Clarifying language was add to the RIS to address these comments.

In particular, the Department responded to a comment concerning opacity requirements for certain fuels. The Subpart 227-1 opacity standard applies to all stationary combustion installations, regardless of the type of fuel combusted. This requirement has been in effect since the original regulation was promulgated on August 12, 1972.

The Department also responded to a comment to explain that this rulemaking eliminates the duplication of requirements in Subpart 227-1 from those in federal regulations. Any emission source at an affected facility that is subject to an NSPS or NESHAP which requires equivalent or more stringent emission standards than those proposed in Subpart 227-1 is not subject to the requirements of Subpart 227-1.

Cost:

The Department received comments stating that the cost estimates cited in the RIS are not accurate. The Department responded that the cost figures cited in the RIS were based on vendor data from the NYSERDA report¹.

Also regarding costs, the Department stated that while there may be varying costs associated with this rulemaking, each affected installation will need to individually evaluate the options available to them and determine the best course of action necessary to achieve compliance with the proposed emission standards.

Several comments stated that some existing wood-fired systems could not meet the required emission limit within two years of adoption of the rule and requested that the Department extend the compliance period of the proposed regulation. Upon review, the Department agrees and has revised the express terms and RIS to reflect this. The compliance period was extended for an additional two years.

¹ This is a reference to the July 2010 NYSERDA report – Comparative Emissions Characterization of a Small-Scale Wood Chip-Fired Boiler and an Oil-Fired Boiler cited in the cost Section of the RIS.

Emission Limits:

Two commenters requested that the Department consider increasing the proposed PM limit from 0.1 lbs/mmBtu to 0.2 lbs/mmBtu. Based on the NYSERDA report, the Department believes that the 0.1 pounds per mmBtu limit is reasonable, achievable and practical.

The Department also received comments stating that the proposed particulate matter limit was significantly lower than the current regulation's particulate matter limit and that control devices would need to be installed to meet the proposed limit. The Department agrees with the comments and has increased the proposed compliance period from two years to four years to allow an adequate amount of time for affected facilities to install any necessary control equipment.

Greenhouse Gases (GHGs):

The Department received a comment stating that the proposed regulation will disproportionately and adversely affect rural areas with small commercial facilities (schools, hospitals, light manufacturing, etc.). Thus, causing an increase in GHGs. The Department responded that these types of facilities are generally located in the higher density areas of a rural community and have the highest impact on sensitive receptors like children and sick/infirm people. The Department stated that it has received complaints regarding health impacts at several wood burning systems that were installed at schools in rural areas. The Department determined that due to poor siting and design, these incorrectly installed systems were negatively impacting the health of the nearby receptors, such as school children.

The Department received a comment that the proposed regulation would cause the landfilling of wood normally burned for fuel, which would create significant amounts of methane, a GHG that is roughly 30-times more potent than CO₂. The Department responded there are other uses for wood residues besides direct burning or landfilling, such as mulching or sending the product to wood pellet manufacturing facilities. While methane is a more potent GHG than carbon dioxide, it takes many years for wood to decompose and convert to methane gas, burning wood instantaneously creates carbon dioxide emissions, and methane created in landfills can be recovered for other productive uses.

Stakeholder Notification:

In response to stakeholder notification, the Department stated that due to the unknown number of impacted facilities throughout the State, stakeholder notifications were sent to several entities representing potentially impacted facilities, such as the New York State Business Council (Business Council) and other identified entities. The Department relies on these entities to inform their members of stakeholder meetings that may affect their operations. As required, all members of the public are notified and given the opportunity to comment during the rulemaking process.

Testing/Test Methods:

The Department received a comment stating that source testing is too expensive for small systems since boilers will not perform with wood fuel outside of the required specifications and advanced boilers will operate consistently over their lifetimes with very similar combustion characteristics.

The Department responded by stating that source testing is currently required either once every five years for Title V facilities or once every ten years for State facility and registered facility permits. The Department shared the cost range provided by the United States Environmental Protection Agency (EPA) which incorporates incidental expenses such as travel. The Department also cited the importance of source testing, which may indicate equipment degradation and potential emission increases over time.

In response to a request to use alternative testing methods, the Department stated that the rule allows a source to request a Department-approved alternative testing method. One Commenter requested that the Department accept EPA Method 28 and/or EN303-5 test methods because they could be used for several units in each size category, thus reducing costs for compliance and allowing rural residents to purchase wood fueled units at a much lower cost. The Department explained that the test methods cited by the commenter are not applicable to Subpart 227-1 sources since those methods apply to residential wood burning heating system smaller than the 1 mmBtu/hr minimum heat input, which are not regulated under this rule.

Assessment of Public Comments

6 NYCRR Subpart 227-1, Stationary Combustion Installations

General:

Comment 1: The Commenter states that they were not able to find an estimate of the number of sites the proposed rule is likely to impact. (Commenter 1)

Response to comment 1: The Department of Environmental Conservation (Department) has issued permits or registrations to 51 facilities throughout the State that employ 76 wood fired emission sources. These emission sources range in size from 1.4 mmBtu/hr heat input to 855 mmBtu/hr heat input and burn wood chips, hogged wood fuel, and wood pellets. The following is a breakdown of permit types and number of sources:

Title V permits, 5 with 8 emission sources

State Facility permits, 15 with 31 emission sources

Registrations, 31 with 37 emission sources

In addition to the statewide permitting data provided in the Regulatory Impact Statement (RIS) and the Regulatory Flexibility Analysis for Small Businesses and Local Governments (RFASBLG), the Department is adding the above emission source data to the RIS and RFASBLG.

Comment 2: The Commenter states that they were not able to find any estimates as to the anticipated amount of future installations (numbers of installations per year) that the proposed rulemaking would impact. (Commenter 1)

Response to comment 2. The Department is revising Subpart 227-1 to lower PM emission limits for existing and new stationary combustion installations that are not subject to an equivalent or more stringent federal new source performance standard (NSPS) and/or national emissions standard for hazardous air pollutants (NESHAP). The Department is not able to accurately predict or anticipate the number of future installations that may be impacted by this regulation until they apply for a permit or registration from the Department.

Comment 3: The Commenter states that it is not clear how long a permit is valid. An internet search appears to indicate a permit must be renewed every 5 years. For small, advanced biomass boilers with oxygen trim systems, the renewal of permits every 5 years is an undue burden. (Commenter 1)

Response to comment 3: Permit renewal periods are based on the type of permit that the applicant has been issued. Title V permits are issued for a period of five years. State facility permits and registrations are issued for ten-year periods. The permit issuance durations apply statewide and are cited in the following sections of 6 NYCRR Part 201:

Registrations – Section 201-4.2

State Facility permits – Section 201-5.3

Title V permits – Section 201-6.4

Comment 4: The Commenter cites a January 2019 study by the State of Vermont Air Quality Division – a state where there are a considerably higher number of institutional and industrial users of automated wood heat (AWH) relative to New York State – which analyzed the particulate matter emissions resultant from all wood combustion statewide in 2015. The study showed that only 4% of all PM related to wood combustion was

resultant from institutional and industrial sized AWH units (1 mmBtu/hr – 10 mmBtu/hr) emitting PM in the 0.1 to 0.5 pound per million Btu range; permissible under current NYS regulations. Therefore, the assertion in the Job Impact Statement that revisions to Section 227-1 will result in “the mitigation of haze in the Adirondack and Catskill Parks” leading to a “positive impact on the tourism industry” is far-fetched. Tailpipe emissions alone from increased tourism would far negate any gains being made on reduced PM from existing and newly installed AWH units. Furthermore, according to a recent New York State Energy Research and Development Authority (NYSERDA) report - New York State Wood Heat Report, ninety percent of the state’s PM 2.5 emissions is generated by residential wood heating. NYSERDA has an incentive program – albeit with limited participation since its inception – that is attempting to address this concern by encouraging replacement with more efficient combustion technology. (Commenter 3)

Response to comment 4: As the Commenter notes, most PM emissions from wood firing come from the residential sector. New wood heaters in the residential sector are regulated under New Source Performance Standard (NSPS) 40 CFR 60 Subpart QQQQ. Currently, there is no NSPS for commercial/industrial/institutional wood burning sources in the 1 to 10 mmBtu/hr size range. Under Subpart 227-1, the current PM standard of 0.6 lbs/mmBtu for these size sources was developed over 40 years ago. As a result, facilities that seek to replace existing wood burning sources have no incentive to purchase state-of-the-art equipment with controls. Therefore, as emissions of PM from residential sources decreases, the percentage of the emissions from the commercial/industrial/institutional will increase, if no new requirements are promulgated.

Comment 5: The Regulatory Flexibility Analysis states “The Department does not expect any particular adverse impacts on small business and local governments throughout New York State.” It appears that these claims, as stated in the proposed rule change are erroneous. In fact, 62 sawmills, 13 schools, seven pellet mills,

three industrial users, two commercial greenhouses, and two hospitals are currently using AWH in rural communities. (Commenter 3)

Response to comment 5: The Department acknowledged, in the Rural Area Flexibility Analysis, that there would be costs incurred by facilities subject to the proposed regulation. Compliance with the proposed regulation will require the installation of control equipment. The Department believes that compliance with this proposed regulation will not adversely impact small businesses and local governments in rural areas and will improve the air quality of these areas, as stated in the Needs and Benefits section of the Regulatory Impact Statement. Also, as noted above in the response to comment 1, the Department currently permits and registers 51 total facilities throughout the State that burn wood as a fuel. The Commenter states there are 89 facilities in rural areas of the State that burn wood as a fuel. While the Commenter suggests an additional 38 wood burning facilities, it does not appear that the Commenter's list includes every Title V facility that burns wood (5 of the identified 51 permitted facilities are Title V facilities). Nonetheless, by the Commenter's account, there are nearly twice as many facilities that burn wood as fuel which may have equipment that is subject to the applicability threshold of existing Subpart 227-1. If the Commenter's estimates are correct, these additional facilities have not contacted the Department to obtain the required permits or registrations as to legally operate and may be in violation of the New York State air regulations. It is also possible that the additional facilities in the Commenter's list include wood burning sources that are below the size threshold and not subject to this rule.

Comment 6: The Commenter states that achieving compliance with proposed Subpart 227-1 would yield little to no environmental benefit and would cause undue expenses in exchange for minimal environment benefit. (Commenter 5)

Response to comment 6: The Department respectfully disagrees with the Commenter's statement. As set forth in the RIS, the Department believes that the proposed standards will significantly improve air quality both locally and regionally.

Annual Tune-ups:

Comment 7: The Commenters suggest that annual tune-ups should be the only requirement for boilers less than 2 mmBtu/hr. (Commenters 1, 2, and 4)

Response to comment 7: The current version of Subpart 227-1 regulates solid fuel fired boilers down to 1 mmBtu/hr heat input and requires those boilers to meet an emission standard. Consistent with the anti-backsliding provisions of the Clean Air Act, the Department is maintaining an emission standard for these size boilers in order to continually improve air quality throughout the State. Therefore, the Department will continue to propose a lower emissions standard as opposed to the suggestion of eliminating the emissions standard and only requiring an annual tune-up for emission sources less than 2 mmBtu/hr heat input.

Comment 8: The Commenter suggests that there should be an exemption from the annual tune-up requirement for units that are constantly monitored for efficiency and adjusted by a control room operator. This would be much more practical than an annual “tune-up”. In a similar manner, for a boiler that is equipped with “auto-trim” equipment, an “annual tune-up” has no practical meaning. (Commenter 2)

Response to comment 8: The Department does not believe that there should be an exemption from the annual tune-up requirement. The Division of Air Resources has prepared guidance document DAR-5 to outline the procedures, record keeping, and reporting requirements associated with an annual tune-up. The annual tune-up

is based on annual maintenance prescribed by the manufacturer. Based on the Department's experience regulating this source type over the years, it has established that every boiler requires an annual inspection and periodic maintenance, regardless of how frequently those boilers are monitored or what additional components they may be equipped with. The annual tune-up requirements ensure that the manufacturer's recommended annual inspection and maintenance procedures are followed and performed.

Comment 9: The Commenter requests that emission sources less than 2 mmBtu/hr heat input be exempt from field testing of emissions. Emissions performance for small, dry wood chip or wood pellet boilers that exhibit passing test results in a laboratory will perform satisfactorily for life. (Commenter 4)

Response to comment 9: The Department does not agree. The comment indicates that emission sources of this size will emit at the same level throughout their operating life and, thus, performance testing should not be required. Emission sources include mechanical components that will inevitably wear out over time, causing the performance of this equipment to degrade throughout its lifespan. The degradation of equipment may lead to less efficient operation and increased emissions from the source, regardless of size. Therefore, periodic emissions testing not only demonstrates that the source is complying with the required emission standards, but also indicates how much a source's performance has degraded from the time it was originally installed.

Applicability:

Comment 10: The Commenter points out that the proposed rule states that units subject to NSPS or NESHAP are exempt from this rulemaking. There are two definitions for exempt units under the NESHAP from Coal and Oil-Fired Steam Generating Units (40 CFR Part 63 Subpart UUUUU). The commenter requests the exemptions

for limited-use, oil-fired and for natural gas-fired units covered under the NESHAP be explicitly referenced in the express terms for this rulemaking. (Commenter 2)

Response to comment 10: The Department does not believe that exemptions for limited-use oil-fired and natural gas-fired units covered under the NESHAP need to be explicitly referenced in the express terms of this rulemaking. The intent of the exemption from Subpart 227-1 was to remove duplicate regulatory requirements. The Department determined that facilities which are already required to meet equivalent or more stringent particulate matter emission standards under an NSPS or NESHAP would no longer be subject to the requirements of Subpart 227-1. The Department is not, therefore, incorporating portions (including exemptions) of the federal NSPS or NESHAP rules into Subpart 227-1.

Comment 11: The Commenter states that under 40 CFR §75.14(c), the owner or operator of an affected unit that qualifies as gas-fired, as defined in 40 CFR §72.2 of this part, is exempt from the opacity monitoring requirements. (Commenter 2)

Response to comment 11: The Subpart 227-1 opacity standard applies to all stationary combustion installations, regardless of the type of fuel combusted. This opacity requirement has been in effect since the original regulation was promulgated on August 12, 1972.

Comment 12: The Commenter notes that there is a significant inconsistency between the RIS and the express terms of the rule. The second paragraph of the RIS, states that the proposed regulations will “lower PM emission limits for existing and new stationary combustion installations that either predate, or are not subject to, a federal NSPS and/or NESHAP.” However, Proposed Subpart 227-1 would lower PM emissions limits for all “stationary combustion installations except . . . those . . . that are subject to NSPS . . . and/or NESHAP . . . ,

where the particulate matter standards established in the above regulations are equal to or more stringent than the particulate matter emission standards established in proposed Subpart 227-1.” (Commenter 5)

Response to comment 12: As part of this rulemaking, the Department is eliminating the duplication of requirements in Subpart 227-1 from those in federal regulations. As stated in the express terms, any emission source at an affected facility that is subject to an NSPS or NESHAP which requires equivalent or more stringent emission standards than those proposed in Subpart 227-1, is no longer subject to the requirements of Subpart 227-1. The Department agrees that this qualifier was not carried over into the RIS, which will be revised to include the referenced qualifying language.

Cost:

Comment 13: The Commenters state that it seems excessively harsh and unreasonable for all existing wood-fired systems to meet the required emission limit within two years of adoption of the proposed rule. Many existing installations are in confined spaces that were not originally designed to accommodate bag filtration or electrostatic precipitation immediately adjacent to the boiler. These installations will involve expensive retrofits that will add cost well beyond the cost of the emission control device itself. Many of these systems were financed based on assumptions about capital cost and operating cost savings that provided attractive payback economics. These investments were not made with the expectation that they would later have to add emission controls that can exceed the original capital cost of the boiler system. In such cases, owners may be forced to revert to more expensive fuels like oil or propane. (Commenters 3 and 4)

Response to comment 13: Based on the comment above, the Department agrees that the proposed two-year compliance requirement should be revised to account for the retrofitting scenario discussed. The Department

understands that the lengthy review process which may include engineering review, bid submission/selection, installation, and shakedown of installed control equipment could extend a project beyond two years. Therefore, the Department has decided to extend the required compliance period from two years to four years for the retrofitting of controls for existing emission sources subject to the proposed revisions.

Comment 14: The Commenters state that the proposed regulations fail to acknowledge the impact it will have on rural regions of New York. The proposed regulations will cause facilities to convert from current fuel types to more expensive heating oil and propane. For wood manufacturing industries located in rural New York that utilize manufacturing residues to produce heat energy for their plants, this regulation will have a significant cost impact at a time when many are struggling to remain competitive in a global wood product marketplace.

(Commenters 1, 3, and 4)

Response to comment 14: The Department acknowledges that there is a compliance cost associated with the proposed emission standards required by Subpart 227-1. The Department outlines the costs of control equipment in the RIS. The Department did not provide cost estimates for switching from wood fuel to fossil fuels like oil or propane. The removal and installation costs of such an undertaking, as well as the installation of fuel storage tanks and fuel lines, would most likely cost more than the installation of controls on the existing source. The commenters suggest that fossil fuel would be more expensive than the wood fuel. If converting from wood to fossil fuel would cost a facility more than solely adding control equipment to meet the proposed emission standard, it would seem unlikely for this conversion to occur.

Comment 15: The Department has attempted to predict costs for certain upgrades to equipment, but the public deserves to know what the costs of impacts are compared to the costs of anticipated equipment upgrades and market impact. (Commenter 1)

Response to comment 15: The Department is required under the State Administrative Procedures Act (SAPA) to estimate potential cost impacts that may occur as a result of this rulemaking. The cost figures are based on available industry information for control equipment that may need to be installed to meet the proposed emission limit in Subpart 227-1. These cost figures are based on vendor data from a NYSERDA report¹ (as noted in the RIS). SAPA does not require the Department to anticipate or estimate market impacts.

Comment 16: The Commenters state that the installed electrostatic precipitator (ESP) cost range listed appears to be significantly lower than would be expected for most new wood heating systems in the size range of over 1 mmBtu/hr and under 10 mmBtu/hr input. They also state that the cost for installation of an ESP at an existing facility would be expected to be on the order of 50-100% higher than the range of costs shown in the table for wood heating installations over 1 mmBtu/hr and under 10 mmBtu/hr input. (Commenter 3 and 4)

Response to comment 16: The cost figures cited in the RIS are based on vendor data from the NYSERDA report¹.

Comment 17: The Commenter states that for wood boiler installations over 1 mmBtu/hr and under 10 mmBtu/hr input, the cost range presented as the installed cost of a fabric filter at an existing facility may be significantly lower than actual costs depending on the facility, space available, flue gas temperatures, and other site specific factors. (Commenter 3)

¹ This is a reference to the July 2010 NYSERDA report – Comparative Emissions Characterization of a Small-Scale Wood Chip-Fired Boiler and an Oil-Fired Boiler cited in the cost Section of the RIS.

Response to comment 17: Please note that the cost figures cited in the RIS are based on vendor data from the NYSERDA report¹. It is impossible for the Department to accurately predict the cost necessary for each individual facility installation needed to comply with this proposed regulation. The Department understands that installation costs will likely vary on an individual facility basis, depending on several facility specific factors, and has estimated what it believes to be a reasonable range of costs for various scenarios, based on available information.

Comment 18: The Commenter states that achieving compliance with proposed Subpart 227-1 would impose significant costs. The commenter also states that they already have a multicyclone mechanical dust collector and a dual-throat venturi scrubber to limit particulate emissions from their wood waste boiler. To consistently achieve emissions of less than 0.1 pounds per million Btu, the commenter would have to further install an ESP. The Commenter estimates the costs to be higher than those cited in the Department's RIS. The commenter also states that they would incur significantly increased annual operating costs such as increased electricity usage. (Commenter 5)

Response to comment 18: The Department understands that there is a cost associated with complying with the proposed emission standards. The Department points out that the commenter produces a portion of its own electricity. Thus, the increased cost of electricity needed for an ESP, specifically for this facility, is much lower than power purchased from the grid. The Department is aware of one other boiler with a similar configuration in New York State. This boiler has controls installed that allow it to meet an emission standard below the new emission standard proposed in Subpart 227-1.

Comment 19: The Commenter states that if the compliance costs far exceed the value of their boiler, they will be forced to consider abandoning the boiler, which uses renewable energy as currently configured, in favor of exclusively relying on fossil fuels. (Commenter 5)

Response to comment 19: The Department realizes that each affected installation will need to individually evaluate the options available to them and determine the best course of action necessary to achieve compliance with the proposed emission standards. Ultimately, the facility owners and operators will make appropriate decisions to meet the needs of their operation. The intent of this rulemaking is not to force a shift from renewable energy to fossil fuel combustion. The Department does not believe that this shift will occur.

Emission Limits:

Comment 20: The Commenter notes that proposed Section 227-1.3(a) sets particulate emission limits for two types of combustion installations: 1) units which fire oil; and, 2) units that fire “oil in combination with other liquid or gaseous fuels”. The commenter interprets this phrase to mean that the Department is establishing particulate emission limits for units that burn oil only and for units that co-fire oil and gas and is not establishing standards for units that combust natural gas only, even if that unit has the capability to burn oil at other times. (Commenter 2)

Response to comment 20: The intent of this regulation is to establish a particulate matter emission limit during periods of oil firing. When an emission source fires natural gas only, it is not subject to the particulate matter emission limit in Subpart 227-1. However, if the source fires oil as a back-up fuel, it is subject to the limit in Subpart 227-1.

Comment 21: The Commenter requests that the Department consider increasing the PM2.5 threshold to 0.2 lbs/mmBtu for new installations in regions of the State that are in attainment of the national ambient air quality standard (NAAQS) for PM2.5. (Commenter 4)

Response to comment 21: Please note that the proposed rule is intended to regulate particulate matter and not PM2.5. Also, there are currently no areas in New York State that are in non-attainment of the particulate matter NAAQS.

Comment 22: The Commenter requests that existing wood-fueled boiler systems subject to the proposed regulation be grandfathered, if they can demonstrate by emissions testing, within two years of the promulgation of this regulation, that they operate below the 0.2 lbs/mmBtu PM2.5 level. These systems are relatively few in number and almost entirely located in rural regions of the state. (Commenter 4)

Response to comment 22: The proposed rule regulates particulate matter and not PM 2.5. The Department will not be including "grandfathering" language into the proposed revisions. However, the Department has decided to increase the initial compliance period for existing emission sources subject to the proposed revision from two years to four years. Please see the response to Comment 13. The Department also points out that neighboring states like Massachusetts and Connecticut already have implemented a limit of 0.1 lb/mmBtu for small solid fuel fired boilers.

Comment 23: The Commenter states that emission control for existing and new boilers using wood/lumber manufacturing residues will be required to be a bag house, ESP, or other backend emission control beyond the level achievable with a cyclone or multi-clone. There may be a limited number of exceptions to this. (Commenter 3)

Response to comment 23: The Department understands that each facility will need to determine, on a case-by-case basis, how it will achieve compliance with the proposed emission standard. Depending on the facility's configuration, this may or may not require the addition of specific control devices.

Comment 24: The Commenter states that the Proposed Subpart 227-1 significantly lowers the particulate emissions limitation that currently applies to their wood waste boiler. The commenter also states that they must currently achieve a particulate emissions rate of no more than 0.3 pounds per million Btu under the existing Subpart 227-1. Under the proposed regulations, any stationary combustion installation (oil may also be burned during periods of natural gas curtailment) with a maximum heat input capacity greater than one million Btu per hour that fires solid fuel and that is not subject to a more stringent NSPS or NESHAP must achieve a particulate emissions rate of no more than 0.1 pounds per million Btu. This would represent a 66 percent decrease in the current particulate emissions limitation. (Commenter 5)

Response to comment 24: The Department agrees with the Commenter that the proposed emission standards would significantly decrease the allowable particulate matter emissions from wood fuel firing emission sources. As stated in the RIS, the revisions to Subpart 227-1 are intended to reduce the emission of PM that are the precursors of PM-2.5 below the present levels. Regulatory efforts such as the NSPS and NESHAP programs, past NYS and federal fuel PM emission limits for stationary and mobile sources, and efforts like the Clean Air Interstate Rule have had a significant beneficial effect on air quality and public health. The proposed PM limits in this rule are expected to further reduce monitored values of PM-2.5, and to help New York State maintain attainment of the NAAQS.

Comment 25: The Commenter states that they are subject to a NESHAP for particulate emissions which is not “more stringent” than Proposed Subpart 227-1. To the extent the Department meant to only subject otherwise-unregulated sources to the 0.1 lbs/mmBtu limit, the regulations should be revised to omit the final clause of Proposed Subpart 227-1.2(a). For the reasons that follow, the commenter strongly encourages the Department to do so. Proposed Subpart 227-1 is far more restrictive than the comparable NESHAP standard for hybrid suspension/grate biomass-fired boilers like the commenter's wood waste boiler. Currently, New York’s particulate emissions limitation for stationary combustion installations of 0.3 lbs/mmBtu is already significantly lower than the equivalent federal standard with respect to the subcategory applicable to the commenter's wood waste boiler. (Commenter 5)

Response to comment 25: As stated in the response to Comment 12, the intent of this rulemaking is to exempt emission sources from proposed Subpart 227-1 that meet equivalent or more stringent emission standards. In this case, where proposed Subpart 227-1 is more stringent than the comparable NESHAP, the affected source will be required to meet the proposed emission standard provided in New York State’s Subpart 227-1 regulation.

Comment 26: The Commenter states that its most recent stack tests show it is already operating well below the current 0.3 lbs/mmBtu limitation and is even achieving the proposed 0.1 lbs/mmBtu limitation most of the time. Nevertheless, to consistently achieve compliance with the proposed emissions limitation by an acceptable margin, the commenter would be required to install an ESP and incur all of the attendant costs. (Commenter 5)

Response to comment 26: The Department requires that affected sources demonstrate that they can consistently achieve emission rates below the proposed standards when operating. Based on the Department's review of previous test results, recent stack tests have shown that the facility has been able to achieve compliance with the

proposed 0.1 lb/mmBtu PM limit. The Department believes that the facility can consistently meet the proposed limit without requiring additional emission controls. However, if in the future, the equipment in place is unable to consistently meet the standard, the facility would need to re-evaluate its boiler operations to determine the best course of action to meet the standard. This includes, but is not limited to, adjusting the current boiler operating scenarios, adjusting the existing control devices, and/or the installation of additional control equipment. If additional controls are required, the Department understands that there are costs associated with installing, operating, and maintaining control equipment.

Greenhouse Gases (GHGs):

Comment 27: The Commenter states that the proposed rule will inhibit the adoption of low-carbon automated biomass thermal technologies at commercial and institutional facilities throughout rural forested regions in New York. Furthermore, facilities in rural areas already utilizing AWH technology will suffer from this regulation coupled with the projected implementation of the Climate Leadership & Community Protection Act – legislation that does not consider wood as a renewable fuel. Now is not the time to make heating with regionally produced, low carbon wood fuel more expensive in the name of small gains on particulate matter emissions that go above and beyond the current NAAQS. (Commenter 3)

Response to comment 27: As noted in the response to Comment 4, the majority of wood fired in rural areas of New York State occurs in residential wood burning sources. These sources are not subject to the proposed Subpart 227-1 regulation. Also, as stated in the response to Comment 14, the Department does not believe that it would be economically viable to convert back to fossil fuels instead of adding particulate matter controls to a facility's existing wood burning source(s). The Department neither opposes nor advocates the use of any specific type of fuel throughout New York State in order to comply with the proposed Subpart 227-1 regulation.

The Department's goal and mission is to protect the health and welfare of the citizens of the State without bias by adequately implementing lower emission standards from various sectors across the state.

Comment 28: The Commenter states that the proposed regulation will disproportionately and adversely affect rural areas (with no access to a natural gas pipeline) where #2 and #6 fuel oil, liquid natural gas, or propane are used by a large majority of community-scale and small commercial facilities (schools, hospitals, light manufacturing, etc.). (Commenter 3)

Response to comment 28: As the Commenter points out, many rural schools and hospitals may look to install wood burning heating systems. These types of facilities are generally located in the higher density areas of a rural community and have the highest impact on sensitive receptors like children and sick/infirm people. The Department has received complaints from citizens that live or work nearby and from parents of children that attended such schools. Complaints have included, but are not limited to, smoke emissions, wood burning odors, and difficulty breathing at several of these wood burning systems that were installed at schools in rural areas. After investigating some of these complaints, the Department determined that due to poor siting and design these incorrectly installed systems had the likelihood of causing an increased pollutant exposure to the nearby receptors (i.e. school children, employees, and nearby residents).

Comment 29: Wood residues currently used for energy will be landfilled, creating significant amounts of methane, a GHG that is roughly 30-times more potent than CO₂. (Commenter 3)

Response to comment 29: The Department notes that there are other uses for wood residues besides direct burning or landfilling. The residues may be used for mulch or sent to wood pellet manufacturing facilities. The Department does realize that while methane is a more potent GHG than CO₂, it takes many years for wood to decompose and convert to methane gas, while burning wood instantaneously creates CO₂ emissions. The

methane created in landfills can be recovered for other productive uses and may not necessarily be directly emitted into the atmosphere as air pollution.

Stakeholder Notification:

Comment 30: Two of the Commenters stated that they did not receive notification of stakeholder meeting for Subpart 227-1. (Commenters 1 and 4)

Response to comment 30: The Commenters are correct that the stakeholder letter was not directly sent to them. Given the unknown number of interested entities throughout the State, the Department includes the New York State Business Council (Business Council) on its stakeholder meeting letters. The Department relies on the Business Council to inform any members, that the Department may not have specifically included, of stakeholder meetings which may affect their operations.

Comment 31: The Commenter requests the Department prove that an actual attempt at outreach was made to industry. It is surprising that a rule reaching back to impact existing installations would have withstood initial comments. (Commenter 1)

Response to comment 31: Below is the list of organizations that the stakeholder meeting letter was sent to:

Independent Power Producers of New York, Inc., New York Power Authority, Partnership for Policy Integrity (PFPI), Earth Justice Northeast Regional Office, Sierra Club, Association of Towns, Business Council of New York State, Inc., Coalition Helping Organize a Kleaner Environment, American Lung Association, Natural

Resources Defense Council, New York Public Interest Research Group, Environmental Advocates of New York, Trinity Consultants, NYS Department of Budget

Testing/Test Methods:

Comment 32: The Commenter states that source testing is simply too expensive for these small systems. Boilers with advanced oxygen trim systems will not operate with failed trim systems. These boilers will also not perform with wood fuel outside of the required specifications. Advanced boilers will operate consistently over their lifetimes with very similar combustion characteristics. (Commenter 1)

Response to comment 32: Source testing is required either once every five years for Title V facilities or once every ten years for State facility and registered facility permits. The cost of a basic Method 5 test is approximately \$5,000.00 to \$10,000.00. This cost range was provided by the United States Environmental Protection Agency (EPA) and incorporates incidental expenses such as travel. Please also see the response to Comment 9 which discusses how source testing may indicate equipment degradation and potential emission increases over time.

Comment 33: The Commenter is concerned with the proposed rule amendment that all biomass boilers are tested with Method 5 or "any other method acceptable to the department and the administrator for determining the appropriate particulate matter emission limit..." Also, of concern is that other methods of testing that are yet undetermined will be open to subjective judgment. This creates expensive uncertainty and risk for anyone considering investing in a modern wood heat system subject to this regulation. (Commenter 4)

Response to comment 33: The Department does not believe that the proposed regulation creates any unnecessary expense or uncertainty and risk to an applicant that is considering investing in a modern wood heat system. If the applicant chooses to use an alternative method to determine compliance with the particulate matter limits of Subpart 227-1, that method must be approved by the Department. Once the Department has approved an alternative test method, any affected source owner may propose to use that test method going forward, without having to go through additional Department review. Please note that the use of an alternative method is the applicant's choice and not a requirement.

Comment 34: For small, advanced biomass boilers with oxygen trim systems, the renewal of a permit every five years with required stack testing is an undue burden. The tests are simply too expensive for these small systems. Boilers with advanced oxygen trim systems will not operate with failed trim systems. These boilers will also not perform with wood fuel outside of the required specifications. Advanced boilers will operate consistently over their lifetimes with very similar combustion characteristics. (Commenter 4)

Response to comment 34: The frequency of required emission testing is based on the type of air permit held by a facility. Title V facilities with an affected emission source would be required to test the source once every five years. Small facilities typically have either a registration or State facility permit and are only required to test once every ten years. Please see the response to Comment 3.

Comment 35: The Commenter states that the Department should, instead of waiting to certify/accept more test methods on a case-by-case basis, accept EPA Method 28 and/or EN303-5 tests performed in a laboratory prior to the sale of the boiler. Many boilers at the smaller end of the impacted range are regular production boilers. As with boilers that fall under Subpart QQQQ of the EPA NSPS for wood heaters, many of the boilers that are greater than 1 mm Btu/hr will already have reliable emissions testing available. It is likely that the laboratory

testing will also be more accurate. Furthermore, laboratory testing can stand for several units in each size category, thus reducing costs for compliance substantially. This will allow rural residents who are interested in wood fuel to purchase at much lower costs. (Commenter 4)

Response to comment 35: Proposed Subpart 227-1 regulates solid fuel fired stationary combustion installations greater than 1 mmBtu/hr heat input. This regulation does not apply to private residents who are interested in purchasing a wood burning heating system for use in their home. The regulations that the commenter cites are for small, residential wood-fired heating systems. These wood heating systems are much smaller than the 1 mmBtu/hr heat input requirements of proposed Subpart 227-1. Therefore, this test method and the regulations cited by the commenter are not relevant to this rulemaking, as they do not apply to the same sources that proposed Subpart 227-1 intends to regulate.

Commenter List:

1. Tarm Biomass
2. Environmental Energy Alliance of New York
3. Collin Miller
4. Empire State Forest Products Association & New York Bioenergy Association
5. Finch Paper/McNamee Lochner P.C.