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ENVIRONMENTAL PROTECTION

AIR QUALITY, ENERGY, AND SUSTAINABILITY

DIVISION OF AIR QUALITY

Air Pollution Control

Fine Particles (PM_{2.5}) in Air Permitting, Sulfur (Startup/Shutdown/Malfunction (SSM) Exemption), and Emission Statements

Proposed Amendments: N.J.A.C. 7:27-7.2, 8.1, 7:27-8 Appendix 1 Table A, 18.1, 18.2, 18.4, 18.5, 18.7, 21.1, 21.3, 21.4, 21.5, 21.8, 22.1, 22.2, 22.8, and 7:27-22 Appendix Table A

Authorized By: Bob Martin, Commissioner, Department of Environmental Protection.

Authority: N.J.S.A. 13:1B-3.e, 13:1D-9 and 26:2C-1 et seq., in particular, 26:2C-9.2.

Calendar Reference: See Summary below for explanation of exception to calendar requirement.

DEP Docket Number: 02-17-02.

Proposal Number: PRN 2017-040.

A **public hearing** concerning this proposal and a proposed State Implementation Plan (SIP) revision, represented by this proposal, will be held on May 9, 2017, at 10:00 A.M. at:

New Jersey Department of Environmental Protection

Hearing Room, 1st Floor

401 East State Street

Trenton, New Jersey 08625

Directions to the hearing room may be found at the New Jersey Department of Environmental Protection's (Department's) website address at www.nj.gov/dep/where.htm.

Submit comments by close of business on May 19, 2017, electronically at www.nj.gov/dep/rules/comments. Each comment should be identified by the applicable N.J.A.C. citation, with the commenter's name and affiliation following the comment.

The Department encourages electronic submittal of comments. In the alternative, comments may be submitted on paper to:

Alice A. Previte, Esq.

Attention: DEP Docket Number 02-17-02

Office of Legal Affairs

Department of Environmental Protection

401 East State Street, 7th Floor

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PO Box 402

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Written comments may also be submitted at the public hearing. It is requested (but not required) that anyone providing oral testimony at the public hearing provide a copy of any prepared text to the stenographer at the hearing.

The proposed amendments will become operative 60 days after their adoption (see N.J.S.A. 26:2C-8). The rule proposal may be viewed or downloaded from the Department's website at <http://www.nj.gov/dep/rules>.

The agency proposal follows.

Summary

As the Department has provided a 60-day comment period on this notice of proposal, this notice is excepted from the rulemaking calendar requirement pursuant to N.J.A.C. 1:30-3.3(a)5.

The Department is proposing amendments to its rules at N.J.A.C. 7:27-18, Control and Prohibition of Air Pollution from New or Altered Sources Affecting Ambient Air Quality (Emission Offset Rules), to add the Federal New Source Review (NSR) requirements that implement the National Ambient Air Quality Standards (NAAQS) for fine particles (PM_{2.5}). The rulemaking includes related amendments to the Department's permitting rules at N.J.A.C. 7:27-8, Permits and Certificates for Minor Facilities and Major Facilities without an Operating Permit, (also referred to as the preconstruction permit rules), and N.J.A.C. 7:27-22, Operating Permits (also referred to as the operating permit rules).

In addition to amendments related to the PM_{2.5} NSR requirements, the Department proposes amendments to the Sulfur rules at N.J.A.C. 7:27-7, and the Emission Statements rules at N.J.A.C. 7:27-21. In the Sulfur rules, the Department proposes to delete the exemption for emergency releases from pressure-relieving stacks, to be consistent with existing Federal requirements. Proposed amendments to the Emission Statements rules require the reporting of PM_{2.5} and ammonia (NH₃) emissions at the source level, as opposed to the facility-wide level required under the existing rule, to be consistent with the Federal Air Emissions Reporting Requirements (AERR). A proposed amendment eliminates the option for permittees to submit emission statements electronically through the use of e-mail, in favor of the option to submit these statements through the Department's internet portal, NJDEP Online (www.njdeponline.com). The portal is a secure method, in contrast to the less secure e-mail submission under the existing rules. The proposed rule is consistent with the Federal Cross-

Media Electronic Reporting Rule (CROMERR). Each of the proposed amendments is discussed further below.

Fine Particles (PM_{2.5})

Stationary sources of air pollution in New Jersey are subject to Federal and State requirements through the Department's permitting program, which addresses both preconstruction permits and operating permits for major and minor sources of air pollution. In the absence of State rules, sources may be subject to Federal regulations and requirements, as described below. The Department regulates emissions of criteria pollutants through its own rules and by implementing Federal requirements; however, the Department's existing permitting rules do not specifically address PM_{2.5} and its precursors. A criteria pollutant is an air pollutant that the United States Environmental Protection Agency (EPA) has identified as having adverse health impacts and for which EPA has established or plans to establish a NAAQS. After establishing NAAQS for PM_{2.5}, EPA promulgated PM_{2.5} permitting requirements, which the proposed amendments address. The proposed amendments add the Federal PM_{2.5} requirements to the Department's rules at N.J.A.C. 7:27-8, 18, and 22.

EPA actions related to PM_{2.5} emissions

NAAQS for PM_{2.5} and New Source Review (NSR)

In 1997, EPA first established annual and 24-hour NAAQS for PM_{2.5}. PM_{2.5} includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 2.5 microns, including condensable particulate matter. The previously established NAAQS for PM₁₀, particulate matter having an aerodynamic diameter less than or equal to a nominal 10 microns, included, but did not specifically address the smaller PM_{2.5} particles. If a particle is less than 2.5

microns in diameter, it also is less than 10 microns in diameter, meaning that PM_{2.5} is a subset of the PM₁₀ that a facility emits. PM_{2.5} is emitted to the atmosphere in two ways: primary PM_{2.5} emissions are discharged directly from a stack; and secondary PM_{2.5} emissions are formed downwind from the stack when PM_{2.5} precursor gases are transformed through physical or chemical processes to fine particulates. Both nitrogen oxides (NO_x) and sulfur dioxide (SO₂) are PM_{2.5} precursors and are converted in the atmosphere to PM_{2.5} nitrates and sulfates, respectively. Combustion sources emit both primary PM_{2.5} emissions and PM_{2.5} precursors. Additional discussion concerning these precursors is available at 73 Fed. Reg. 28321, at 28326 through 28328, May 16, 2008. The PM_{2.5} NAAQS were set at 15 micrograms per cubic meter (µg/m³) for the annual standard and 65 µg/m³ for the 24-hour standard. In 2006, EPA revised the 24-hour NAAQS for PM_{2.5} from 65 µg/m³ to 35 µg/m³ (71 Fed. Reg. 61144, October 17, 2006). In 2013, EPA revised the annual PM_{2.5} NAAQS from 15 µg/m³ to 12 µg/m³ (78 Fed. Reg. 3086, January 15, 2013). Accordingly, the PM_{2.5} NAAQS at the time of this notice of proposal are 35 µg/m³ for the 24-hour standard, and 12 µg/m³ for the annual standard.

EPA developed the NSR program to ensure that the construction and modification of a source do not adversely impact the ambient levels of a criteria pollutant for which EPA established a NAAQS. As part of the PM_{2.5} NAAQS implementation, EPA expanded NSR requirements to include PM_{2.5} and its precursors (71 Fed. Reg. 28321, May 16, 2008); promulgated PM_{2.5} regulations on increments, significant impact levels (SILs), and significant monitoring concentrations (SMC) (75 Fed. Reg. 64864, October 20, 2010); and promulgated regulations on PM_{2.5} stack test methods for stationary sources of air pollution (75 Fed. Reg. 80118, December 21, 2010). The proposed amendments conform the State's rules to the EPA's NSR requirements for PM_{2.5}. The NSR program is discussed further below.

Section 110 of the Clean Air Act (CAA), 42 U.S.C. § 7410, gives each state primary responsibility for ensuring that the state achieves and maintains attainment of the NAAQS, and requires each state to submit for EPA approval a State Implementation Plan (SIP) that provides for, among other things, the attainment and maintenance of these Federal standards through control programs directed at sources of the pollutants. Although states are primarily responsible, if a state does not promulgate permitting rules that EPA determines are necessary in order to achieve and maintain attainment of NAAQS, then EPA will step in to ensure its requirements are met. For example, if the Department does not amend its rules to include the NSR provisions related to PM_{2.5}, EPA would review each permit application to ensure that the application meets the Federal NSR requirements for PM_{2.5}. The Department would remain responsible for reviewing the same permit applications to ensure that they meet the requirements for other contaminants.

EPA designation of New Jersey as in attainment of PM_{2.5} NAAQS

After it establishes a NAAQS, EPA evaluates each county within a state to determine if the air quality meets the standard. EPA then designates an area, comprised of one or more counties and sometimes covering parts of two or more states, as attainment or nonattainment for the NAAQS. A nonattainment area is an EPA-designated area that does not meet the NAAQS in question. An attainment area is an EPA-designated area that does meet the NAAQS. If there is insufficient data for EPA to determine attainment or nonattainment, the area is designated unclassifiable for that NAAQS. As of July 15, 2008 (the effective date of the first set of Federal PM_{2.5} NSR regulations), 13 New Jersey counties were nonattainment for the 1997 and 2006 NAAQS for PM_{2.5}. Eight counties were in attainment. On August 13, 2013 (effective September 4, 2013), EPA redesignated the 13 counties to attainment for the 1997 annual

standard (15 $\mu\text{g}/\text{m}^3$) and the 2006 24-hour standard (35 $\mu\text{g}/\text{m}^3$) (78 Fed. Reg. 54396, September 4, 2013), meaning that the entire State was designated in attainment for those $\text{PM}_{2.5}$ NAAQS. In January 2015, EPA designated the entire State as attainment for the 2013 annual NAAQS for $\text{PM}_{2.5}$ (12 $\mu\text{g}/\text{m}^3$) (80 Fed. Reg. 2206, January 15, 2015). Therefore, all counties in the State are in attainment for the NAAQS for $\text{PM}_{2.5}$ in effect at the time of this notice of proposal.

The New Source Review (NSR) program

As mentioned above, the Federal NSR program is a preconstruction permitting program designed to ensure that the construction or modification of a stationary source of air pollution (source) does not interfere with the attainment or maintenance of a NAAQS or violate the control strategy in a nonattainment area.

New Jersey addresses the Federal regulation of emissions from stationary sources of air pollution, including the construction and modification of these sources, through its preconstruction permit rules and its operating permit rules. The issuance of an operating permit to a major facility in New Jersey is subject to Title V of the Clean Air Act, 42 U.S.C. §§ 7661-7661f, and to New Jersey's Federally enforceable Title V operating permit program rules at N.J.A.C. 7:27-22. A major facility is one that meets the Federal definition of a major source and has the potential to emit any of the air contaminants listed in the definition of "major facility" at N.J.A.C. 7:27-22.1 at or above the threshold established for that pollutant. EPA NSR regulations use the term "source" to refer a facility, building, structure, or installation that emits or may emit an air contaminant. The Department's rules use the term "source" to refer to one or more pieces of equipment, source operations, or processes; a facility is comprised of one or more "sources." Because New Jersey's operating permit rules at N.J.A.C. 7:27-22 address both preconstruction, as well as operating permit requirements, operating permits in New Jersey include the

preconstruction permit requirements of nonattainment NSR and prevention of significant deterioration regulations, the first two components of NSR, discussed below. An operating permit contains all applicable State and Federal requirements, including emission limitations and other SIP requirements. Consistent with Federal Title V permit requirements, operating permits issued by the Department must contain the monitoring, recordkeeping, and reporting requirements at N.J.A.C. 7:27-22.18 and 22.19 to ensure that a facility's source operations comply with the emission limitations.

The Department's preconstruction permit rules at N.J.A.C. 7:27-8 address emission levels of pollutants from sources at minor facilities and sources at major facilities for which operating permits are not required or have not yet been issued. These rules require compliance with advances in the art of air pollution control referred to as "state of the art" (or SOTA) for regulated air pollutants that could be emitted in an amount greater than the threshold established for that pollutant. Air quality impact modeling of criteria pollutants may also be required to ensure the NAAQS are not exceeded. The permits issued pursuant to N.J.A.C. 7:27-8 address requirements of Federal regulations regarding the component of NSR referred to as "minor NSR," as described below.

Three components of NSR and their implementation in New Jersey

The NSR program has three components: nonattainment NSR (NNSR); prevention of significant deterioration (PSD); and minor NSR, as described more fully below. Whether the requirements of a particular component of the NSR program apply to a source depends on several factors, including a source's potential to emit a criteria pollutant, whether the source is located in an area that is designated as attainment or nonattainment for that criteria pollutant, whether the emissions from the new source or modification of an existing source exceeds the

major source or modification threshold for that criteria pollutant, and what impact, if any, the emissions would have on the attainment or maintenance of the NAAQS in or outside of the area in which the source is located.

Nonattainment New Source Review (NNSR)

The first component of the NSR program, NNSR, applies when a major stationary source (major source) is constructed in a nonattainment area, or when a source that is located in a nonattainment area undergoes a major modification. NNSR can also apply to a major source or major modification proposed in an attainment or unclassifiable area if it would significantly affect a nonattainment area or cause a violation of the NAAQS in an attainment area.

Under the Federal regulations, a stationary source is a major source if it has the potential to emit a specific air contaminant at or above the major source threshold established for that pollutant. (See 40 CFR 51.165(a)(1)(iv) and 40 CFR Part 51, Appendix S to Part 51 - Emission Offset Interpretative Ruling Appendix S (Appendix S) at II.A.4.) EPA defines major modification at 40 CFR 51.165(a)(1)(v)(A) and at Appendix S at II.A.5 as a modification that would result in a significant emission increase of a criteria pollutant and a significant net emissions increase of that pollutant from the source. Under the Federal NNSR rules, a facility located in a nonattainment area must obtain a preconstruction permit if it is a new major source, or if the proposed or actual emissions from a modified source exceed the applicable thresholds at 40 CFR 51.165 and Appendix S, which govern state NNSR programs and SIPs.

When EPA revises a NAAQS for a criteria pollutant, a state with a nonattainment area needs to develop an NNSR permit program, which must be approved by EPA as part of the state's SIP. Amending a SIP, however, takes time. Between the time EPA designates an area as nonattainment and EPA approves a state's compliant NNSR program for the pollutant in

question, Appendix S governs a facility applying for a permit to construct and operate. (See 40 CFR 52.24(k).) Appendix S establishes EPA's Interpretative Ruling on the preconstruction review requirements for stationary sources of air pollution. To obtain a permit that complies with the Appendix S requirements, an applicant must show that the lowest achievable emission rate (LAER) control technology will be installed; certify that all major sources owned or operated by the applicant in the state are in compliance with all applicable state rules and Federal regulations; conduct an alternative siting analysis, which demonstrates that the benefits of the proposed construction or modification outweigh its environmental and social costs; and secure creditable emission reductions to offset increased emissions.

The Department codified these Federal NNSR requirements for criteria pollutants other than PM_{2.5} at N.J.A.C. 7:27-18, the Emission Offset rules, which are part of the State's SIP. The Emission Offset rules apply to a source located in either a nonattainment area or an attainment area. The LAER and certification requirements are at N.J.A.C. 7:27-18.3(b), the requirement for alternative siting analysis is at N.J.A.C. 7:27-18.3(c)2, and the offset requirements are at N.J.A.C. 7:27-18.3(c)1, (d), (e), and (f), together ensuring NNSR compliance.

The Emission Offset rules are designed to ensure that industrial growth and development may occur even in the areas where the ambient air quality does not meet one or more NAAQS, or where there may be a significant increase in emissions of a criteria pollutant. These rules also impose conditions upon growth and development to ensure that new construction and modification of sources of air contaminant emissions do not result in increased emissions that could cause a NAAQS violation in an attainment area or significantly exacerbate a violation of a NAAQS in a nonattainment area. To serve this purpose, the Emission Offset rules require a source subject to the permitting requirements at N.J.A.C. 7:27-8 or 22 that applies for a permit to

construct, reconstruct, or modify control apparatus or equipment at a facility to meet certain conditions to avoid further degradation of air quality. These conditions include the requirement that the facility reduce emissions if the proposed project would result in a significant net emission increase of a pollutant or would cause a violation of a NAAQS. Specifically, a facility to which these rules apply must obtain the permanent reduction of emissions represented by emission offsets. Emission offsets for a criteria pollutant are expressed as the ratio of X to Y, or X:Y, where X is the offsetting emission reductions and Y is the facility's increased emissions from construction (or reconstruction or modification). Thus, an offset of 2:1, for example, requires two tons of emission reductions for a criteria pollutant for each ton of a facility's increased emissions for that criteria pollutant.

The Emission Offset program also avoids further degradation of air quality by requiring an air quality impact analysis pursuant to N.J.A.C. 7:27-18.4. An applicant seeking a permit for a proposed new source or proposed modification of an existing source for which there would be a significant net emission increase (SNEI) as determined pursuant to N.J.A.C. 7:27-18.7, must conduct an air quality impact analysis to demonstrate that the allowable emission increases from the proposed new or modified source, taken together with the existing monitored background concentration of the criteria pollutant in the ambient air, would not cause or contribute to a violation of an applicable NAAQS or have a comparable impact on a nonattainment area as determined by reference to the significant air quality impact levels (or SILs) at Table 1 of N.J.A.C. 7:27-18.4. The SILs at Table 1 are expressed as an ambient pollutant concentration (in $\mu\text{g}/\text{m}^3$), above which it is presumed the SNEI will contribute to or cause a NAAQS violation. If the proposed emission increases from the new or modified source exceed this threshold, the applicant must perform a cumulative impact analysis pursuant to N.J.A.C. 7:27-18.4(a)2 and

Technical Manual 1002 as specified in N.J.A.C. 7:27-18.4(c). The cumulative impact analysis is a complete source impact analysis involving modeling the collective impacts of the proposed new or modified source and emissions from other existing sources to determine whether the proposed emissions from the new or modified source would result in an exceedance of the NAAQS. The Department will not issue an air permit that would result in an exceedance of a NAAQS; the applicant must secure emission offsets in accordance with the Department's Emission Offset rules at N.J.A.C. 7:27-18. However, because the existing Emission Offset rules do not yet address PM_{2.5}, as to PM_{2.5} Appendix S applies until the Federal requirements are included in the State's rules, and made part of the State's SIP.

Prevention of Significant Deterioration (PSD)

The second component of NSR, the PSD program, applies to new and modified major sources in an attainment (or unclassifiable) area. The emission thresholds for a major source and a major modification are at 40 CFR Part 52.21, the EPA regulations for the PSD program. A new or modified source that is subject to the PSD requirements must obtain a preconstruction permit and demonstrate compliance with the PSD program requirements at 40 CFR Part 52.21. The applicant must show that it will install Best Available Control Technology (BACT); conduct an air quality impact analysis that demonstrates compliance with NAAQS and PSD increments; and review the impact of the new or modified source on any Class I areas (in New Jersey this is the Brigantine Wilderness Area) and on soils, vegetation, and visibility.

The PSD program is administered by EPA or by a state to which EPA has delegated permit review authority pursuant to 40 CFR 52.21(u), or by a state that has incorporated the Federal PSD program regulation into its SIP. New Jersey has delegated permit review authority; therefore, the Department includes the Federal PSD program requirements in its air pollution

control permits, and reviews permit applications to ensure that the permits reflect compliance with the PSD program requirements. The PSD requirements are reflected in the Department's rules at N.J.A.C. 7:27-8 and 22. N.J.A.C. 7:27-8.11(a)1 requires an applicant to document that each significant source included in the application complies with the PSD requirements at 40 CFR 52.21. Pursuant to N.J.A.C. 7:27-22.16(a), the Department includes in each operating permit all emission limitations and operational standards necessary to assure compliance with all applicable requirements (which includes PSD requirements). N.J.A.C. 7:27-22.24(b)1iv provides that a modification that is subject to the PSD regulations at 40 CFR Part 52 is considered to be a significant modification. All significant modification permit applications are subject to the public notice requirements at N.J.A.C. 7:27-22.11(c), consistent with the Federal PSD public notice requirements.

Minor New Source Review

The third component of NSR, referred to as the minor NSR program, applies to the construction or modification of minor sources, whether the area in which the source is located is designated in attainment or nonattainment. These sources of air contaminants do not exceed the thresholds for major sources and can be pieces of equipment, source operations, or processes. EPA's minor NSR program rules at 40 CFR Part 51, Subpart I, do not establish specific standards or requirements for the regulated entities; these are left to the states to formulate. A state can customize the requirements of the minor NSR program, as long as its program meets minimum requirements. A state's minor NSR program is part of that state's SIP's control strategy to achieve and maintain the health standards (NAAQS) for criteria pollutants. In New Jersey, the minor NSR program is addressed by the preconstruction permit rules at N.J.A.C. 7:27-8.

Proposed amendments to New Jersey's NSR program rules

In conformance with the changes to the Federal NSR program, the Department has been implementing the requirements of Appendix S since July 15, 2008 (the effective date of the Federal PM_{2.5} NSR regulations), for each air pollution control permit application for a source that is subject to PM_{2.5} NNSR requirements. As stated above, Appendix S sets forth preconstruction review requirements that an affected state must implement until such time as it incorporates the new Federal NSR requirements into its regulations and revises its SIP accordingly. These requirements include applicability criteria for PM_{2.5} by setting emission thresholds for determining whether a source is a major source, and when the emission offset and NNSR permitting requirements will apply to a new or modified source.

When the Department first implemented these PM_{2.5} requirements, 13 counties in New Jersey were designated nonattainment for the PM_{2.5} NAAQS in effect at that time, which meant that some permits would have been subject to Federal NNSR requirements and others (in the eight counties designated as attainment) would have been subject to PSD requirements (unless they triggered NNSR requirements). Since September 4, 2013, the effective date of the redesignation of New Jersey nonattainment areas to attainment for the 1997 annual (15 µg/m³) and the 2006 24-hour (35 µg/m³) PM_{2.5} NAAQS, the Department has been implementing the PSD provisions for PM_{2.5} in air permits throughout the State.

Although all of New Jersey is now designated in attainment for PM_{2.5}, it is necessary for the Department to amend its rules to reflect the new Federal NNSR requirements for PM_{2.5}, as well as the new minor source NSR requirements for PM_{2.5}. Even though a source is located in an attainment area, its construction or modification could trigger NNSR requirements. For example, if construction of a new facility or modification of an existing facility will result in a

significant net emissions increase, the Department must examine the impact of that increase. Construction or modification of a source in an attainment area may trigger NNSR requirements if the proposed emission increase would produce an ambient concentration of PM_{2.5} in a nonattainment area (such as Delaware County in Pennsylvania) that exceeds the PM_{2.5} SIL. NNSR requirements would also be triggered if the proposed emission increase would produce an ambient concentration of PM_{2.5} in an attainment area (in or outside New Jersey), that would cause a PM_{2.5} NAAQS violation. Under these circumstances, New Jersey facilities would be subject to NNSR requirements, even though they are located in an attainment area.

The Department proposes to amend N.J.A.C. 7:27-8, 18, and 22 to add PM_{2.5} and its precursors (NO_x and SO₂) as regulated air contaminants, in order to include the Federal requirements, discussed above. These requirements include applicability criteria for PM_{2.5} by setting emission thresholds for determining whether a source is a major source, and when the emission offset and NNSR permitting requirements will apply to a new or modified source. The amendments also codify the EPA SILs for air quality impact reviews and the EPA offset ratios for emission reductions and allow inter-pollutant offsets for PM_{2.5} and its precursors.

NSR applicability – thresholds for PM_{2.5} and its precursors

The Department's permitting rules at N.J.A.C. 7:27-8, 18, and 22 contain the Federal NSR permitting requirements for criteria pollutants (and their precursors) other than PM_{2.5}. These existing rules address ozone (NO_x and VOC as ozone precursors), PM₁₀, SO₂, carbon monoxide (CO), and lead (Pb), as well as hazardous air pollutants. The Department proposes to amend the rules so that they include the Federal NSR permitting requirements for PM_{2.5} and its precursors. Specifically, the Department proposes to amend the definition of "major facility," and add thresholds to the several tables throughout the rules, as discussed below.

Definitions

The Department proposes to add the definition of PM_{2.5} to N.J.A.C. 7:27-8.1, 18.1, and 22.1, as this term is used throughout the proposed new rules. The proposed amended definitions of “major facility” at N.J.A.C. 7:27-8.1 and 22.1 add major facility thresholds for PM_{2.5}, NO_x as a PM_{2.5} precursor, and SO₂ as a PM_{2.5} precursor to be consistent with the Federal requirements. It should be noted that the existing definitions of “major facility” at N.J.A.C. 7:27-8.1 and 22.1 already include thresholds for both NO_x and SO₂, but as ozone precursors, not as PM_{2.5} precursors. To address PM_{2.5}, the Department proposes to regulate NO_x under the PM_{2.5} NSR requirements by establishing a different threshold for NO_x as a PM_{2.5} precursor. To do so, the rules must distinguish between NO_x as a PM_{2.5} precursor, and NO_x as an ozone precursor and as the air contaminant with which the criteria pollutant nitrogen dioxide (NO₂) is associated. The Department proposes to do this by adding the parenthetical “(as a PM_{2.5} precursor)” as appropriate. There is no physical difference between NO_x as a PM_{2.5} precursor and NO_x as an ozone precursor; the differentiation is only necessary in determining the applicable control strategy requirements.

The Department regulates NO_x at existing N.J.A.C. 7:27-8, 18, 21, and 22 as part of two control strategies. The first control strategy is the ozone control strategy, addressing New Jersey’s classification as nonattainment for the 75 parts per billion (ppb) eight-hour ozone NAAQS. Because NO_x is an ozone precursor, the Department regulates NO_x as part of the ozone control strategy to achieve and maintain the ozone NAAQS. The second control strategy is the control strategy for NO₂. New Jersey is classified as attainment for the 53 ppb annual NO₂ NAAQS and the 100 ppb one-hour NO₂ NAAQS. In order to continue to achieve and maintain

the NO₂ NAAQS, the Department regulates and controls NO_x, which includes NO₂. The proposed amendments expand the regulation of NO_x to include its regulation as a PM_{2.5} precursor. As noted above, because the proposed regulatory thresholds and other requirements for NO_x as a PM_{2.5} precursor differ from those established for NO_x as either an ozone precursor or as NO₂, the Department proposes to refer to NO_x in these amended provisions as “NO_x (as a PM_{2.5} precursor).”

The definitions of “major facility” at existing N.J.A.C. 7:27-8.1 and 22.1 include a major facility threshold for SO₂, but do not include a major facility threshold for SO₂ as a PM_{2.5} precursor. The proposed 100 tons per year threshold for SO₂ as a PM_{2.5} precursor is the same as the existing threshold for SO₂ as a criteria pollutant. To provide consistency with the differentiation between NO_x and NO_x as a PM_{2.5} precursor, and otherwise to avoid confusion, the Department is proposing to create a separate threshold line for SO₂ as a PM_{2.5} precursor in these definitions, by adding the parenthetical “(as a PM_{2.5} precursor)” as appropriate. The Department regulates SO₂ at existing N.J.A.C. 7:27-8, 18, 21, and 22 as part of a control strategy to attain and maintain the NAAQS for SO₂. All ambient air monitors in New Jersey measure SO₂ levels at below the 75 parts per billion (ppb) one-hour SO₂ NAAQS. EPA has not yet issued an attainment designation for New Jersey for SO₂ but has committed to do so by December 31, 2017. The proposed amendments expand the regulation of SO₂ to include its regulation as a PM_{2.5} precursor. Although the proposed regulatory thresholds for SO₂ and SO₂ as a PM_{2.5} precursor are the same, other requirements for SO₂ as a PM_{2.5} precursor, such as the minimum offset ratio, differ from those established for SO₂. Therefore, the Department proposes to refer to SO₂ in the amended provisions as “SO₂ (as a PM_{2.5} precursor).” As is the case with NO_x, there is

no physical difference between SO₂ as a PM_{2.5} precursor and SO₂ as a criteria pollutant; the differentiation is only necessary in determining the applicable control strategy requirements.

The Department also proposes to amend the definition of “respective criteria pollutant” at N.J.A.C. 7:27-18.1 to identify NO_x and SO₂ as precursors of PM_{2.5} by adding PM_{2.5} as a respective criteria pollutant for PM_{2.5}, NO_x and SO₂ as part of the incorporation of the new requirements for PM_{2.5} and its precursors.

Thresholds

Proposed amended Table A at Appendix 1 of N.J.A.C. 7:27-8 adds a potential to emit reporting threshold and an SOTA threshold for PM_{2.5}. The proposed thresholds for PM_{2.5} are the same as the existing thresholds in Table A at Appendix 1 for PM₁₀. Because PM_{2.5} is a subset of PM₁₀, a source that exceeds the reporting and SOTA thresholds for PM_{2.5} is already exceeding the same thresholds for PM₁₀, so it would not be triggering any requirements to which it is not already subject. The reporting and SOTA thresholds in Table A are referenced in a number of provisions in N.J.A.C. 7:27-8: in existing N.J.A.C. 7:27-8.2(d)3ii(4) (in determining whether a stationary storage tank is a “significant source” to which N.J.A.C. 7:27-8 applies); in existing N.J.A.C. 7:27-8.2(e)2v (in determining whether equipment listed at N.J.A.C. 7:27-8.2(c)19 is a “significant source” to which N.J.A.C. 7:27-8 applies); in existing N.J.A.C. 7:27-8.4(k)1 (in determining which air contaminants are to be listed in applications, registrations, or notices that require the listing of air contaminants); in existing N.J.A.C. 7:27-8.12(a)2 (in determining SOTA documentation requirements); in existing N.J.A.C. 7:27-8.18(a)4 (in determining when a permit revision is required for a reconstruction); in existing N.J.A.C. 7:27-8.20(d)2 (in determining when a seven-day notice cannot be used for a change); and in existing N.J.A.C. 7:27-8.21(b)6 and 8 (in determining whether certain changes require a notice of amendment). Proposed

amended Table A establishes an SOTA threshold of 5.0 tons per year. Table A at Appendix 1 is also referenced in the existing definition of “exempt activity” at N.J.A.C. 7:27-22.1 at paragraph 14ii(5), but only in connection with TXS, that is, toxic substances regulated by N.J.A.C. 7:27-17.

Proposed amendments to N.J.A.C. 7:27-22.2, Table 1, add potential to emit reporting threshold levels for PM_{2.5} and for NO_x and SO₂ as PM_{2.5} precursors at a level identical to that established in the Federal rules. If a facility emits or has the potential to emit any of the air contaminants listed in the table in an amount that equals or exceeds the threshold amount in the table, then the facility is subject to the operating permit rules, N.J.A.C. 7:27-22.

Proposed amendments to Table A, “Thresholds for Reporting of Emissions of Air Contaminants Other than Hazardous Air Pollutants (HAPs)” in the Appendix to N.J.A.C. 7:27-22, add a reporting threshold for PM_{2.5}. The reporting thresholds in this table are referenced in existing N.J.A.C. 7:27-22.3(c) (in requiring emissions of any air contaminant in excess of the thresholds at Table A to be included in the facility’s operating permit); in existing N.J.A.C. 7:27-22.6(f)5i and ii (in determining whether information regarding emissions and fugitive emissions must be provided on an application for an initial operating permit), and in existing N.J.A.C. 7:27-22.27(e)1iii, (regarding information to be provided when an operating scenario is proposed to be added to an operating permit as a seven day notice).

The Emission Offset rules at N.J.A.C. 7:27-18 may apply to a facility if the facility has the potential to emit any of the air contaminants listed in N.J.A.C. 7:27-18.2(a)1 at a level equal to or exceeding the threshold level in the rule. Proposed amendments to N.J.A.C. 7:27-18.2(a)1 add PM_{2.5}, and NO_x and SO₂ (as PM_{2.5} precursors) to the list of air contaminants and set potential to emit applicability threshold levels for them.

Significant net emission increase (SNEI) is an emission increase of any air contaminant, calculated using the procedures set forth in the Emission Offset rules at N.J.A.C. 7:27-18.7. The calculation considers not only the increased emissions of a specific contaminant from a single source, but also the net emissions change of the contaminant at the entire facility over the five-year period prior to the commencement of construction of the equipment, plus the period between commencement of construction (including modification or reconstruction) and the initial operation of the equipment (new, modified, or reconstructed). Whether the emission offset requirements apply depends on the amount of the net emission increase. That is, if a facility emits or proposes to emit an air contaminant at a level greater than the SNEI threshold, the facility must obtain an air permit that includes NNSR requirements, such as offsets. The Department proposes to add PM_{2.5} and its precursors (NO_x and SO₂) to the list of air contaminants in N.J.A.C. 7:27-18.7, Table 3, and establish SNEI levels for them. As discussed above, the proposed amendments to Table 3 distinguish between the existing rule's regulation of SO₂, and the proposed rule's regulation of SO₂ as a PM_{2.5} precursor, by adding the qualifying parenthetical "(as a PM_{2.5} precursor)."

Both N.J.A.C. 7:27-18.2(b) and 18.4(a) refer to the air contaminants listed in this Table. The Department's Emission Offset rules at N.J.A.C. 7:27-18 already reflect the basic requirements of Appendix S for criteria pollutants other than PM_{2.5} and its precursors. These requirements (LAER, compliance certification, air quality analysis, emission offsets, and an alternative siting analysis), are addressed at existing N.J.A.C. 7:27-18.3 and 18.4. Until New Jersey adopts the proposed amendments extending these requirements to PM_{2.5} and its precursors, the Department will continue to apply Appendix S requirements to permit review for PM_{2.5}.

SILs for PM_{2.5} for air quality impact reviews

Proposed amendments to Table 1 of N.J.A.C. 7:27-18.4 add SILs for PM_{2.5}, which are the same as EPA established in Appendix S and its rules at 40 CFR 51.165(b). As discussed above, the SILs at Table 1 are expressed as an ambient pollutant concentration above which it is presumed the significant net emission increase will contribute to or cause a NAAQS violation. If operation of the new or modified source would result in an exceedance of the SIL, the applicant must perform a cumulative impact analysis to determine whether the proposed emissions from the new or modified source would result in an exceedance of the NAAQS, which would require the use of emission offsets.

Emission offsets for PM_{2.5} and its precursors

Appendix S, Section IV.A and Clean Air Act Section 173(c) require the owner or operator of a proposed major new source, or an existing source undergoing major modification, located in a nonattainment area to use creditable emissions reductions to offset emissions increases of any regulated NSR pollutant. EPA defines regulated NSR pollutant for the purposes of the NSR program to include criteria pollutants, NO_x, VOCs, and precursors of these pollutants. (See 40 CFR 51.165(a)(1)(xxxvii).) The amount of emission reduction to offset any emission increases must be at least equal to the emission increase. The proportional difference between the amount of required offset to the amount of emission increase is referred to as the “offset ratio.” The offset ratios are set forth at Appendix S, Section IV.G and existing Table 2 of N.J.A.C. 7:27-18.5(c). Proposed amendments to N.J.A.C. 7:27-18.5(c) establish minimum offset ratios for increased emissions of PM_{2.5} and its precursors of 1.0:1.0, which is the same offset ratio as set forth in Appendix S. The proposed amendments to Table 2 also address how near the facility the emission reductions must be in order to be considered emission offsets. The

Department proposes that the emission reductions for PM_{2.5} and its precursors may be obtained at any distance from the facility. Pursuant to N.J.A.C. 7:27-18.5(e) and (f), facilities may use air quality simulation models to demonstrate a net air quality benefit in lieu of using the offset ratios and distance specified in N.J.A.C. 7:27-18.5(c), Table 2. Modeling could allow a facility to obtain emission reductions in an amount lower than would be required by using the ratios and distances at Table 2; however, no matter what the simulation model demonstrates, proposed amended N.J.A.C. 7:27-18.5(f)1 establishes a minimum offset ratio of 1.00:1.00 for NO_x and SO₂ (as PM_{2.5} precursors).

Existing N.J.A.C. 7:27-18.5(g) establishes criteria for the use of creditable emission reductions as offsets, and limits the use of creditable emission reductions to the same air contaminant category. The proposed amendments to N.J.A.C. 7:27-18.5(g), along with proposed new provisions at N.J.A.C. 7:27-18.5(l), allow PM_{2.5} inter-pollutant offsets, which is the use of creditable emission reductions of PM_{2.5} and its precursors (NO_x and SO₂) to offset increases of PM_{2.5} and its precursors, removing the restriction that the emission reductions must be to the same air contaminant category. The Department proposes to define “PM_{2.5} inter-pollutant offset” at N.J.A.C. 7:27-18.1 to be consistent with the Federal requirements and to simplify the proposed provisions in N.J.A.C. 7:27-18.5 that refer to this type of emission offsetting. Under the proposed amended rule, a facility would not be limited to offsetting PM_{2.5} with reductions of PM_{2.5}, but could use reductions of either SO₂ or NO_x emissions as offsets. Similarly, reductions in NO_x emissions could be used to offset increases in SO₂ emissions, and vice versa, but only if these are being offset as precursors to PM_{2.5}. Such trading is allowed by EPA only for offsets, and is prohibited for calculating a significant net emission increase (SNEI) pursuant to N.J.A.C. 7:27-18.7.

Under proposed new N.J.A.C. 7:27-18.5(l), a facility that proposes to use PM_{2.5} inter-pollutant offsets must use one of three methods to demonstrate that there is a net air quality benefit from the ratio that it proposes. The first two methods require the facility to use an inter-pollutant offset ratio that the Department establishes and publishes in a technical manual, or a ratio that the EPA establishes and the Department accepts. The Department will have already evaluated the net air quality benefit from a ratio established under either of these methods, so no further demonstration is required. The third method is to use a ratio that the facility or a regional air pollution control organization develops, provided the facility or the regional organization includes a technical demonstration showing a net air quality benefit. If a facility is applying for an initial operating permit for a new facility, or for a modification to an existing operating permit, and relies on the third option (proposed N.J.A.C. 7:27-18.5(l)3), then proposed new N.J.A.C. 7:27-22.8(a)5 requires the application to include air quality simulation modeling.

The Federal rules provide for PM_{2.5} inter-pollutant offsets under Appendix S, Section IV.G.5. EPA provided additional discussion concerning PM_{2.5} inter-pollutant offset ratios in the preamble of the May 16, 2008 rule, where it included preferred or presumptive offset ratios, applicable to specific PM_{2.5} precursors, that a state could adopt in conjunction with the new inter-pollutant offset provisions for PM_{2.5}, and for which the state could rely on EPA's technical work to demonstrate the adequacy of the ratios for use in any PM_{2.5} nonattainment area. EPA's assessment indicated the preferred trading ratio of NO_x to PM_{2.5} is 200:1 (200 tons of NO_x offsetting each ton of PM_{2.5}), for areas in the eastern United States. EPA's preferred trading ratio for SO₂ to PM_{2.5} is 40:1 (40 tons of SO₂ offsetting each ton of PM_{2.5}), nationwide. However, EPA has not adopted these preferred offset ratios; therefore, the Department will re-evaluate this issue when EPA finalizes the numbers. EPA's preferred ratios were the subject of a petition for

reconsideration, which the EPA Administrator granted. As a result of that reconsideration, on July 21, 2011, EPA issued a memo entitled “Revised Policy to Address Reconsideration of Interpollutant Trading Provisions for Fine Particles (PM_{2.5}),” available at <http://www.epa.gov/nsr/guidance.html>. The policy continues to support the ability of sources to offset increases in emissions of PM_{2.5}, or of any PM_{2.5} precursor in a PM_{2.5} nonattainment area, with actual emissions reductions in PM_{2.5} or its precursors. However, EPA will no longer consider the preferred ratios set forth in the preamble to be presumptively approvable. Instead, any ratio involving PM_{2.5} precursors for use in the inter-pollutant offset program for PM_{2.5} nonattainment areas must be accompanied by a technical demonstration that shows the net air quality benefits of the offset for the PM_{2.5} nonattainment area in which it will be applied. EPA’s July 21, 2011, memo states that it will consider each proposal to allow PM_{2.5} inter-pollutant offsets under a SIP or in accordance with Appendix S on a case-by-case basis, and the policy does not limit or restrict any particular approach states may take to set appropriate PM_{2.5} inter-pollutant offset hierarchies and ratios. EPA has not yet approved a state-specific PM_{2.5} inter-pollutant offset ratio in any approved SIP.

Proposed new N.J.A.C. 7:27-18.5(m) addresses the question of which of the offset ratios (for NO_x as an ozone precursor or NO_x as a PM_{2.5} precursor, or both) would apply when NO_x offsets are required both for ozone and for PM_{2.5}. The proposed new regulation provides that the permit applicant would need to secure NO_x offsets only once, based on the more stringent offset ratio. The minimum offset ratio for NO_x in existing N.J.A.C. 7:27-18.5(c) is 1.3:1.0, which applies to NO_x as an ozone precursor. Since New Jersey is nonattainment for ozone, this offset ratio is required for NO_x emissions increases in New Jersey. The minimum emission offset ratio for NO_x as a PM_{2.5} precursor in proposed amended N.J.A.C. 7:27-18.5(c) is 1.0:1.0.

Accordingly, a permit applicant subject to both ozone and PM_{2.5} offsets would need to secure NO_x offsets at a ratio of 1.3:1.0, the more stringent offset ratio. Therefore, adding an offset ratio for NO_x as a PM_{2.5} precursor does not increase the required NO_x offset. An increase in NO_x emissions need be offset only once, even if the increase triggers nonattainment NSR under both the ozone and PM_{2.5} programs. This is consistent with EPA's statement to that effect in the preamble to the 2008 final rule (73 Fed. Reg. 28321, at 28338 to 28339, May 16, 2008).

Proposed new N.J.A.C. 7:27-18.5(n) prohibits the use of PM_{2.5} inter-pollutant offsets for use in a determination of SNEI. As stated in the preamble to the 2008 final rule (73 Fed. Reg. 28321, at 28339 and 28340), EPA is not allowing inter-pollutant offsets for SNEI purposes at this time. Allowing inter-pollutant offsets for SNEI purposes would be resource-intensive apart from the difficulty of demonstrating the net air quality benefit of a single source trade through air quality modeling.

Miscellaneous proposed amendments to the permitting and Emission Offset rules

Consistent with the use of the chemical nomenclature "SO₂" and "NO_x" throughout N.J.A.C. 7:27, the Department proposes replacing "sulfur dioxide" with "SO₂" and "nitrogen oxides" with "NO_x" at N.J.A.C. 7:27-8.1, 18.1, 18.2, 22.1, and 22.2. The Department also proposes to substitute the more commonly used "PM₁₀" for the now generally outdated "PM-10" throughout the rules. For consistency with the definition of NO_x elsewhere in N.J.A.C. 7:27, the Department proposes adding the alternative form of this term, "oxides of nitrogen," to the definition of NO_x at N.J.A.C. 7:27-8.1, 18.1, and 22.1. The Department proposes a new definition for SO₂ at N.J.A.C. 7:27-8.1, since this term is used but not defined in N.J.A.C. 7:27-8. This proposed definition is the same as the definition of this term at N.J.A.C. 7:27-18.1 and 22.1. For consistency with the definition and use of SO₂ elsewhere in N.J.A.C. 7:27, the

proposed amendment of the definition of SO₂ at N.J.A.C. 7:27-18.1 and 22.1 puts “SO₂” before “sulfur dioxide.” Also at N.J.A.C. 7:27-8.1 and 22.1, the proposed amended definition of PM₁₀ replaces the term “micrometers” with the equivalent and more commonly used term “microns,” so that PM₁₀ and PM_{2.5} are defined consistently throughout N.J.A.C. 7:27. In N.J.A.C. 7:27-18.1, the Department proposes to define “EPA” as the commonly used acronym for the U.S. Environmental Protection Agency.

Sulfur – Startup/Shutdown/Malfunction (SSM) Exemption

The Department’s rules governing air emissions of sulfur are set forth at N.J.A.C. 7:27-7, Sulfur, and include limits on the discharge of various sulfur compounds. The rules provide that no person shall cause, suffer, allow, or permit sulfur compounds in the form of gases, vapors, or liquid particles to be discharged from any stack or chimney into the outdoor atmosphere, except as provided in the rules. Among the exemptions to the discharge limits is “the discharge from any stack or chimney having the sole function of relieving pressure of gas, vapor or liquid under abnormal emergency conditions” (N.J.A.C. 7:27-7.2(k)2).

On May 22, 2015, EPA issued a final action to ensure states have plans in place that are fully consistent with the CAA and recent court decisions concerning startup, shutdown, and malfunction (SSM) operations. Specifically applicable to New Jersey, EPA determined that the exclusion at N.J.A.C. 7:27-7.2(k)2, which is part of the State’s SIP, does not meet CAA requirements, since the provision provides an impermissible exemption from the sulfur compound emission limitations otherwise applicable under the SIP. (See 78 Fed. Reg. 12494, February 22, 2013 and 80 Fed. Reg. 33840, June 12, 2015.) The EPA’s final action is also known as a SIP call. In response to the SIP call, the Department proposes to delete N.J.A.C. 7:27-7.2(k)2. The deletion will not affect the regulated community, since the Department no

longer uses the exemption in the permits that it issues. If the Department does not amend its rule, EPA could require 2:1 emissions offsets for new and modified projects, and restrict Federal highway funding to New Jersey.

Emission Statements

The Department is proposing amendments to N.J.A.C. 7:27-21, Emission Statements, to make the reporting requirements consistent with Federal guidelines, as well as to modify outdated provisions. N.J.A.C. 7:27-21 requires a facility with the potential to emit an air contaminant in excess of the applicable threshold to submit an Emission Statement. The existing rules require the reporting of PM_{2.5} and ammonia at the facility-wide level, which means that a facility would report a single value for each pollutant, representing the total of all emissions of that pollutant from all sources and/or equipment at that facility. This is inconsistent with the Federal Air Emissions Reporting Requirements (AERR), which require the reporting of all criteria pollutants and precursors (including PM_{2.5} and ammonia) at the source level for each facility. Accordingly, the Department proposes to amend N.J.A.C. 7:27-21.3(b) to require the reporting of PM_{2.5} and ammonia at the source level to be consistent with the Federal AERR reporting requirements. Existing N.J.A.C. 7:27-21.5(e), which identifies when emissions are reported at the facility-wide level and when they are reported at the source level, is no longer necessary and is proposed to be deleted and the subsection reserved. In practice, the Department already implements this source level reporting procedure in order to comply with AERR, and the regulated community has been reporting emissions of PM_{2.5} and ammonia at the source level.

The Department proposes to define “RADIUS” at N.J.A.C. 7:27-21.1. RADIUS is the Department’s Remote Access Data Information User System, used for a number of electronic submissions and interactions with the Department. The Department proposes that the term also

include successor software that the Department may develop for the same purpose in the future, in order that the rules can accommodate future technology. A proposed amendment to the definition of “Emission Statement Guidance Document” updates the version of this document to the most recent version. The document is updated annually. The Department also proposes to correct the internet address at which this document can be viewed. Amendments to the definition of PM_{2.5} correct grammar.

Existing N.J.A.C. 7:27-21.4 allows a facility to submit Emission Statements by e-mail; however, the Department’s e-mail system does not provide the requisite level of security to satisfy the Federal Cross-Media Electronic Reporting Rule (CROMERR). To remedy this deficiency in the security of electronic file transfer, the Department created an internet portal (NJDEP Online) that satisfies CROMERR for use in submitting not only Emission Statement files, but also other electronic submissions. Under the proposed rules, a facility would prepare its Emission Statement using RADIUS, as it does under the existing rules, and submit it electronically either through NJDEP Online or on an electronic medium that the Department can access. Under existing technology this is usually a CD, as indicated at proposed amended N.J.A.C. 7:27-21.4(b)1. The Department no longer uses diskettes, so it is removing the reference to diskettes at N.J.A.C. 7:27-21.4(b)3ii. CROMERR would permit the use of e-mail to submit Emission Statements only if a number of requirements were met, including a level of security the Department’s current e-mail system does not achieve. See <https://www.epa.gov/cross-media-electronic-reporting-rule> (40 CFR Part 3). Therefore, the Department is deleting the reference to e-mail submissions.

Existing N.J.A.C. 7:27-21.8(b) provides methods of certifying an Emission Statement, depending on the medium of the Emission Statement. N.J.A.C. 7:27-21.8(b)1 governs

certification of electronic submittals, and paragraph (b)2 governs certification of paper submittals. The proposed amended rule also provides certification methods, but separates the paragraphs based on whether the emission statement is submitted through NJDEP Online, or delivered to the Department (on paper or an electronic medium) by mail or courier service. If submission is through NJDEP Online, then certification is by inserting a personal identification number (PIN) on the certification screen. If the Emission Statement is provided to the Department on an electronic medium or on paper (in accordance with N.J.A.C. 7:21.4(d)) by mail or courier service, then certification is on a paper certification form available at the Bureau of Air Quality Planning website.

Social Impact

The Department anticipates that the proposed amendments will have an overall positive social impact.

PM_{2.5} New Source Review (NSR)

The proposed amendments conform the State's rules to the Federal PM_{2.5} NSR requirements, which include various emission thresholds for PM_{2.5} and its precursors (SO₂ and NO_x), SILs for PM_{2.5}, and PM_{2.5} offsets. There is no direct, quantifiable social impact from the proposed amendments to N.J.A.C. 7:27-8, 18, and 22 relating to PM_{2.5}, in that the Department is not adding requirements beyond the Federal requirements that are already being implemented in New Jersey. Adopting the Federal PM_{2.5} NSR provisions to the Department's rules will result in the continued regulation of PM_{2.5} as a criteria pollutant to ensure that a proposal to construct a new facility or to modify an existing facility will not cause or contribute to a violation of a

NAAQS. By codifying the existing Federal requirements regarding PM_{2.5}, the proposed amendments may have an indirect positive social impact in that the Department is making a clear regulatory statement that it regulates PM_{2.5} in the same way it regulates PM₁₀ and other air contaminants. Such clarification may improve the Department's effectiveness in controlling fine particulate matter in New Jersey. This in turn will have a positive, but unquantifiable, social impact by helping to protect the public health and welfare.

The health effects associated with exposure to PM_{2.5} are significant, mainly because particles of this size can easily reach into the deepest regions of the lungs. Significant health effects associated with exposure to PM_{2.5} include premature mortality; aggravation of respiratory and cardiovascular disease; decreased lung function and difficulty breathing; asthma attacks; and serious cardiovascular problems, such as heart attacks and cardiac arrhythmia.

Three sensitive populations that will benefit from a decrease in ambient particulate levels are people with heart or lung diseases, older adults, and children. People with heart or lung diseases, such as coronary artery disease, congestive heart failure, and asthma or chronic obstructive pulmonary disease (COPD) are at an increased risk because particles can aggravate these diseases. People with diabetes also may be at increased risk, possibly because they are more likely to have underlying cardiovascular disease. Older adults are at increased risk, possibly because they may have undiagnosed heart or lung disease or diabetes. Many studies show that when particle levels are high, older adults are more likely to be hospitalized, and some may die of aggravated heart or lung disease. Children are at increased risk for several reasons, including the fact that their lungs are still developing; they spend more time at high activity levels; and they are more likely to have asthma or acute respiratory diseases, which can be aggravated when particle levels are high.

It appears that risk varies throughout a lifetime, generally being higher in early childhood, lower in healthy adolescents and younger adults, and increasing in middle age through old age as the incidence of heart and lung disease and diabetes increases. Factors that increase the risk of heart attack, such as high blood pressure or elevated cholesterol levels, also may increase the risk from particles. In addition, scientists are evaluating new studies that suggest that exposure to high particle levels may also be associated with low birth weight in infants, pre-term deliveries, and possibly fetal and infant deaths.

The following websites list PM_{2.5} health-related data:

https://www3.epa.gov/ttn/naaqs/standards/pm/s_pm_index.html,

<https://www3.epa.gov/pm/2012/decfshealth.pdf>, and

<https://www3.epa.gov/airquality/particlepollution/pdfs/pm-color.pdf>.

See also, EPA's Integrated Science Assessment for Particulate Matter (Final Report), which is EPA's latest evaluation of the scientific literature on the potential human health and welfare effects associated with ambient exposures to particulate matter (PM), available at

<https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=216546&CFID=60670854&CFTOKEN=42487875#Download>.

Sulfur

Existing N.J.A.C. 7:27-7.2(k)2 exempts the discharge of sulfur compounds from any stack or chimney under abnormal emergency conditions from the Department's rules that address the control and prohibition of air pollution from sulfur compounds. The proposed deletion of this provision will have a positive social impact. Although this exemption is not included in any permits issued by the Department at this time, its deletion will remove any possibility of a facility being granted such a waiver. SO₂, which is produced when elemental sulfur is involved

in a combustion process, causes a wide variety of health and environmental impacts. Peak levels of SO₂ in the air can cause temporary breathing difficulty for people with asthma and can cause an array of adverse respiratory effects including bronchoconstriction. Longer-term exposures to high levels of SO₂ cause respiratory illness and aggravate existing heart disease. SO₂ reacts with other chemicals in the air to form fine sulfate particles. When these are inhaled, they gather in the lungs and are associated with increased respiratory symptoms and disease, difficulty in breathing, and premature death. Additional information on the health effects of SO₂ is available at EPA's website at <https://www3.epa.gov/airquality/sulfurdioxide/health.html>.

Emission Statements

The proposed amendments to N.J.A.C. 7:27-21 will have no social impact. These amendments are essentially administrative. The proposed reporting of PM_{2.5} and ammonia at the source level rather than the facility level should have no impact, since this level of reporting is consistent with the current practice of the regulated community in New Jersey, and Federal requirements. The remaining proposed amendments to the rules relating to submittal of emission statements will have no impact.

Economic Impact

The Department anticipates that the proposed amendments will have an overall neutral economic impact.

PM_{2.5} New Source Review (NSR)

There should be no economic impact from the proposed amendments, since the Department has implemented the Federal PM_{2.5} NSR requirements since their effective dates. EPA estimated the costs and benefits associated with implementing the final rules promulgated

on September 21, 2006, that established the 24-hour standard of 35 $\mu\text{g}/\text{m}^3$ and retained the annual standard of 15 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$. (EPA's analysis is available at <http://www.epa.gov/ttnecas1/ria.html>, at the Regulatory Impact Analyses under the heading 2006 National Ambient Air Quality Standards for Particle Pollution: 10-6-2006.) These costs and benefits include the monetized human health benefits, control costs, and net benefits. EPA's analysis includes an estimate of the health and welfare benefits of reductions in ambient concentrations of particulate matter resulting from a set of control strategies to reduce emissions of $\text{PM}_{2.5}$ precursors. The results indicate there are significant health and welfare benefits arising from reducing emissions from a variety of sources in and around projected nonattaining counties by 2020. Benefits (and costs) begin occurring earlier, as states implement control measures and show progress towards attainment.

EPA's projections were expressed in 1999 dollars, which the Department converted to 2016 dollars using the CPI Inflation Calculator available from the Bureau of Labor Statistics at http://www.bls.gov/data/inflation_calculator.htm. The projections for the East Region as a whole, taken from EPA's analysis are shown in Table 1 below. (EPA defined East Region to be the 37 states either completely or in part east of 100 degrees west longitude, which includes New Jersey.)

As Table 1 shows, EPA presented two calculations of the benefit-cost ratio, one discounting annual benefits and annual costs by three percent per year and one discounting these amounts by seven percent per year. The use of these two rates is mandated by the United States Office of Management and Budget (USOMB) for many regulatory impact analyses prepared by Federal agencies; and while USOMB's rules are not binding on state agencies, they do provide two convenient reference points. (It is important to note that discount rates reflect long-term

estimates of certain economic factors and not current market interest rates.) The fact that EPA’s analysis shows a benefit-cost ratio in excess of 3.0 (the economic value of benefits from the control measures are at least three times the economic cost of the controls) at both discount rates is evidence of the reliability of EPA’s estimates.

Table-1

Estimated Benefits and Costs of Full Attainment with the PM_{2.5} NAAQS in East Region

(in Million 2016\$)

3 percent discount rate

Benefits	Costs	Net Benefits	Benefit-Cost Ratio*
\$3,555	\$1,009	\$2,546	3.5 times

7 percent discount rate

Benefits	Costs	Net Benefits	Benefit-Cost Ratio*
\$3,129	\$1,009	\$2,120	3.1 times

Source: USEPA Regulatory Impact Analysis for the 2006 National Ambient Air Quality Standards for Particle Pollution, Chapter 9: Comparison of Benefits and Costs, Table 9-1 available at <https://www3.epa.gov/ttnecas1/ria.html>.

*Benefit-cost ratio calculated by the Department as benefits divided by costs.

New Jersey has already achieved attainment of the 1997 annual 15µg/m³, the 2006 24-hour 35µg/m³, and the 12 µg/m³ annual PM_{2.5} NAAQS and has been redesignated as in attainment. Although many factors, such as the Department’s SOTA rules, have contributed to

the State's PM_{2.5} attainment status, the promulgation of 40 CFR Part 51, Appendix S has also assisted in achieving these ambient PM_{2.5} concentration levels. Since New Jersey achieved attainment of the PM_{2.5} NAAQS before the projection year 2020 that EPA used in its cost benefit analysis, the State is already enjoying the health and welfare benefits resulting from reduced PM_{2.5} emissions from a variety of sources in the State.

New Jersey residents already benefit from the implementation of the Federal requirements for the PM_{2.5} NAAQS that the proposed rules codify, insofar as the Federal program already helps to reduce emissions of PM_{2.5} and its precursors, NO_x and SO₂. Maintaining levels of PM_{2.5} below the NAAQS is important to reduce premature mortality and other health effects associated with PM_{2.5} exposure. A reduction in employee illness means increased productivity and reduced economic loss from the use of sick time. Reductions in ambient levels of PM_{2.5} also promote improved visibility, decreased soiling and materials damage, and decreased damage to plants and trees. All of these represent significant positive economic impacts for the State.

As stated above, the proposed rules codify at N.J.A.C. 7:27-8, 18, and 22 the Federal requirements that the Department already implements. As of the publication of this proposal, there are approximately 270 major facilities and more than 18,000 minor facilities in New Jersey that may be subject to the NSR regulations, if modifications at those facilities are proposed. The proposed amendments do not impose any additional compliance costs on the affected facilities over and above those that they will incur in complying with the Federal requirements. Examples of the compliance activities with which these costs are associated include stack testing conducted to determine PM_{2.5} emissions, expanded air quality modeling studies that address the PM_{2.5} ambient impact levels, and the obtaining of emission offset credits.

The proposed reporting threshold for PM_{2.5} is the same as the existing reporting threshold for PM₁₀; therefore, the proposed reporting threshold will have no economic impact on the minor facilities subject to N.J.A.C. 7:27-8. If a source exceeds the reporting threshold for PM_{2.5}, it also exceeds the reporting threshold for PM₁₀, since PM_{2.5} is a subset of the source's PM₁₀ emissions. When a minor facility applies for a modification to an existing source operation or for a new source operation, it would address PM_{2.5} emissions while addressing PM₁₀ emissions. The PM_{2.5} emissions estimates can be based on the methodology used and assumptions made to determine the PM₁₀ emissions, and can be determined without incurring additional cost.

The proposed addition of a SOTA level for PM_{2.5} should also have no economic impact on the minor facilities, because a facility that exceeds the SOTA level for PM_{2.5} would also already exceed the SOTA level for PM₁₀, since PM_{2.5} is a subset of PM₁₀, as explained in the Summary above. Such a facility would already be complying with the SOTA level for PM₁₀ at N.J.A.C. 7:27-8. Furthermore, the PM₁₀ and PM_{2.5} emissions are comprised of a condensable particulate matter fraction and a filterable particulate matter fraction. Both fractions are controlled by the same air pollution control device. The add-on air pollution controls and pollution prevention measures used for demonstrating compliance with PM_{2.5} and PM₁₀ SOTA levels have been the same. Consequently, applicability of the PM_{2.5} emissions to a SOTA standard would not require installation of new controls.

If the Department does not incorporate the Federal PM_{2.5} requirements into its permitting rules, EPA would need to review and approve permit applications for PM_{2.5} emissions. Permitting by both New Jersey for non-PM_{2.5} emissions and by EPA for PM_{2.5} emissions would result in duplicate work for New Jersey businesses, and slow down permit issuance and the

construction of new and modified sources, which could negatively affect economic growth in the State.

Sulfur

There is no economic impact from the proposed deletion of the exemption for the emergency release of sulfur at N.J.A.C. 7:27-7.2(k)2. No operating permit issued pursuant to N.J.A.C. 7:27-22, and no permit to construct and certificate to operate issued pursuant to N.J.A.C. 7:27-8, have this exemption in a compliance plan. Therefore, no facility is using this exemption as a means of complying with its permit restrictions and, consequently, elimination of the exemption will not affect any facility's cost of compliance. In addition, the Department will not include this exemption in any future permits, as EPA determined that the exemption at N.J.A.C. 7:27-7.2(k)2, which is part of the State's SIP, does not meet the CAA requirements (80 Fed. Reg. 33840, June 12, 2015).

Emissions Statements

The Department also anticipates that there will be no economic impact from the proposed amendments to N.J.A.C. 7:27-21 that require the reporting of PM_{2.5} and ammonia at the source level instead of the facility level. Reporting at the source level would not require any additional effort, since the source-level emissions already have to be determined in order to calculate the facility-level emissions. In addition, this level of reporting is consistent with the current practice of the regulated community in New Jersey, in accordance with Federal requirements. As to the proposed update to the certification methods, this is only a clarification of the methods used, and imposes no additional reporting requirements.

The proposed elimination of the option to e-mail an Emission Statement will not result in a cost to facilities. Although some facilities may prefer an e-mail to a submission through

NJDEP Online, both submissions are made online, and neither requires special equipment. RADIUS, the software program that a facility must use to prepare an Emission Statement, is available without cost. Many facilities already use NJDEP Online to submit general air permits. A facility that has never used NJDEP Online will incur only the cost of the time to learn how to use the system. The Department makes available a training webinar that takes less than an hour to complete, and has help lines to provide user support.

Environmental Impact

The Department anticipates that the proposed amendments will have an overall positive environmental impact.

PM_{2.5} New Source Review (NSR)

There is no direct, quantifiable environmental impact from the proposed amendments to N.J.A.C. 7:27-8, 18, and 22 relating to PM_{2.5} in that the Department is not adding any requirements beyond Federal requirements that are already being implemented in New Jersey. However, by codifying the existing Federal requirements regarding PM_{2.5}, the proposed amendments may have an indirect positive environmental impact in that the Department is making a clear regulatory statement that it regulates PM_{2.5} in the same way it regulates other air contaminants. Such clarification may indirectly improve the Department's effectiveness in controlling fine particulate matter in New Jersey. This in turn will have a positive environmental impact by helping to protect the environment in New Jersey, as discussed below.

While New Jersey is in attainment of the NAAQS for PM_{2.5} as of the date of this notice of proposal, the presence of PM_{2.5} in the ambient air in New Jersey is an environmental concern. Fine particles in the air reduce the amount of sunlight reaching the ground, decrease visibility,

and increase haze. This visibility impairment is directly in proportion to the PM_{2.5} concentration in the ambient air. At elevated PM_{2.5} concentrations, visual ranges are degraded and images of scenic views (for example, mountains, urban skylines, and other scenic views) are significantly obscured from view.

In addition to visibility impairment, ambient particulate matter also affects vegetation, ecosystems, soiling and materials damage, and the radiative properties of clouds. Particles containing nitrates and sulfates have the greatest potential for widespread environmental damage. Ambient particulate matter affects vegetation insofar as excess levels of particulate nitrates and sulfates result in acid deposition to foliage, leading to accelerated weathering of leaf surfaces; increased permeability of leaf surfaces to toxic materials, water, and disease agents; increased leaching of nutrients from foliage; and altered reproductive processes. These factors weaken trees, resulting in higher susceptibility to other stresses (for example, extreme weather, pests, and pathogens).

The nutrient or acidifying characteristics of deposited particulate matter on both terrestrial and aquatic ecosystems contribute to adverse impacts on essential ecological attributes, such as species shifts, loss of diversity, impacts to threatened and endangered species, and alteration of native fire cycles. Ambient particulate matter soils and damages materials and structures. Physical damage is caused mainly by deposited particulate nitrates and sulfates. Impaired aesthetic qualities from soiling are caused mainly by particles consisting primarily of carbonaceous compounds. Atmospheric particles can alter the Earth's energy balance by both scattering and absorbing radiation through the Earth's atmosphere. Other impacts of atmospheric particles are associated with their role in affecting the radiative properties of clouds,

through changes in the number and size distribution of cloud droplets, and by altering the amount of ultraviolet solar radiation penetrating through the atmosphere to ground level.

EPA's final rule on National Ambient Air Quality Standard for Particulate Matter, Section IV.B provides additional discussion on the environmental impact of fine particulates. (71 Fed. Reg. 61144, at 61203 to 61210, October 17, 2006.) Also, as stated in the Social Impact section above, maintaining the PM_{2.5} NAAQS results in several health and welfare benefits.

Sulfur

The proposed deletion of N.J.A.C. 7:27-7.2(k)2, which exempts the discharge of sulfur compounds from any stack or chimney under abnormal emergency conditions, will not have an environmental impact, since this exemption is not included in any permits issued by the Department at this time; however, its deletion will remove any possibility of a facility being granted such a waiver. SO₂ is produced when elemental sulfur is involved in a combustion process. SO₂ emissions contribute to the adverse environmental impacts from acid rain. Acid rain causes damage to forests, soil, and aquatic ecosystems; damage to infrastructure and human health; and reduces visibility. Sulfuric acid is formed when SO₂ emissions are released during fuel combustion. These pollutants stay in the air for days, sometimes travelling thousands of miles. Precipitation washes these acids out of the atmosphere as acid rain. In addition to formation of acid rain, SO₂ also condenses into an aerosol component of fine particulate matter, or PM_{2.5}.

Emissions Statements

The Department anticipates that there will be no environmental impact from the proposed amendments to N.J.A.C. 7:27-21 that requires the reporting of PM_{2.5} and ammonia at the source level instead of the facility level. This does not affect the allowable or actual emission rates of

these air contaminants. In addition, this level of reporting is consistent with the current practice of the regulated community in New Jersey, and Federal requirements.

Federal Standards Statement

Executive Order No. 27 (1994) and N.J.S.A. 52:14B-1 et seq. (P.L. 1995, c. 65), require State agencies that adopt, readopt, or amend State rules that exceed any Federal standards or requirements to include in the rulemaking document a Federal standards analysis. None of the proposed amendments exceeds any Federal standard or requirement.

PM_{2.5} New Source Review (NSR)

Federal law requires New Jersey to promulgate the Federal NSR requirements in its rules. The proposed amendments to N.J.A.C. 7:27-18 reflect, but do not go beyond, the Federal requirements in Appendix S. There are no specific Federal requirements for the minor permitting program, per se, which the Department regulates at N.J.A.C. 7:27-8. Rather, 40 CFR Part 51, Subpart I, requires the State to regulate minor sources to control air pollution and attain and maintain the NAAQS, without setting any specific standards or requirements for the regulated entities. Thus, for minor sources, there is no comparable Federal standard exceeded by this rulemaking and no Federal regulatory scheme that might be perceived to be duplicated or overlapped by this rulemaking. Adding permitting requirements for PM_{2.5} in N.J.A.C. 7:27-22 is consistent with and no more stringent than the Federal requirement. The issuance of operating permits for major sources in New Jersey is controlled by Title V of the Clean Air Act, 42 U.S.C. §§ 7661-7661f and New Jersey's Federally enforceable Title V Operating Permit Program, at N.J.A.C. 7:27-22.

The proposed amendments to the Department's permitting program rules do not impose standards or requirements that exceed any Federal standards or requirements for major sources. (The Federal permitting requirements for nonattainment NSR are in Appendix S.) Similarly, the proposed amendments to N.J.A.C. 7:27-8 and 22 are consistent with the Federal requirements for the sources regulated in these rules at 40 CFR Part 51, Subpart I, and 40 CFR Part 70, respectively. Accordingly, no Federal standards analysis is required for these proposed amendments to N.J.A.C. 7:27-8, 18, 21, and 22.

Sulfur

The proposed deletion of an exemption under emergency conditions is necessary since on May 22, 2015, EPA determined that the exclusion at N.J.A.C. 7:27-7.2(k)2, which is part of the State's SIP, does not meet the CAA requirements (80 Fed. Reg. 33840, June 12, 2015). Accordingly, N.J.A.C. 7:27-7, as amended, does not exceed any Federal standards or requirements, and so no Federal standards analysis is required.

Emission Statements

The proposed amendments to N.J.A.C. 7:27-21.5(e)2 do not exceed Federal requirements; instead, they would make the State's reporting requirements consistent with (but no more stringent than) Federal requirements by requiring the reporting of PM_{2.5} and ammonia at the source level. The removal of the option to submit Emission Statements using e-mail is consistent with and does not exceed the requirements of CROMERR. None of the other proposed changes relate to or exceed Federal standards or requirements. Accordingly, no Federal standards analysis is required.

Jobs Impact

The Department anticipates that the proposed amendments will have no impact on job creation or retention in New Jersey.

PM_{2.5} New Source Review (NSR)

The proposed inclusion of the Federal PM_{2.5} requirements specified in Appendix S into the Department's rules should have no impact on jobs. The Department has been implementing the Federal PM_{2.5} permitting requirements in New Jersey air permits since July 15, 2008, the effective date of the May 16, 2008, Federal NSR rule. The proposed amendments do not add requirements that are not already imposed by Appendix S, and so affected facilities and their consultants will not have to modify their workforce because of these amendments. The proposed amendments require that the same evaluations and documentation would have to be submitted, and the same air pollution control strategies would have to be implemented as are required pursuant to Appendix S. This applies to facilities that are not major, since Federal rules (40 CFR Part 51, Subpart I) require the State to regulate minor sources to control air pollution and attain and maintain the NAAQS. Since minor sources are already required to demonstrate that they would not exceed the NAAQS and not exceed the emission levels that would subject them to the proposed amendments to N.J.A.C. 7:27-18, there will be no additional required work effort and, thus, no impact on jobs.

Sulfur

The deletion of the exclusion under N.J.A.C. 7:27-7.2(k)2 for releases, under emergency conditions, from pressure-relieving stacks and chimneys will have no impact on jobs, since no air pollution control permits contain this exclusion.

Emission Statements

The proposed amendments to N.J.A.C. 7:27-21 will have no impact on jobs. The proposed elimination of the option to submit an emissions statement to the Department by e-mail will not affect employment in New Jersey. No jobs will be lost or gained in this recognition of the move to the use of Federally required electronic media. Similarly, the reporting of PM_{2.5} and ammonia at the source level, and not the facility level, and the update to the certification methods will not affect employment, since no additional personnel need to be hired to comply with these requirements.

Agriculture Industry Impact

The proposed amendments are expected to have no direct impact on the State's agriculture industry. To the extent that the proposed amendments to the permitting rules assist in controlling ambient air levels of PM_{2.5}, they may have a positive impact on agriculture by reducing damage to crops and interference with photosynthesis, as discussed in the Environmental Impact above.

Regulatory Flexibility Analysis

As required by the New Jersey Regulatory Flexibility Act, N.J.S.A. 52:14B-16 et seq., the Department has evaluated any reporting, recordkeeping, and other compliance requirements that the proposed amendments would impose upon small businesses. The Regulatory Flexibility Act defines the term "small business" as "any business which is a resident in this State, independently owned and operated and not dominant in its field, and which employs fewer than 100 full-time employees."

PM_{2.5} New Source Review (NSR)

The provisions of N.J.A.C. 7:27-18 apply to a facility that emits at or above the major facility thresholds. They also apply to a facility proposing an emission increase of an air contaminant that by itself equals or exceeds the major facility thresholds. Some small businesses may meet the definition of “major facility” and would be subject to N.J.A.C. 7:27-18 and associated amendments to N.J.A.C. 7:27-8 and 22. However, these businesses are already subject to the reporting, recordkeeping, and other compliance requirements of Appendix S, which are being incorporated into N.J.A.C. 7:27-18 and associated provisions in N.J.A.C. 7:27-8 and 22. Consequently, there would be no additional burden on these small businesses.

For small businesses that are not major facilities pursuant to N.J.A.C. 7:27-18 and 22 (that is, minor facilities), the Department is proposing a PM_{2.5} reporting threshold (0.05 lb/hr) and SOTA applicability level (5.0 TPY) at N.J.A.C. 7:27-8. This new threshold will have minimal impact on the minor facilities that are subject to N.J.A.C. 7:27-8. When these minor facilities apply to the Department for a modification to the existing source operation or for a new source operation, the proposed amendments at N.J.A.C. 7:27-8 would require the PM_{2.5} emissions to be reported on the air pollution control permit application if the emissions exceed the “0.05 lb/hr” threshold, which is the same as the PM₁₀ threshold. The calculation and listing of the PM_{2.5} emissions in the air pollution control permit application should not be onerous, since EPA has developed emission factors for filterable and condensable particulate matter for many types of source operations. As these emission factors are available at EPA’s website (www.epa.gov/ttn/chief/ap-42), applicants should be able to estimate PM_{2.5} emissions or base them on the methodology used and assumptions made to determine the PM₁₀ emissions without incurring additional cost.

The proposed SOTA level for PM_{2.5} will also have minimal, if any, impact on minor facilities, because the facilities must already comply with the SOTA level for PM₁₀ in N.J.A.C. 7:27-8. The PM₁₀ and PM_{2.5} emissions are comprised of a condensable particulate matter fraction and a filterable particulate matter fraction. Both fractions are controlled by the same air pollution control device.

Sulfur

The deletion of the exclusion under N.J.A.C. 7:27-7.2(k)2 for releases, under emergency conditions, from pressure-relieving stacks and chimneys will have no impact on small businesses since no air pollution control permits contain this exclusion.

Emission Statements

The proposed amendments to N.J.A.C. 7:27-21 will have no impact on small businesses. Although some small businesses do have to submit Emission Statements, the proposed removal of the option to e-mail an Emission Statement to the Department will not affect these businesses since the Emission Statements are already prepared electronically and can be submitted electronically through NJDEP Online. The proposed reporting of PM_{2.5} and ammonia at the source level, and not the broader facility level, will not affect these facilities. The source level emissions already have to be determined in order to calculate the facility level emissions. In addition, the proposed update to the certification methods only clarifies the methods, and imposes no additional reporting requirements.

Housing Affordability Impact Analysis

Pursuant to N.J.S.A. 52:14B-4, the Department has evaluated the proposed amendments to determine their impact, if any, on the affordability of housing. The proposed amendments

address permitting requirements for major and minor sources, Emission Statements, and the deletion of an exemption to sulfur emission requirements. Accordingly, it is extremely unlikely that the proposed amendments will have an impact on the affordability of housing units or result in a change in the average costs associated with such housing.

Smart Growth Development Impact Analysis

In accordance with N.J.S.A. 52:14B-4, the Department has evaluated the proposed amendments to determine their impact, if any, on housing production within Planning Areas 1 or 2, or within designated centers under the State Development and Redevelopment Plan. The proposed amendments are not expected to affect the residential sector; rather, they address permitting requirements for major and minor sources, Emission Statements, and the deletion of an exemption to sulfur emission requirements, none of which affect housing production in New Jersey. Therefore, it is extremely unlikely that the amendments will evoke a change in housing production in Planning Areas 1 or 2, or within designated centers.

Full text of the proposal follows (additions indicated in boldface **thus**; deletions indicated in brackets [thus]):

SUBCHAPTER 7. SULFUR

7:27-7.2 Control and prohibition of air pollution from sulfur compounds

(a) – (j) (No change.)

(k) The provisions of this Subchapter shall not apply to[

1. The] **the** discharge of sulfur compounds in the form of gases, vapors or liquid particles resulting from the combustion of commercial fuel[; or].

[2. The discharge from any stack or chimney having the sole function of relieving pressure of gas, vapor or liquid under abnormal emergency conditions.]

(l) – (r) (No change.)

SUBCHAPTER 8. PERMITS AND CERTIFICATES FOR MINOR FACILITIES (AND MAJOR FACILITIES WITHOUT AN OPERATING PERMIT)

7:27-8.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

...

“Major facility” means a facility [which] **that** has the potential to emit any of the air contaminants listed below in an amount [which] **that** is equal to or exceeds the applicable major facility threshold level given below. The major facility threshold levels are as follows:

<u>Air contaminant</u>	<u>Major Facility Threshold Level</u>
[Carbon monoxide] CO	100 tons per year
[PM-10] PM₁₀	100 tons per year
PM_{2.5}	100 tons per year
...	
[Sulfur dioxides] SO₂	100 tons per year
SO₂ (as a PM_{2.5} precursor)	100 tons per year

...	
NO_x (as a PM_{2.5} precursor)	100 tons per year
...	
Any other air contaminant, except CO ₂	100 tons per year

“NO_x” or “oxides of nitrogen” means all oxides of nitrogen including, but not limited to, nitric oxide and nitrogen dioxide, except nitrous oxide.

“[PM-10] PM₁₀” means a class of air contaminants [which] **that** includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 10 [micrometers] **microns**.

“PM_{2.5}” means a class of air contaminants that includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 2.5 microns.

“SO₂” or “sulfur dioxide” means a gas that has a molecular composition of one sulfur atom and two oxygen atoms.

APPENDIX 1

TABLE A

Reporting and SOTA thresholds

(Potential to emit)

	Reporting	SOTA Threshold ²
<u>Air contaminant</u>	Threshold ¹	<u>(in tons/yr)</u>

(in lbs/hour)

...		
[PM-10] PM₁₀	0.05	5.0
PM_{2.5}	0.05	5.0
...		

Footnotes 1 through 3 (No change.)

TABLE B

(No change.)

SUBCHAPTER 18. CONTROL AND PROHIBITION OF AIR POLLUTION FROM NEW OR ALTERED SOURCES AFFECTING AMBIENT AIR QUALITY (EMISSION OFFSET RULES)

7:27-18.1 Definitions

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

...

“EPA” means the United States Environmental Protection Agency.

...

“NO_x” or “oxides of nitrogen” means all the oxides of nitrogen including, but not limited to, nitric oxide and nitrogen dioxide, except nitrous oxide.

...

[“Oxides of nitrogen” or “NO_x” means all the oxides of nitrogen including, but not limited to, nitric oxide and nitrogen dioxide, except nitrous oxide.]

...

[“PM-10”] **“PM₁₀”** means a class of air contaminants [which] **that** includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 10 microns.

“PM_{2.5}” means a class of air contaminants that includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 2.5 microns.

“PM_{2.5} inter-pollutant offset” means a creditable emission reduction of PM_{2.5}, or of a PM_{2.5} precursor, used in a PM_{2.5} nonattainment area to offset an emission increase of PM_{2.5}, or of a PM_{2.5} precursor, to provide a net air quality benefit.

...

“Respective criteria pollutant” means the corresponding criteria pollutant for each air contaminant listed in Table 3 of N.J.A.C. 7:27-18.7. The following are the air contaminants listed in Table 3, and their respective criteria pollutants:

Category of Air Contaminants	Respective Criteria Pollutant
...	
[PM-10] PM₁₀	[PM-10] PM₁₀
PM_{2.5}	PM_{2.5}
SO ₂	SO ₂ and PM _{2.5}
...	
NO _x	NO ₂ , [and] O ₃ , and PM _{2.5}
...	

...

“SO₂” or “sulfur dioxide” means a gas that has a molecular composition of one sulfur atom and two oxygen atoms.

...

[“Sulfur dioxide” or “SO₂” means a gas that has a molecular composition of one sulfur atom and two oxygen atoms.]

...

7:27-18.2 Facilities subject to this subchapter

(a) This subchapter applies to certain applications, submitted to the Department pursuant to N.J.A.C. 7:27-8 or [N.J.A.C. 7:27-]22 for authorization to construct, reconstruct, or modify control apparatus or equipment at a facility, if the requirements at (b) or (c) below apply and:

1. The facility has the potential to emit any of the air contaminants listed below in an amount [which] **that** is equal to or exceeds the following threshold levels:

[Air contaminant

Threshold level

Carbon Monoxide

100 tons per year

PM-10

100 tons per year

TSP

100 tons per year

Sulfur dioxide

100 tons per year

Nitrogen oxides

25 tons per year

VOC

25 tons per year

Lead

10 tons per year; or]

Air Contaminant	Threshold Level
CO	100 tons per year
PM₁₀	100 tons per year
PM_{2.5}	100 tons per year
TSP	100 tons per year
SO₂	100 tons per year
SO₂ (as a PM_{2.5} precursor)	100 tons per year
NO_x	25 tons per year
NO_x (as a PM_{2.5} precursor)	100 tons per year
VOC	25 tons per year
Lead	10 tons per year; or

2. (No change.)

(b) - (d) (No change.)

7:27-18.4 Air quality impact analysis

(a) Any person, subject to this subchapter pursuant to N.J.A.C. 7:27-18.2(a) and (b), who proposes to cause a significant net emission increase of an air contaminant listed in Table 3 of N.J.A.C. 7:27-18.7, not including VOC, shall conduct an air quality impact analysis to determine whether the proposed net emission increase would result in an increase in the ambient

concentration of the respective criteria pollutant, not including ozone, and shall determine whether the increase in ambient concentration would:

1. – 2. (No change.)

TABLE 1
SIGNIFICANT AIR QUALITY IMPACT LEVELS FOR
INCREASES IN AMBIENT AIR CONCENTRATIONS
IN NON ATTAINMENT AREAS

Pollutant	Averaging Time				
	Annual	24-Hour	8-Hour	3-Hour	1-Hour
...					
[PM-10] PM₁₀	1.0 μ/m^3	5 μ/m^3			
PM_{2.5}	0.3 μ/m^3	1.2 μ/m^3			

* μ/m^3 = micrograms per cubic meter

(b) - (c) (No change.)

7:27-18.5 Standards for use of emission reductions as emission offsets

(a) – (b) (No change.)

(c) Any use of emission reductions to offset an emission increase shall result in a net air quality benefit. Except as provided in (e), (f), [or] (g), **or (I)** below, such net air quality benefit shall be

demonstrated by showing that the ratio of emission offsets to the proposed net increase in allowable emissions equals or exceeds the minimum offset ratio, specified in Table 2 below, that is applicable based on the distance between the facility and the location of the emission reductions being proposed as emission offsets.

TABLE 2

MINIMUM OFFSET [RATION] RATIO

Air Contaminant	Distance (miles)	Minimum Offset Ratio (Reductions: Increase)
...		
NO_x (as a PM_{2.5} precursor)	Any	1.0:1.0
...		
SO₂ (as a PM_{2.5} precursor)	Any	1.0:1.0
...		
[PM-10] PM₁₀	0-0.5	1.0:1.0
	0.5-1.0	1.5:1.0
	1.0-2.0	2.0:1.0
PM_{2.5}	Any	1.0:1.0
...		

(d) – (e) (No change.)

(f) Notwithstanding (e) above, in no case shall the minimum offset ratio be less than:

1. For CO, NO_x (as a PM_{2.5} precursor), and SO₂ (as a PM_{2.5} precursor), 1.00:1.00;
and

2. (No change.)

(g) Creditable emission reductions may be used as emission offsets only [if they are emission reductions of the same category of air contaminant, and must be]:

1. If they are qualitatively equivalent in their effects on public health and welfare to the effects attributable to the proposed increase[.]; **and**

2. If they are emission reductions of the same category of air contaminant, except as provided at (l) below.

(h) – (k) (No change.)

(l) An applicant that provides for the use of PM_{2.5} inter-pollutant offsets shall demonstrate the net air quality benefit required at (c) above by showing that the ratio of emission offsets to the proposed net increase in allowable emissions equals or exceeds one of the following minimum offset ratios:

1. A PM_{2.5} inter-pollutant offset ratio established by the Department, approved by EPA, and published by the Department in Technical Manual 1002, “Guidance on Preparing an Air Quality Modeling Protocol”;

2. A PM_{2.5} inter-pollutant offset ratio established by EPA and approved by the Department; or

3. A regional PM_{2.5} inter-pollutant offset ratio developed by the applicant or by a regional air pollution control organization that includes a technical demonstration showing a net air quality benefit, and is approved by the Department and EPA.

(m) When an NO_x offset is required pursuant to N.J.A.C. 7:27-18.3(c) or (d), the NO_x offset shall be secured based on the more stringent of the two applicable NO_x offset ratios.

(n) PM_{2.5} inter-pollutant offsets cannot be used to determine significant net emission increase levels pursuant to N.J.A.C. 7:27-18.7.

7:27-18.7 Determination of a net emission increase or a significant net emission increase

(a) Any calculation to determine whether the maximum allowable emissions proposed in an application for a permit would result in a net emission increase or significant net emission increase at the facility of any air contaminant listed in Table 3 below shall be conducted in accordance with the following:

1. (No change.)
2. Compare the net emission increase of each air contaminant, derived pursuant to (a)1 above, to the significant net emission increase level for that air contaminant set forth in Table 3 below. If the net emission increase is equal to or greater than the applicable significant net emission increase level, it is a significant net emission increase.

TABLE 3
SIGNIFICANT NET EMISSION INCREASES

Air Contaminant	Significant Net Emission Increase Levels (tons per year)
SO ₂	40
SO₂ (as a PM_{2.5} precursor)	40
TSP	25
[PM-10] PM₁₀	15
PM_{2.5}	10
NO _x	25
NO_x (as a PM_{2.5} precursor)	40
CO	100
Pb	0.6
VOC	25

SUBCHAPTER 21. EMISSION STATEMENTS

7:27-21.1 Definitions

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise.

...

"Emission Statement Guidance Document" refers to the [1999] Emission Guidance Document, **version 2017.1, dated October 17, 2016**, and any addendum or subsequent revision, published at the Department's website at [<http://www.state.nj.us/dep/aqm/es/emission.html>] <http://www.nj.gov/dep/baqp/>. This publication is updated annually to incorporate the Department's latest guidance regarding Emission Statement policies, reporting procedures and format. This information is provided in order to assist the owner or operator of a facility subject to this subchapter with the process of completing, certifying and submitting an Emission Statement.

...

"PM_{2.5}" means a class of air contaminants [which] **that** includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 2.5 microns.

"PM₁₀" means a class of air contaminants [which] **that** includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 10 microns.

...

"RADIUS" means the Department's Remote Access Data Information User System, which is available at <http://www.nj.gov/dep/aqpp/radius.html>, and which includes the software provided by the Department for the electronic preparation and submittal to the Department of air permit applications and Emission Statements. "RADIUS" also means successor software that the Department makes available for the same purpose.

...

7:27-21.3 General provisions

(a) (No change.)

(b) An Emission Statement shall include the information required under N.J.A.C. 7:27-21.5 and shall include emission information for the following air contaminants:

1. If the facility's potential to emit VOC is less than 25 tons per year and if the facility's potential to emit each of the other air contaminants listed in Table 1 at N.J.A.C. 7:27-21.2 is less than the applicable reporting threshold set forth in Table 1 such that the facility is subject to Emission Statement requirements only because its potential to emit VOC is equal to or greater than 10 tons per year, emission information shall be reported only for:

i. The following three Table 1 air contaminants: VOC, NO_x, and CO, **reported at the source level**; and

ii. [Beginning with the Emission Statement for reporting year 2005 and for each year thereafter, each] **Each** of the toxic air pollutants [which] **that** are listed in N.J.A.C. 7:27-21, Appendix 1, Table 1 and for which the facility has a potential to emit that is equal to or greater than the applicable reporting threshold given in N.J.A.C. 7:27-8, Appendix 1, Table B, Reporting and SOTA Thresholds for HAPs, **reported at the facility level**;

2. If the facility's potential to emit VOC is equal to or greater than 25 tons per year or if the facility's potential to emit any other air contaminants listed in Table 1 at N.J.A.C. 7:27-21.2 is equal to or greater than the reporting threshold, emission information shall be reported for the following:

i. Each of the air contaminants listed in Table 1 at N.J.A.C. 7:27-21.2, [except that the reporting of emission information for PM_{2.5}] and NH₃ shall not begin until the Emission Statement for reporting year 2003] **reported at the source level**;

ii. [Beginning with the Emission Statement for reporting year 2003 and for each year thereafter, the] **The** greenhouse gases CO₂ and CH₄, **reported at the facility level**; and

iii. [Beginning with the Emission Statement for reporting year 2003 and for each year thereafter, each] **Each** of the toxic air pollutants [which] **that** are listed in N.J.A.C. 7:27-21, Appendix 1, Table 1 and for which the facility has a potential to emit that is equal to or greater than the applicable reporting threshold listed in N.J.A.C. 7:27-8, Appendix 1, Table B, Reporting and SOTA Thresholds for HAPs, **reported at the facility level.**

(c)-(h) (No change.)

7:27-21.4 Procedure for submitting an Emission Statement

(a) (No change.)

(b) For an Emission Statement submitted for reporting year 2002 or later, the following procedures apply:

1. Unless the owner or operator obtains approval pursuant to (d) below to submit an Emission Statement on paper, each Emission Statement shall be [submitted to the Department electronically] **prepared** using the Remote Access Data Information User System (RADIUS) software (or its successor software) available from the Department at the address given at (c) below, **and submitted either through NJDEP Online (www.njdeponline.com) or on a Department-accessible electronic storage medium (such as a CD) delivered to the Department at the address at (c) below;**

2. (No change.)

3. An Emission Statement shall be submitted to the Department by the following due date:

i. (No change.)

ii. For [electronic] submittals [(for example, those submitted by diskette or e-mail)] **either through NJDEP online (www.njdeponline.com) or on a**

Department-accessible electronic storage medium, by May 15 of the submittal year; this due date shall also apply to the paper copy of the Emission Statement submitted when certain information in the electronic version of the Emission Statement is claimed to be confidential.

(c) - (e) (No change.)

7:27-21.5 Required contents of an Emission Statement

(a) - (d) (No change.)

(e) [An Emission Statement shall include facility-wide emission information and emission information at the source operation level as follows:

1. Facility-wide emission information shall be given for all air contaminants required to be included in the facility's Emission Statement pursuant to N.J.A.C. 7:27-21.3(b); and

2. Emission information shall be given at the source operation level for all of the air contaminants listed in Table 1 at N.J.A.C. 7:27-21.2, except that:

i. Source operation level information shall not be reported for PM_{2.5} and NH₃; and

ii. If the facility's potential to emit VOC is less than 25 tons per year and if the facility's potential to emit each of the other air contaminants listed in Table 1 is

less than the applicable reporting threshold set forth in Table 1, source operation level emission information shall be given only for NO_x, VOC, and CO.]

(Reserved)

(f) - (j) (No change.)

7:27-21.8 Certification of information

(a) (No change.)

(b) Certification of an Emission Statement, pursuant to (a) above, shall be performed in accordance with the following:

1. If the Emission Statement is being submitted [electronically] **through NJDEP online**, the responsible official shall certify the submittal [either by signing the certification on a paper form obtained from the Department or] by inserting his or her personal identification number (PIN), as assigned by the Department, into the applicable signature area following the text of the certification language [given on the electronic Emission Statement form]; and this [signature or] insertion of a PIN shall constitute certification of the Emission Statement in accordance with (a) above; or

2. If the Emission Statement is being [submitted on a paper form obtained from] **provided to the Department[,]** **through the mail or by a courier service (such as USPS, FedEx, or UPS)** the responsible official shall sign the certification on the paper **certification form available at the website of the Bureau of Air Quality Planning at <http://www.nj.gov/dep/baqp/>**; and this signature shall constitute certification of the Emission Statement in accordance with the certification language at (a) above.

(c) (No change.)

SUBCHAPTER 22. OPERATING PERMITS

7:27-22.1 Definitions

The following words and terms, when used in this subchapter, have the meanings given below unless the context clearly indicates otherwise.

...

"Major facility" means a facility [which] **that** constitutes a major source, as defined by EPA at 40 CFR [§70.2] **70.2** or any subsequent amendments thereto, and that has the potential to emit any of the air contaminants listed below in an amount that is equal to or exceeds the applicable major facility threshold level. The major facility threshold levels are as follows:

<u>Air Contaminant</u>	<u>Major Facility Threshold Level</u>
[Carbon monoxide] CO	100 tons per year
[PM-10] PM₁₀	100 tons per year
PM_{2.5}	100 tons per year
TSP	100 tons per year
[Sulfur dioxide] SO₂	100 tons per year
SO₂ (as a PM_{2.5} precursor)	100 tons per year
[Oxides of nitrogen] NO_x	25 tons per year
NO_x (as a PM_{2.5} precursor)	100 tons per year
VOC	25 tons per year
Lead	10 tons per year
Any HAP	10 tons per year

All HAPs, collectively	25 tons per year
Any other air contaminant, except CO ₂	100 tons per year

...

"NO_x" or "oxides of nitrogen" means all oxides of nitrogen, except nitrous oxide, as measured by test methods approved by the Department and EPA, such as the test methods set forth at 40 CFR 60, Appendix A, Methods 7 through 7E.

...

["Oxides of nitrogen" or "NO_x" means all oxides of nitrogen, except nitrous oxide, as measured by test methods approved by the Department and EPA, such as the test methods set forth at 40 CFR 60, Appendix A, Methods 7 through 7E.]

...

["PM-10"] **"PM₁₀"** means a class of air contaminants [which] **that** includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 10 [micrometers] **microns.**

"PM_{2.5}" means a class of air contaminants that includes all particulate matter having an aerodynamic diameter less than or equal to a nominal 2.5 microns.

...

"SO₂" or "sulfur dioxide" means a gas that has a molecular composition of one sulfur atom and two oxygen atoms.

...

["Sulfur dioxide" or "SO₂" means a gas that has a molecular composition of one sulfur atom and two oxygen atoms.]

...

7:27-22.2 Applicability

- (a) This subchapter applies to any facility [which] **that** is one of the following:
1. (No change.)
 2. A facility [which] **that** emits or has the potential to emit any of the air contaminants listed below in Table 1, in an amount [which] **that** equals or exceeds the threshold amount for that contaminant. Emissions of carbon dioxide ([CO2] **CO₂**) are not to be used in determining applicability under this section.

Table 1

<u>Air [contaminant] Contaminant</u>	<u>Threshold Level</u>
[Carbon Monoxide] CO	100 tons per year
[PM-10] PM₁₀	100 tons per year
PM_{2.5}	100 tons per year
TSP	100 tons per year
[Sulfur Dioxide] SO₂	100 tons per year
SO₂ (as a PM_{2.5} precursor)	100 tons per year
[Oxides of Nitrogen] NO_x	25 tons per year
NO_x (as a PM_{2.5} precursor)	100 tons per year
VOC	25 tons per year
Lead	10 tons per year

Any other [Air Contaminant] **air** 100 tons per year
contaminant, except CO₂

For the purpose of this paragraph, the calculation of potential to emit shall include fugitive emissions only if the facility falls into one or more of the following categories:

i. - xxvii. (No change.)

3. - 6. (No change.)

(b) - (e) (No change.)

7:27-22.8 Air quality simulation modeling and risk assessment

(a) An applicant for an initial operating permit for a new major facility, or for a minor modification or significant modification to an existing operating permit, shall conduct air quality simulation modeling in accordance with (c) below if:

1. – 2. (No change.)

3. The application includes relocation of a temporary facility to a site not specifically authorized in the operating permit, and air quality simulation modeling or risk assessment was required for the location(s) authorized in the operating permit; [or]

4. The application includes source operations which, based on screening procedures published in technical manuals by the Department, have the potential to cause any of the adverse air quality effects listed in (b)1 through 4 below[.]; **or**

5. The application is subject to the technical demonstration requirement set forth at N.J.A.C. 7:27-18.5(l)3.

(b)-(e) (No change.)

APPENDIX

TABLE A

Thresholds for Reporting Emissions of Air Contaminants

Other than Hazardous Air Pollutants (HAPs)

Air Contaminant	Hourly Emissions
	(pounds per hour)
VOC	0.05
TSP	0.05
[PM-10] PM₁₀	0.05
PM_{2.5}	0.05
NO _x	0.05
CO	0.05
SO ₂	0.05
Any other air contaminant ⁽¹⁾	0.05

(1) This air contaminant category shall apply to any other air contaminant (except CO₂), other than hazardous air pollutants (HAPs) that the facility has the potential to emit in a quantity greater than or equal to 100 tons per year.

TABLE B
(No change.)