ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R01–OAR–2010–1043; A–1–FRL–9496–5]

Approval and Promulgation of Air Quality Implementation Plans; Maine; Regional Haze

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing approval of a revision to the Maine State Implementation Plan (SIP) submitted by the Maine Department of Environmental Protection (Maine DEP) on December 9, 2010, with supplemental submittals on September 14, 2011 and November 9, 2011, that addresses regional haze for the first planning period from 2008 through 2018. This revision addresses the requirements of the Clean Air Act (CAA) and EPA's rules that require States to prevent any future, and remedy any existing, manmade impairment of visibility in mandatory Class I areas caused by emissions of air pollutants from numerous sources located over a wide geographic area (also referred to as the ''regional haze program''). States are required to assure reasonable progress toward the national goal of achieving natural visibility conditions in Class I areas.

DATES: Written comments must be received on or before December 29, 2011.

ADDRESSES: Submit your comments, identified by Docket ID Number EPA–R01–OAR–2010–1043 by one of the following methods:

1. *http://www.regulations.gov:* Follow the on-line instructions for submitting comments.
2. *Email: arnold.anne@epa.gov.*
3. *Fax:* (617) 918–0047.
4. *Mail:* ''Docket Identification Number EPA–R01–OAR–2010–1043 Anne Arnold, U.S. Environmental Protection Agency, EPA New England Regional Office, Office of Ecosystem Protection, Air Quality Planning Unit, 5 Post Office Square—Suite 100, (Mail code OEP05–2), Boston, MA 02109–3912.
5. *Hand Delivery or Courier.* Deliver your comments to: Anne Arnold, Manager, Air Quality Planning Unit, U.S. Environmental Protection Agency, EPA New England Regional Office, Office of Ecosystem Protection, Air Quality Planning Unit, 5 Post Office Square—Suite 100, (mail code OEP05–2), Boston, MA 02109–3912. Such deliveries are only accepted during the Regional Office's normal hours of operation. The Regional Office's official hours of business are Monday through Friday, 8:30 to 4:30, excluding legal holidays.

Instructions: Direct your comments to Docket ID No. EPA–R01–OAR–2010–1043. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *http://www.regulations.gov,* including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit through *http://www.regulations.gov,* or email, information that you consider to be CBI or otherwise protected. The *http://www.regulations.gov* Web site is an ''anonymous access'' system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to EPA without going through *http://www.regulations.gov* your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD–ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the electronic docket are listed in the *http://www.regulations.gov* index. Although listed in the index, some information is not publicly available, *i.e.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in *http://www.regulations.gov* or in hard copy at Office of Ecosystem Protection, U.S. Environmental Protection Agency, EPA New England Regional Office, Office of Ecosystem Protection, Air Quality Planning Unit, 5 Post Office Square—Suite 100, Boston, MA. EPA requests that if at all possible, you contact the contact listed in the **FOR FURTHER INFORMATION CONTACT** section to schedule your inspection. The Regional Office's official hours of business are Monday through Friday, 8:30 to 4:30, excluding legal holidays.

In addition, copies of the state submittal are also available for public inspection during normal business hours, by appointment at the Bureau of Air Quality Control, Department of Environmental Protection, First Floor of the Tyson Building, Augusta Mental Health Institute Complex, Augusta, ME 04333–0017.

FOR FURTHER INFORMATION CONTACT:
Anne McWilliams, Air Quality Unit, U.S. Environmental Protection Agency, EPA New England Regional Office, 5 Post Office Square—Suite 100, (Mail Code OEP05–02), Boston, MA 02109–3912, telephone number (617) 918–1697, fax number (617) 918–0697, email *mcwilliams.anne@epa.gov.*

SUPPLEMENTARY INFORMATION:

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Throughout this document, wherever ''we,'' ''us,'' or ''our'' is used, we mean the EPA.

I. What is the background for EPA's proposed action?

A. The Regional Haze Problem

Regional haze is visibility impairment that is produced by a multitude of sources and activities which are located across a broad geographic area and emit fine particles and their precursors (*e.g.,* sulfur dioxide, nitrogen oxides, and in some cases, ammonia and volatile organic compounds). Fine particle precursors react in the atmosphere to form fine particulate matter ($PM_{2.5}$) (*e.g.,* sulfates, nitrates, organic carbon, elemental carbon, and soil dust), which also impair visibility by scattering and absorbing light. Visibility impairment reduces the clarity, color, and visible distance that one can see. $PM_{2.5}$ can also cause serious health effects and mortality in humans and contributes to environmental effects such as acid deposition.

Data from the existing visibility monitoring network, the ''Interagency Monitoring of Protected Visual Environments'' (IMPROVE) monitoring network, show that visibility impairment caused by air pollution occurs virtually all the time at most national park and wilderness areas. The average visual range in many Class I areas (*i.e.,* national parks and memorial parks, wilderness areas, and international parks meeting certain size criteria) in the Western United States is 100–150 kilometers, or about one-half to two-thirds of the visual range that would exist without anthropogenic air pollution. In most of the eastern Class I areas of the United States, the average visual range is less than 30 kilometers, or about one-fifth of the visual range that would exist under estimated natural conditions. (64 FR 35715, (July 1, 1999))

B. Background Information

In section 169A(a)(1) of the 1977 Amendments to the CAA, Congress created a program for protecting visibility in the nation's national parks and wilderness areas. This section of the CAA establishes as a national goal the ''prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas [1] which impairment results from manmade air pollution.'' On December 2, 1980, EPA promulgated regulations to address visibility impairment in Class I areas that is ''reasonably attributable'' to a single source or small group of sources, *i.e.,* ''reasonably attributable visibility impairment'' (RAVI), (45 FR 80084). These regulations represented the first phase in addressing visibility impairment. EPA deferred action on regional haze that emanates from a variety of sources until monitoring, modeling and scientific knowledge about the relationships between pollutants and visibility impairment were improved.

Congress added section 169B to the CAA in 1990 to address regional haze issues. In 1993, the National Academy of Sciences determined that current knowledge of regional haze was adequate and that existing technologies were available to protect visibility. (64 FR 35714, 35714 (July 1, 1999)). EPA promulgated a rule to address regional haze on July 1, 1999 (64 FR 35714), the Regional Haze Rule. The Regional Haze Rule revised the existing visibility regulations to integrate into the regulation provisions addressing regional haze impairment and established a comprehensive visibility protection program for Class I areas. The requirements for regional haze, found at 40 CFR 51.308 and 51.309, are included in EPA's visibility protection regulations at 40 CFR 51.300–309. Some of the main elements of the regional haze requirements are summarized in section II. The requirement to submit a regional haze SIP applies to all 50 States, the District of Columbia and the Virgin Islands. Section 51.308(b) requires States to submit the first implementation plan addressing regional haze visibility impairment no later than December 17, 2007. On January 15, 2009, EPA found that 37 States, the District of Columbia and the U.S. Virgin Islands failed to submit this required implementation plan. (74 FR 2392, (Jan. 15, 2009)). In particular, EPA found that Maine failed to submit a plan that met the requirements of 40 CFR 51.308. (74 FR 2393). On December 6, 2010, the Air Bureau of the Maine DEP submitted revisions to the Maine SIP to address regional haze as required by 40 CFR 51.308. Supplemental documentation was submitted on September 14, 2011 and November 9, 2011. EPA has reviewed Maine's submittal and finds that it is consistent with the requirements of 40 CFR 51.308 outlined in section II.

C. Roles of Agencies in Addressing Regional Haze

Successful implementation of the regional haze program will require long-term regional coordination among States, Tribal governments and various federal agencies. As noted above, pollution affecting the air quality in Class I areas can be transported over long distances, even hundreds of kilometers. Therefore, to effectively address the problem of visibility impairment in Class I areas, States need to develop strategies in coordination with one another, taking into account the effect of emissions from one jurisdiction on the air quality in another.

Because the pollutants that lead to regional haze can originate from sources located across broad geographic areas, EPA has encouraged the States and Tribes across the United States to address visibility impairment from a regional perspective. Five regional planning organizations (RPOs) were developed to address regional haze and related issues. The RPOs first evaluated

[1] Areas designated as mandatory Class I Federal areas consist of national parks exceeding 6,000 acres, wilderness areas and national memorial parks exceeding 5,000 acres, and all international parks that were in existence on August 7, 1977 (42 U.S.C. 7472(a)). In accordance with section 169A of the CAA, EPA, in consultation with the Department of Interior, promulgated a list of 156 areas where visibility is identified as an important value (44 FR 69122, November 30, 1979). The extent of a mandatory Class I area includes subsequent changes in boundaries, such as park expansions (42 U.S.C. 7472(a)). Although states and Tribes may designate as Class I additional areas which they consider to have visibility as an important value, the requirements of the visibility program set forth in section 169A of the CAA apply only to ''mandatory Class I Federal areas.'' Each mandatory Class I Federal area is the responsibility of a ''Federal Land Manager'' (FLM). (42 U.S.C. 7602(i)). When we use the term ''Class I area'' in this action, we mean a ''mandatory Class I Federal area.''

technical information to better understand how their States and Tribes impact Class I areas across the country, and then pursued the development of regional strategies to reduce emissions of $PM_{2.5}$ and other pollutants leading to regional haze.

The Mid-Atlantic/Northeast Visibility Union (MANE–VU) RPO is a collaborative effort of state governments, Tribal governments, and various federal agencies established to initiate and coordinate activities associated with the management of regional haze, visibility and other air quality issues in the Northeastern United States. Member state and Tribal governments include: Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Penobscot Indian Nation, Rhode Island, and Vermont.

II. What are the requirements for regional haze SIPs?

A. The CAA and the Regional Haze Rule (RHR)

Regional haze SIPs must assure reasonable progress towards the national goal of achieving natural visibility conditions in Class I areas. Section 169A of the CAA and EPA's implementing regulations require States to establish long-term strategies for making reasonable progress toward meeting this goal. Implementation plans must also give specific attention to certain stationary sources that were in existence on August 7, 1977, but were not in operation before August 7, 1962, and require these sources, where appropriate, to install Best Available Retrofit Technology controls for the purpose of eliminating or reducing visibility impairment. The specific regional haze SIP requirements are discussed in further detail below.

B. Determination of Baseline, Natural, and Current Visibility Conditions

The RHR establishes the deciview (dv) as the principal metric for measuring visibility. This visibility metric expresses uniform changes in haziness in terms of common increments across the entire range of visibility conditions, from pristine to extremely hazy conditions. Visibility is determined by measuring the visual range (or deciview), which is the greatest distance, in kilometers or miles, at which a dark object can be viewed against the sky. The deciview is a useful measure for tracking progress in improving visibility, because each deciview change is an equal incremental change in visibility perceived by the human eye. Most people can detect a change in visibility at one deciview.[2]

The deciview is used to: Express Reasonable Progress Goals (RPGs) (which are interim visibility goals towards meeting the national visibility goal); define baseline, current, and natural conditions; and track changes in visibility. The regional haze SIPs must contain measures that ensure ''reasonable progress'' toward the national goal of preventing and remedying visibility impairment in Class I areas caused by manmade air pollution by reducing anthropogenic emissions that cause regional haze. The national goal is a return to natural conditions, *i.e.,* manmade sources of air pollution would no longer impair visibility in Class I areas.

To track changes in visibility over time at each of the 156 Class I areas covered by the visibility program and as part of the process for determining reasonable progress, States must calculate the degree of existing visibility impairment at each Class I area within the state at the time of each regional haze SIP submittal and periodically review progress every five years midway through each 10-year planning period. To do this, the RHR requires States to determine the degree of impairment (in deciviews) for the average of the 20 percent least impaired (''best'') and 20 percent most impaired (''worst'') visibility days over a specified time period at each of their Class I areas. In addition, States must also develop an estimate of natural visibility conditions for the purposes of comparing progress toward the national goal. Natural visibility is determined by estimating the natural concentrations of pollutants that cause visibility impairment and then calculating total light extinction based on those estimates. EPA has provided guidance to States regarding how to calculate baseline, natural and current visibility conditions in documents titled, *Guidance For Estimating Natural Visibility Conditions Under the Regional Haze Rule,* September 2003, (EPA–454/B–03–005), available at *www.epa.gov/ttncaaa1/t1/memoranda/rh_envcurhr_gd.pdf* [hereinafter *EPA's 2003 Natural Visibility Guidance*], and *Guidance for Tracking Progress Under the Regional Haze Rule,* September 2003 (EPA–454/B–03–004), available at *www.epa.gov/ttncaaa1/t1/memoranda/rh_tpurhr_gd.pdf* [hereinafter *EPA's 2003 Tracking Progress Guidance*].

[2] The preamble to the RHR provides additional details about the deciview (64 FR 35714, 35725 (July 1, 1999)).

For the first regional haze SIPs that were due by December 17, 2007, ''baseline visibility conditions'' were the starting points for assessing ''current'' visibility impairment. Baseline visibility conditions represent the degree of impairment for the 20 percent least impaired days and 20 percent most impaired days at the time the regional haze program was established. Using monitoring data from 2000 through 2004, States are required to calculate the average degree of visibility impairment for each Class I area within the state, based on the average of annual values over the five year period. The comparison of initial baseline visibility conditions to natural visibility conditions indicates the amount of improvement necessary to attain natural visibility, while the future comparison of baseline conditions to the then current conditions will indicate the amount of progress made. In general, the 2000–2004 baseline period is considered the time from which improvement in visibility is measured.

C. Determination of Reasonable Progress Goals (RPGs)

The vehicle for ensuring continuing progress towards achieving the natural visibility goal is the submission of a series of regional haze SIPs from the States that establish RPGs for Class I areas for each (approximately) 10-year planning period. The RHR does not mandate specific milestones or rates of progress, but instead calls for States to establish goals that provide for ''reasonable progress'' toward achieving natural (*i.e.,* ''background'') visibility conditions for their Class I areas. In setting RPGs, States must provide for an improvement in visibility for the most impaired days over the (approximately) 10-year period of the SIP, and ensure no degradation in visibility for the least impaired days over the same period.

States have significant discretion in establishing RPGs, but are required to consider the following factors established in the CAA and in EPA's RHR: (1) The costs of compliance; (2) the time necessary for compliance; (3) the energy and non-air quality environmental impacts of compliance; and (4) the remaining useful life of any potentially affected sources. States must demonstrate in their SIPs how these factors are considered when selecting the RPGs for the best and worst days for each applicable Class I area. (40 CFR 51.308(d)(1)(i)(A)). States have considerable flexibility in how they take these factors into consideration, as noted in EPA's *Guidance for Setting Reasonable Progress Goals under the Regional Haze Program,* (''EPA's

Reasonable Progress Guidance''), July 1, 2007, memorandum from William L. Wehrum, Acting Assistant Administrator for Air and Radiation, to EPA Regional Administrators, EPA Regions 1–10 (pp. 4–2, 5–1). In setting the RPGs, States must also consider the rate of progress needed to reach natural visibility conditions by 2064 (referred to as the ''uniform rate of progress'' or the ''glide path'') and the emission reduction measures needed to achieve that rate of progress over the 10-year period of the SIP. The year 2064 represents a rate of progress which States are to use for analytical comparison to the amount of progress they expect to achieve. In setting RPGs, each state with one or more Class I areas (''Class I State'') must also consult with potentially ''contributing states,'' *i.e.,* other nearby states with emission sources that may be affecting visibility impairment at the Class I State's areas. (40 CFR 51.308(d)(1)(iv)).

D. Best Available Retrofit Technology (BART)

Section 169A of the CAA directs States to evaluate the use of retrofit controls at certain larger, often uncontrolled, older stationary sources in order to address visibility impacts from these sources. Specifically, the CAA requires States to revise their SIPs to contain such measures as may be necessary to make reasonable progress towards the natural visibility goal, including a requirement that certain categories of existing stationary sources built between 1962 and 1977 procure, install, and operate the ''Best Available Retrofit Technology'' as determined by the state.(CAA 169A(b)(2)a)).[3] States are directed to conduct BART determinations for such sources that may be anticipated to cause or contribute to any visibility impairment in a Class I area. Rather than requiring source-specific BART controls, States also have the flexibility to adopt an emissions trading program or other alternative program as long as the alternative provides greater reasonable progress towards improving visibility than BART.

On July 6, 2005, EPA published the *Guidelines for BART Determinations Under the Regional Haze Rule* at Appendix Y to 40 CFR part 51 (hereinafter referred to as the ''BART Guidelines'') to assist States in determining which of their sources should be subject to the BART requirements and in determining appropriate emission limits for each applicable source. In making a BART applicability determination for a fossil fuel-fired electric generating plant with a total generating capacity in excess of 750 megawatts (MW), a state must use the approach set forth in the BART Guidelines. A state is encouraged, but not required, to follow the BART Guidelines in making BART determinations for other types of sources.

States must address all visibility impairing pollutants emitted by a source in the BART determination process. The most significant visibility impairing pollutants are sulfur dioxide (SO_2), nitrogen oxides (NO_X), and particulate matter (PM). EPA has stated that States should use their best judgment in determining whether volatile organic compounds (VOCs), or ammonia (NH_3) and ammonia compounds impair visibility in Class I areas.

The RPOs provided air quality modeling to the States to help them in determining whether potential BART sources can be reasonably expected to cause or contribute to visibility impairment in a Class I area. Under the BART Guidelines, States may select an exemption threshold value for their BART modeling, below which a BART eligible source would not be expected to cause or contribute to visibility impairment in any Class I area. The state must document this exemption threshold value in the SIP and must state the basis for its selection of that value. Any source with emissions that model above the threshold value would be subject to a BART determination review. The BART Guidelines acknowledge varying circumstances affecting different Class I areas. States should consider the number of emission sources affecting the Class I areas at issue and the magnitude of the individual sources' impacts. Any exemption threshold set by the state should not be higher than 0.5 deciviews (70 FR 39161, (July 6, 2005)).

In their SIPs, States must identify potential BART sources, described as ''BART-eligible sources'' in the RHR, and document their BART control determination analyses. The term ''BART-eligible source'' used in the BART Guidelines means the collection of individual emission units at a facility that together comprises the BART-eligible source. (70 FR 39161, (July 6, 2005)). In making BART determinations, section 169A(g)(2) of the CAA requires that States consider the following factors: (1) The costs of compliance; (2) the energy and non-air quality environmental impacts of compliance; (3) any existing pollution control technology in use at the source; (4) the remaining useful life of the source; and (5) the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology. States are free to determine the weight and significance to be assigned to each factor. (70 FR 39170, (July 6, 2005)).

A regional haze SIP must include source-specific BART emission limits and compliance schedules for each source subject to BART. Once a state has made its BART determination, the BART controls must be installed and in operation as expeditiously as practicable, but no later than five years after the date of EPA approval of the regional haze SIP, as required in the CAA (section 169(g)(4)) and in the RHR (40 CFR 51.308(e)(1)(iv)). In addition to what is required by the RHR, general SIP requirements mandate that the SIP must also include all regulatory requirements related to monitoring, recordkeeping, and reporting for the BART controls on the source. States have the flexibility to choose the type of control measures they will use to meet the requirements of BART.

E. Long-Term Strategy (LTS)

Section 51.308(d)(3) of the RHR requires that States include a LTS in their SIPs. The LTS is the compilation of all control measures a state will use to meet any applicable RPGs. The LTS must include ''enforceable emissions limitations, compliance schedules, and other measures as necessary to achieve the reasonable progress goals'' for all Class I areas within, or affected by emissions from, the state. (40 CFR 51.308(d)(3)).

When a state's emissions are reasonably anticipated to cause or contribute to visibility impairment in a Class I area located in another state, the RHR requires the impacted state to coordinate with the contributing States in order to develop coordinated emissions management strategies. (40 CFR 51.308(d)(3)(i)). In such cases, the contributing state must demonstrate that it has included in its SIP all measures necessary to obtain its share of the emission reductions needed to meet the RPGs for the Class I area. The RPOs have provided forums for significant interstate consultation, but additional consultations between States may be required to sufficiently address interstate visibility issues. This is especially true where two States belong to different RPOs.

States should consider all types of anthropogenic sources of visibility impairment in developing their LTS, including stationary, minor, mobile, and

[3] The set of ''major stationary sources'' potentially subject to BART are listed in CAA section 169A(g)(7).

area sources. At a minimum, States must describe how each of the seven factors listed below is taken into account in developing their LTS: (1) Emission reductions due to ongoing air pollution control programs, including measures to address RAVI; (2) measures to mitigate the impacts of construction activities; (3) emissions limitations and schedules for compliance to achieve the RPG; (4) source retirement and replacement schedules; (5) smoke management techniques for agricultural and forestry management purposes including plans as currently exist within the state for these purposes; (6) enforceability of emissions limitations and control measures; (7) the anticipated net effect on visibility due to projected changes in point, area, and mobile source emissions over the period addressed by the LTS. (40 CFR 51.308(d)(3)(v)).

F. Coordinating Regional Haze and Reasonably Attributable Visibility Impairment (RAVI) LTS

As part of the RHR, EPA revised 40 CFR 51.306(c) regarding the LTS for RAVI to require that the RAVI plan must provide for a periodic review and SIP revision not less frequently than every three years until the date of submission of the state's first plan addressing regional haze visibility impairment, which was due December 17, 2007, in accordance with 51.308(b) and (c). On or before this date, the state must revise its plan to provide for review and revision of a coordinated LTS for addressing reasonably attributable and regional haze visibility impairment, and the state must submit the first such coordinated LTS with its first regional haze SIP. Future coordinated LTS's, and periodic progress reports evaluating progress towards RPGs, must be submitted consistent with the schedule for SIP submission and periodic progress reports set forth in 40 CFR 51.308(f) and 51.308(g), respectively. The periodic reviews of a state's LTS must report on both regional haze and RAVI impairment and must be submitted to EPA as a SIP revision.

G. Monitoring Strategy and Other Implementation Plan Requirements

Section 51.308(d)(4) of the RHR includes the requirement for a monitoring strategy for measuring, characterizing, and reporting of regional haze visibility impairment that is representative of all mandatory Class I Federal areas within the state. The strategy must be coordinated with the monitoring strategy required in section 51.305 for RAVI. Compliance with this requirement may be met through participation in the IMPROVE network. The monitoring strategy is due with the first regional haze SIP, and it must be reviewed every five years. The monitoring strategy must also provide for additional monitoring sites if the IMPROVE network is not sufficient to determine whether RPGs will be met.

The SIP must also provide for the following:

- Procedures for using monitoring data and other information in a state with mandatory Class I areas to determine the contribution of emissions from within the state to regional haze visibility impairment at Class I areas both within and outside the state;
- Procedures for using monitoring data and other information in a state with no mandatory Class I areas to determine the contribution of emissions from within the state to regional haze visibility impairment at Class I areas in other States;
- Reporting of all visibility monitoring data to the Administrator at least annually for each Class I area in the state, and where possible, in electronic format;
- Developing a statewide inventory of emissions of pollutants that are reasonably anticipated to cause or contribute to visibility impairment in any Class I area. The inventory must include emissions for a baseline year, emissions for the most recent year for which data are available, and estimates of future projected emissions. A state must also make a commitment to update the inventory periodically; and
- Other elements, including reporting, recordkeeping, and other measures necessary to assess and report on visibility.

Section 51.308(f) of the RHR requires control strategies to cover an initial implementation period extending to the year 2018, with a comprehensive reassessment and revision of those strategies, as appropriate, every 10 years thereafter. Periodic SIP revisions must meet the core requirements of section 51.308(d) with the exception of BART. The BART provisions of section 51.308(e), as noted above, apply only to the first implementation period. Periodic SIP revisions will assure that the statutory requirement of reasonable progress will continue to be met.

H. Consultation With States and Federal Land Managers (FLMs)

The RHR requires that States consult with FLMs before adopting and submitting their SIPs. (40 CFR 51.308(i)). States must provide FLMs an opportunity for consultation, in person and at least 60 days prior to holding any public hearing on the SIP. This consultation must include the opportunity for the FLMs to discuss their assessment of impairment of visibility in any Class I area and to offer recommendations on the development of the RPGs and on the development and implementation of strategies to address visibility impairment. Further, a state must include in its SIP a description of how it addressed any comments provided by the FLMs. Finally, a SIP must provide procedures for continuing consultation between the state and FLMs regarding the state's visibility protection program, including development and review of SIP revisions, five-year progress reports, and the implementation of other programs having the potential to contribute to impairment of visibility in Class I areas.

III. What is the relationship of the Clean Air Interstate Rule (CAIR) and the Cross-State Air Pollution Rule (CSAPR) to the regional haze requirements?

A. Overview of EPA's CAIR

CAIR, as originally promulgated, required 28 States and the District of Columbia to reduce emissions of SO_2 and NO_X that significantly contributed to, or interfered with maintenance of, the 1997 national ambient air quality standards (NAAQS) for fine particulates and/or the 1997 NAAQS for 8-hour ozone in any downwind state. (70 FR 25162, (May 12, 2005)). CAIR established emissions budgets for SO_2 and NO_X for States found to contribute significantly to nonattainment in downwind States and required these States to submit SIP revisions that implemented these budgets. States had the flexibility to choose which control measures to adopt to achieve the budgets, including participation in EPA-administered cap-and-trade programs addressing SO_2, NO_X-annual, and NO_X-ozone season emissions. In 2006, EPA promulgated FIPs for all States covered by CAIR to ensure the reductions were achieved in a timely manner.

B. Remand of the CAIR

On July 11, 2008, the DC Circuit issued its decision to vacate and remand both CAIR and the associated CAIR FIPs in their entirety. *See North Carolina* v. *EPA,* 531 F.3d 836 (DC Cir. 2008). However, in response to EPA's petition for rehearing, the Court issued an order remanding CAIR to EPA without vacating either CAIR or the CAIR FIPs. The Court thereby left the EPA CAIR rule and CAIR SIPs and FIPs in place in order to ''temporarily preserve the environmental values covered by CAIR'' until EPA replaces it with a rule consistent with the court's opinion. *See North Carolina* v. *EPA,* 550 F.3d at 1178. The Court directed EPA to ''remedy CAIR's flaws'' consistent with its July 11, 2008, opinion but declined to impose a schedule on EPA for completing that action. EPA subsequently issued a new rule to address interstate transport of NO_X and SO_2 in the eastern United States (*i.e.,* the Transport Rule, also known as the Cross-State Air Pollution Rule). (76 FR 48208, (August 8, 2011)). EPA explained in that action that EPA is promulgating the Transport Rule as a replacement for (not a successor to) CAIR's SO_2 and NO_X emissions reduction and trading programs.

C. Regional Haze SIP Elements Potentially Affected by the CAIR Remand and Promulgation of CSAPR

The following is a summary of the elements of the regional haze SIPs that are potentially affected by the remand of CAIR. As described above, EPA determined in 2005 that States opting to participate in the CAIR cap-and-trade program need not require BART for SO_2 and NO_X at BART-eligible Electric Generating Units (EGUs). (70 FR 39142–39143). Many States relied on CAIR as an alternative to BART for SO_2 and NO_X for subject EGUs, as allowed under the BART provisions at 40 CFR 51.308(e)(4). Additionally, several States established RPGs that reflect the improvement in visibility expected to result from controls planned for or already installed on sources within the State to meet the CAIR provisions for this implementation period for specified pollutants. Many States relied upon their own CAIR SIPs or the CAIR FIPs for their States to provide the legal requirements which lead to these planned controls, and did not include enforceable measures in the LTS in the regional haze SIP submission to ensure these reductions. States also submitted demonstrations showing that no additional controls on EGUs beyond CAIR would be reasonable for this implementation period.

IV. What is EPA's analysis of Maine's regional haze SIP submittal?

On December 6, 2010, Maine DEP's Air Bureau submitted revisions to the Maine SIP to address regional haze as required by 40 CFR 51.308. Supplemental documentation was submitted on September 14, 2011 and November 9, 2011. EPA has reviewed Maine's submittal and finds that it is consistent with the requirements of 40 CFR 51.308 outlined in section II. A detailed analysis follows.

Maine is responsible for developing a regional haze SIP which addresses visibility in Maine's Class I areas. They are Acadia National Park, Moosehorn Wilderness Area, and Roosevelt Campobello International Park. The State must also address Maine's impact on any other nearby Class I areas.

A. Maine's Affected Class I Area

Maine is home to three Class I areas: (1) Acadia National Park ('Acadia'); (2) Moosehorn Wilderness Area ('Moosehorn'); and (3) Roosevelt Campobello International Park ('Roosevelt Campobello'). In addition to these areas, the MANE–VU RPO contains four other Class I areas in three States: The Lye Brook, Presidential Range/Dry River, and Great Gulf Wilderness Areas in New Hampshire; and the Brigantine Wilderness Area in New Jersey.

The Maine regional haze SIP establishes RPGs for visibility improvement at its Class I areas and a LTS to achieve those RPGs within the first regional haze implementation period ending in 2018. In developing the RPGs for each Class I area, Maine considered both emission sources inside and outside of Maine that may cause or contribute to visibility impairment in Maine's Class I areas. The State also identified and considered emission sources within Maine that may cause or contribute to visibility impairment in Class I areas in neighboring States as required by 40 CFR 51.308(d)(3). The MANE–VU RPO worked with the State in developing the technical analyses used to make these determinations, including state-by-state contributions to visibility impairment in specific Class I areas, which included the three areas in Maine and those areas affected by emissions from Maine.

B. Determination of Baseline, Natural and Current Visibility Conditions

As required by the RHR and in accordance with EPA's 2003 Natural Visibility Guidance, Maine calculated baseline/current and natural conditions for its Class I areas.

1. Estimating Natural Visibility Conditions

Natural background refers to visibility conditions that existed before human activities affected air quality in the region. The national goal, as set out in the Clean Air Act, is a return to natural conditions.

Estimates of natural visibility conditions are based on annual average concentrations of fine particle components. The IMPROVE [4] equation is a formula for estimating light extinction from species measured by the IMPROVE monitors. As documented in EPA's 2003 Natural Visibility Guidance, EPA determined, with concurrence from the IMPROVE Steering Committee, that States may use a ''refined approach'' to the then current IMPROVE formula to estimate the values that characterize the natural visibility conditions of the Class I areas. The purpose of the refinement to the ''old IMPROVE equation'' is to provide more accurate estimates of the various factors that affect the calculation of light extinction. The new IMPROVE equation takes into account the most recent review of the science [5] and it accounts for the effect of particle size distribution on light extinction efficiency of sulfate, nitrate, and organic carbon. It also adjusts the mass multiplier for organic carbon (particulate organic matter) by increasing it from 1.4 to 1.8. New terms are added to the equation to account for light extinction by sea salt and light absorption by gaseous nitrogen dioxide. Site-specific values are used for Rayleigh scattering (scattering of light due to atmospheric gases) to account for the site-specific effects of elevation and temperature. Separate relative humidity enhancement factors are used for small and large size distributions of ammonium sulfate and ammonium nitrate and for sea salt. The terms for the remaining contributors, elemental

[4] The Interagency Monitoring of Protected Visual Environments (IMPROVE) program is a cooperative measurement effort governed by a steering committee composed of representatives from Federal (including representatives from EPA and the FLMs) and RPOs. The IMPROVE monitoring program was established in 1985 to aid the creation of Federal and State implementation plans for the protection of visibility in Class I areas. One of the objectives of IMPROVE is to identify chemical species and emission sources responsible for existing man-made visibility impairment. The IMPROVE program has also been a key participant in visibility-related research, including the advancement of monitoring instrumentation, analysis techniques, visibility modeling, policy formulation and source attribution field studies.

[5] The science behind the revised IMPROVE equation is summarized in numerous published papers. *See, eg.,* J. L. Hand & W. C. Malm, *Review of the IMPROVE Equation for Estimating Ambient Light Extinction Coefficients—Final Report,* March 2006 (Interagency Monitoring of Protected Visual Environments (IMPROVE), Colorado State University, Cooperative Institute for Research in the Atmosphere, Fort Collins, CO), available at *http://vista.cira.colostate.edu/improve/publications/GrayLit/016_IMPROVEeqReview/IMPROVEeqReview.htm;* Marc Pitchford, *Natural Haze Levels II: Application of the New IMPROVE Alogrithm to Natural Species Concentrations Estimates: Final Report of the Natural Haze Levels II Committee to the RPO Monitoring/Data Analysis Workgroup,* Sept. 2006, *available at http://vista.cira.colostate.edu/improve/Publications/GrayLit/029_NaturalCondII/naturalhazelevelsIIreport.ppt.*

carbon (light-absorbing carbon), fine soil, and coarse mass terms, do not change between the original and new IMPROVE equations. Maine opted to use this refined approach, referred to as the ''new IMPROVE equation,'' for all of its areas.

Natural visibility conditions using the new IMPROVE equation were calculated separately for each Class I area by MANE–VU. EPA finds that the best and worst 20 percent natural visibility values for Acadia, Moosehorn, and Roosevelt Campobello as shown in Table 1 were calculated using the EPA guidelines.

2. Estimating Baseline Conditions

The Roosevelt Campobello International Park and the Moosehorn Wilderness Area do not contain an IMPROVE monitor. In cases where onsite monitoring is not available, 40 CFR 51.308(d)(2)(i) requires States to use the most representative monitoring available for the 2000–2004 period to establish baseline visibility conditions, in consultation with EPA. Maine used, and EPA concurs with the use of, 2000–2004 data from the IMPROVE monitor located one mile northeast from the Moosehorn Wilderness Area as representing Moosehorn and Roosevelt Campobello.

As explained in section III.B, for the first regional haze SIP, baseline visibility conditions are the same as current conditions. A five-year average of the 2000 to 2004 monitoring data was calculated for each of the 20 percent worst and 20 percent best visibility days for Acadia National Park and Moosehorn/Roosevelt Campobello. IMPROVE data records for the period 2000 to 2004 meet the EPA requirements for data completeness. (See page 2–8 of EPA's 2003 Tracking Progress Guidance.)

3. Summary of Baseline and Natural Conditions

For the Maine Class I areas, baseline visibility conditions on the 20 percent worst days are 22.89 deciviews at Acadia National Park and 21.72 deciviews at Moosehorn/Roosevelt Campobello. Natural visibility conditions for these areas are estimated to be 12.43 dv and 12.01 dv, respectively, on the 20 percent worst visibility days. The natural and background conditions for the Acadia National Park and Moosehorn Wilderness Area/Roosevelt Campobello International Park for both the 20 percent worst and 20 percent best days are presented in Table 1 below.

TABLE 1—NATURAL BACKGROUND AND BASELINE CONDITIONS FOR THE ACADIA NATIONAL PARK AND MOOSEHORN WILDERNESS AREA/ROOSEVELT CAMPOBELLO INTERNATIONAL PARK

Class I area	2000–2004 Baseline (dv)		Natural conditions (dv)	
	Worst 20%	Best 20%	Worst 20%	Best 20%
Acadia National Park	22.89	8.77	12.43	4.66
Moosehorn Wilderness Area and Roosevelt Campobello International Park	21.72	9.15	12.01	5.01

4. Uniform Rate of Progress

In setting the RPGs, Maine considered the uniform rate of progress needed to reach natural visibility conditions by 2064 (''glide path'') and the emission reduction measures needed to achieve that rate of progress over the period of the SIP to meet the requirements of 40 CFR 51.308(d)(1)(i)(B). As explained in EPA's Reasonable Progress Guidance document, the uniform rate of progress is not a presumptive target, and RPGs may be greater, lesser, or equivalent to the glide path.

For Acadia National Park, the overall visibility improvement necessary to reach natural conditions is the difference between the baseline visibility of 22.89 dv and natural background visibility of 12.43 dv, or an improvement of 10.46 dv for the 20 percent worst visibility days. For Moosehorn Wilderness area and Roosevelt Campobello International Park, the overall visibility improvement necessary to reach natural conditions is the difference between the baseline of 21.72 dv and natural background visibility of 12.01 dv, or an improvement of 9.71 dv for the 20 percent worst visibility days. Maine DEP must also ensure no degradation in visibility for the best 20 percent visibility days over the same period in accordance with 40 CFR 51.308(d)(1).

Maine's SIP submittal presents two graphs, one for the 20 percent best days, and one for the 20 percent worst days, for each Class I area. Maine constructed the graphs for the worst days (*i.e.,* the glide path) in accordance with EPA's 2003 Tracking Progress Guidance by plotting a straight graphical line from the baseline level of visibility impairment for 2000–2004 to the level of natural visibility conditions in 2064. For the best days, the graphs include a horizontal, straight line spanning from baseline conditions in 2004 out to 2018 to depict no degradation in visibility over the implementation period of the SIP. Maine's SIP shows that the State's RPG for its Class I areas provide for improvement in visibility for the 20 percent worst days over the period of the implementation plan and ensure no degradation in visibility for the 20 percent best visibility days over the same period in accordance with 40 CFR 51.308(d)(1).

C. Reasonable Progress Goals

As a state containing a Class I area, 40 CFR 51.308(d)(1) of the RHR requires Maine to develop the reasonable progress goals for visibility improvement during the first planning period.

1. Relative Contributions of Pollutants to Visibility Impairments

An important step toward identifying reasonable progress measures is to identify the key pollutants contributing to visibility impairment at each Class I area. To understand the relative benefit of further reducing emissions from different pollutants, MANE–VU developed emission sensitivity model runs using EPA's Community Multiscale Air Quality (CMAQ) air quality model [6] to evaluate visibility and air quality impacts from various groups of emissions and pollutant scenarios in the Class I areas on the 20 percent worst visibility days.

Regarding which pollutants are most significantly impacting visibility in the MANE–VU region, MANE–VU's contribution assessment demonstrated that sulfate is the major contributor to $PM_{2.5}$ mass and visibility impairment at Class I areas in the Northeast and Mid-

[6] CMAQ is a photochemical grid model. The model uses simulations of chemical reactions, emissions of $PM_{2.5}$ and $PM_{2.5}$ precursors, and the Pennsylvania State University/National Center for Atmospheric Research Mesoscale Meteorological Model to produce speciated $PM_{2.5}$ concentrations. For more information, see *http://www.epa.gov/asmdnerl/CMAQ/cmaq_model.html.*

Atlantic Region.[7] Sulfate particles commonly account for more than 50 percent of particle-related light extinction at northeastern Class I areas on the clearest days and for as much as, or more than, 80 percent on the haziest days. For example, at the Brigantine National Wildlife Refuge Class I area (the MANE–VU Class I area with the greatest visibility impairment), on the 20 percent worst visibility days in 2000 through 2004, sulfate accounted for 66 percent of the particle extinction. After sulfate, organic carbon (OC) consistently accounts for the next largest fraction of light extinction. Organic carbon accounted for 13 percent of light extinction on the 20 percent worst visibility days for Brigantine, followed by nitrate that accounts for 9 percent of light extinction.

The emissions sensitivity analyses conducted by MANE–VU predict that reductions in SO_2 emissions from EGU and non-EGU industrial point sources will result in the greatest improvements in visibility in the Class I areas in the MANE–VU region, more than any other visibility-impairing pollutant. As a result of the dominant role of sulfate in the formation of regional haze in the Northeast and Mid-Atlantic Region, MANE–VU concluded that an effective emissions management approach would rely heavily on broad-based regional SO_2 control efforts in the eastern United States.

Through source apportionment modeling MANE–VU assisted States in determining their contribution to the visibility impairment of each Class I area in the MANE–VU region. Maine and the other MANE–VU States adopted a weight-of-evidence approach which relied on several independent methods for assessing the contribution of different sources and geographic source regions to regional haze in the northeastern and mid-Atlantic portions of the United States. Details about each technique can be found in the NESCAUM Document *Contributions to Regional Haze in the Northeast and Mid-Atlantic United States,* August 2006 [hereinafter *MANE–VU Contribution Report*].[8]

The MANE–VU Class I States determined that any state contributing at least 2% of the total sulfate observed on the 20 percent worst visibility days in 2002 were contributors to visibility impairment at the Class I area. Connecticut, Rhode Island, Vermont, and the District of Columbia were determined to contribute less than 2% of sulfate at any of the MANE–VU Class I areas. States found to contribute 2% or more of the sulfate at any of the MANE–VU Class I areas were: Georgia, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

The contribution of Maine emissions to the total sulfate was determined to impact the visibility in not only the Maine Class I areas, but the Great Gulf Wilderness area in New Hampshire as well. The impact of sulfate on visibility is discussed in greater detail below.

EPA finds that Maine DEP has adequately demonstrated that emissions from Maine sources cause or contribute to visibility in nearby Class I Areas.

2. Procedure for Identifying Sources To Evaluate for Reasonable Progress Controls

In developing the 2018 reasonable progress goal, Maine relied primarily upon the information and analysis developed by MANE–VU to meet this requirement. Based on the contribution assessment, MANE–VU focused on SO_2 as the dominant contributor to visibility impairment at all MANE–VU Class I areas during all seasons. In addition, the Contribution Assessment found that only 25 percent of the sulfate at the MANE–VU Class I areas originate in the MANE–VU States. Sources in the Midwest and Southeast regions were responsible for 15 to 25 percent, respectively. Point sources dominated the inventory of SO_2 emissions. Therefore, MANE–VU's strategy includes additional measures to control sources of SO_2 both within the MANE–VU region and in other States that were determined to contribute to regional haze at the MANE–VU Class I Areas.

Based on information from the contribution assessment and additional emission inventory analysis, MANE–VU and Maine identified the following source categories for further examination for reasonable controls:

- Coal and oil-fired EGUs;
- Point and area source industrial, commercial and institutional boilers;
- Cement and Lime Kilns;
- Heating Oil; and
- Residential wood combustion.

MANE–VU analyzed these sources categories as potential sources of emission reductions for making reasonable progress based on the ''four statutory factors'' according to 40 CFR 51.308(d)(3)(V).

3. Application of the Four Clean Air Act Factors in the Reasonable Progress Analysis

As discussed in II.C above, Maine must consider the following factors in developing the RPGs: (1) Cost of compliance; (2) the time necessary for compliance; (3) the energy and non-air quality environmental impacts of compliance; and (4) the remaining useful life of any potentially affected sources. MANE–VU's four factor analysis can be found in ''Assessment of Reasonable Progress for Regional Haze in MANE–VU Class I Areas,'' July 9, 2007, otherwise known as the Reasonable Progress Report. This report has been included as part of the docket for this rulemaking.

Maine and the other MANE–VU States reviewed the Reasonable Progress Report, consulted with one another about possible controls measures, and agreed to the following measures as recommended strategies for making reasonable progress: Implementation of the BART requirements, a 90 percent reduction in SO_2 emissions from 167 EGUs identified as causing the greatest visibility impact[9] (or other equivalent emission reduction), and a reduction in the sulfur content of fuel oil. These measures are collectively known as the MANE–VU ''Ask.''

MANE–VU used model projections to calculate the RPG for the Class I areas in the MANE–VU area. Additional modeling details are provided in section IV.E.2. The projected improvement in visibility due to emission reductions expected by the end of the first period, 2018, is shown in Table 2.

[7] See the NESCAUM Document ''Regional Haze and Visibility in the Northeast and Mid-Atlantic States,'' January 31, 2001.

[8] The August 2006 NESCAUM document ''Contributions to Regional Haze in the Northeast and Mid-Atlantic United States'' has been provided as part of the docket to this proposed rulemaking.

[9] MANE–VU identified these 167 units based on source apportionment modeling using two different meteorological data sets. From each of the modeling runs, MANE–VU identified the top 100 units which contribute to visibility impairment. Differences in model output resulted in a total of 167 units being identified for further control.

TABLE 2—PROJECTED REASONABLE PROGRESS GOAL AND UNIFORM RATE OF PROGRESS FOR MAINE CLASS I AREAS FROM NESCAUM 2018 VISIBILITY PROJECTIONS IN DECIVIEWS

		2000–2004 Baseline	2018 Projection	URP	Natural background
Acadia National Park	20% Worst Visibility Days	22.9	19.4	20.4	12.4
	20% Best Visibility Days	8.8	8.3		4.7
Moosehorn National Wildlife Refuge/Roosevelt Campobello International Park.	20% Worst Visibility Days	21.7	19.0	19.4	12.0
	20% Best Visibility Days	9.2	8.6	....	5.0

At the time of MANE–VU modeling some of the other States with sources potentially impacting visibility, in the Class I areas in both Maine and the rest of the MANE–VU domain, had not yet made final control determinations for BART, and thus, these controls were not included in the modeling prepared by MANE–VU and used by Maine. This modeling demonstrates that the 2018 control scenario (2018 projection) provides for an improvement in visibility greater than the uniform rate of progress for the Maine Class I areas for the most impaired days over the period of the implementation plan and ensures no degradation in visibility for the least impaired days over the same period.

The modeling supporting the analysis of these RPGs is consistent with EPA guidance prior to the CAIR remand. The regional haze provisions specify that a state may not adopt a RPG that represents less visibility improvement than is expected to result from other CAA requirements during the implementation period. (40 CFR 51.308(d)(1)(vi)). Therefore, in estimating the RPGs for 2018, many States took into account emission reductions anticipated from CAIR. MANE–VU initially reduced emissions from highest impacting 167 EGUs by ninety percent. However, many of the units targeted for the 90% reduction were part of the CAIR program. Since the 90% reduction was larger, in total tons of emissions reduced, than the reductions expected from CAIR, MANE–VU added the excess emissions back into the inventory to account for trading of the emission credits across the modeling domain. This way, MANE–VU States would not overestimate the emission reductions in case States used the CAIR program as their response to the MANE–VU's ''Ask'' of ninety percent reduction from the 167 EGUs in the eastern United States.

The RPGs for the Class I areas in Maine are based on modeled projections of future conditions that were developed using the best available information at the time the analysis was completed. While MANE–VU's emission inventory used for modeling included estimates of future emission growth, projections can change as additional information regarding future conditions becomes available. It would be both impractical and resource-intensive to require a state to continually adjust the RPG every time an event affecting these future projections changed.

EPA recognized the problems of a rigid requirement to meet a long-term goal based on modeled projections of future visibility conditions, and addressed the uncertainties associated with RPGs in several ways. EPA made clear in the RHR that the RPG is not a mandatory standard which must be achieved by a particular date. (64 FR at 35733). At the same time, EPA established a requirement for a five-year, midcourse review and, if necessary, correction of the States' regional haze plans. (40 CFR 52.308(g)). In particular, the RHR calls for a five-year progress review after submittal of the initial regional haze plan. The purpose of this progress review is to assess the effectiveness of emission management strategies in meeting the RPG and to provide an assessment of whether current implementation strategies are sufficient for the state or affected states to meet their RPGs. If a state concludes, based on its assessment, that the RPGs for a Class I area will not be met, the RHR requires the state to take appropriate action. (40 CFR 52.308(h)). The nature of the appropriate action will depend on the basis for the state's conclusion that the current strategies are insufficient to meet the RPGs. In its SIP submittal, Maine commits to the midcourse review and submitting revisions to the regional haze plan where necessary.

EPA is proposing to approve Maine's RPG for the first regional haze planning period. Maine has demonstrated that the emission controls in the MANE–VU ''Ask''—timely installation of BART Controls, a 90 percent reduction in SO_2 emissions from EGUs and a low sulfur fuel oil strategy are reasonable measures for the reduction of visibility impairment as required by EPA's RHR.

D. Best Available Retrofit Technology (BART)

1. Identification of All Bart Eligible Sources

Determining BART-eligible sources is the first step in the BART process. The Maine BART-eligible sources were identified in accordance with the methodology in Appendix Y of the Regional Haze Rule, *Guidelines for BART Determinations Under the Regional Haze Rule, Part II, How to Identify BART-Eligible Sources,* (70 FR 39104, 39156 (July 6, 2005)).

The BART Guidelines requires States to address SO_2, NO_X, and particulate matter. States are allowed to use their best judgment in deciding whether VOC or ammonia emissions from a source are likely to have an impact on visibility in the area. The Maine DEP addressed SO_2, NOx, and used particulate matter less than 10 microns in diameter (PM_{10}) as an indicator for particulate matter to identify BART eligible units, as the Guidelines require. Consistent with the Guidelines, the Maine DEP did not evaluate emissions of VOCs and ammonia in BART determinations due to the lack of impact on visibility in the area due to anthropogenic sources. The majority of VOC emissions in Maine are biogenic in nature, especially near the Maine Class I areas. Therefore, the ability to further reduce total ambient VOC concentrations at Class I areas is limited. Point, area, and mobile sources of VOCs in Maine are already comprehensively controlled as part of ozone attainment and maintenance strategy. In respect to ammonia, the overall ammonia inventory is very uncertain, but the amount of anthropogenic emissions at sources that were BART-eligible is relatively small.

The identification of BART sources in Maine was undertaken as part of a multi-state analysis conducted by the Northeast States for Coordinated Air Use Management (NESCAUM). NESCAUM worked with Maine DEP licensing engineers to review all sources and determine their BART eligibility. Maine DEP identified 10 sources as

BART-eligible. These sources are shown in Table 3 below.

TABLE 3—BART-ELIGIBLE SOURCES IN MAINE

Source and unit	Location	National emission inventory (NEI) identification code	BART Source category
FPLE Wyman Station	Yarmouth, ME	2300500135	SC 1—Fossil fuel fired electric plants.
Boiler #3		–004	
Boiler #4		–005	
Woodland Pulp, LLC	Woodland, ME	2302900020	SC 3—Kraft pulp mills.
Power Boiler #9		–001	
Lime Kiln		–002	
Dragon Products[10]	Thomaston, ME	2301300028	SC 4—Portland cement plants.
Red Shield Acquisition, LLC	Old Town, ME	2301900034	SC 3—Kraft pulp mills.
Recovery Boiler #4		–002	
Lime Kiln		–004	
Verso Bucksport	Bucksport, ME	2300900004	SC 22—Fossil fuel fired boilers.
Boiler #5		–001	
SD Warren	Hinckley, ME	2302500027	SC 3—Kraft pulp mills.
Recovery Boiler		–003	
Smelt Tanks #1 and #2		–007	
Lime Kiln		–004	
Verso Androscoggin	Jay, ME	2300700021	SC 3—Kraft pulp mills.
Power Boiler #1		–001	
Power Boiler #2		–002	
Waste Fuel Incinerator		–003	
Recovery Boilers #1 and #2		–004/005	
Smelt Tank #1		–009	
Smelt Tank #2		–010	
Lime Kiln A		–007	
Lime Kiln B		–008	
Flash Dryer		–018	
Katahdin Paper	Millinocket, ME	2301900056	SC 22—Fossil fuel fired boilers.
Power Boiler #4		–004	
Lincoln Paper and Tissue	Lincoln, ME	2301900023	SC 3—Kraft pulp mills.
Recovery Boiler #2		–002	
Rumford Paper	Rumford, ME	2301700045	SC 3—Kraft pulp mills.
Power Boiler #5		–003	

The initial list of BART-eligible sources complied by NESCAUM included SAPPI Somerset #1 Power Boiler. This unit was subsequently determined to not be BART eligible due to a federally enforceable permit condition which limits the operation of this unit to less than 250 million BTUs per hour heat input. Additionally, boiler #1 is not considered integral to the Kraft pulp process since it only provides steam and power to the facility.

Cap-Outs

BART applies to sources with the potential to emit 250 tons or more per year of any visibility impairing pollutant. (70 FR 39160). BART-eligible sources that adopt a federally enforceable permit limit to permanently limit emissions of visibility impairing pollutants to less than 250 tons per year may thereby ''cap-out'' of BART. Three Maine sources capped out of BART by taking such limits:

1. Katahdin Paper Company, LLC
2. Rumford Paper Company
3. Verso Bucksport, LLC

These sources have actual emissions of visibility impairing pollutants of less than 250 tons per year, but are BART-eligible because their potential emissions exceed the 250 tons per year threshold. Pursuant to the requests of these sources, the Maine DEP has established federally enforceable permit conditions that limit the potential to emit (PTE) of these units to less 250 tons per year for all visibility impairing pollutants. As a result, Maine has concluded that these sources are not BART eligible.

Federally enforceable terms and conditions were established for each source that limits the PTE for SO_2, PM_{10} and NO_X to less than 250 TPY. If, in the future, a source requests an increase in its PTE above the 250 tons per year threshold for a visibility impairing pollutant, then it shall be subject BART requirements.

2. Identification of Sources Subject to BART

Maine, working with MANE–VU, found that every MANE–VU state with BART-eligible sources contributes to visibility impairment at one or more Class I areas to a significant degree (See the MANE–VU Contribution Report). As a result, Maine found that all BART eligible sources within Maine are subject to BART. The Maine DEP utilized this option for demonstrating its sources are reasonably anticipated to cause or contribute to visibility impairment at Class I areas for three reasons: (1) The BART sources represent an opportunity to achieve greater reasonable progress; (2) additional public health and welfare benefits will accrue for the resulting decreases in fine particulate matter; and (3) to demonstrate its commitment to federal

[10] On October 1, 2010 and November 8, 2010, Dragon Products, LLC submitted documentation asserting that the facility (kiln) qualifies as a reconstructed source. After reviewing the documentation and conferring with EPA, via a letter dated September 14, 2011, Maine DEP found the facility meets the criteria of a ''reconstructed source'' and therefore is not BART eligible.

land managers and other RPOs as it seeks the implementation of reasonable measures in other States.

According to Section III of the Guidelines, once the state has compiled its list of BART-eligible sources, it needs to determine whether to make BART determinations for all of the sources or to consider exempting some of them from BART because they may not reasonably be anticipated to cause or contribute to any visibility impairment in a Class I area.

Based on the collective importance of BART sources, Maine decided that no exemptions would be given for sources; a BART determination will be made for each BART-eligible source.[11]

3. Modeling to Demonstrate Source Visibility Impact

MANE–VU conducted modeling analyses of BART-eligible sources using the EPA approved air quality model, California Pollution Model (CALPUFF), in order to provide a regionally-consistent foundation for assessing the degree of visibility improvement which could result from the installation of BART controls.[12] While this modeling analysis differed slightly from the guidance, it was intended to provide a first-order estimate of the maximum visibility benefit that could be achieved by eliminating all emissions from a BART source, and provides a useful metric for determining which sources are unlikely to warrant additional controls to satisfy BART.

The MANE–VU modeling effort analyzed 136 BART-eligible sources in the MANE–VU region using the CALPUFF modeling platform and two meteorological data sets: (1) A wind field based on National Weather Service (NWS) observations; and (2) a wind field based on the Pennsylvania State University/National Center for Atmospheric Research Mesoscale Meteorological Model (MM5) version 3.6. Modeling results from both the NWS and MM5 platforms include each BART eligible unit's maximum 24-hr, 8th highest 24-hr, and annual average impact at the Class I area. These visibility impacts were modeled relative to the 20 percent best, 20 percent worst, and average annual natural background conditions. In accordance with EPA guidance, which allows the use of either estimates of the 20 percent best or the annual average of natural background visibility conditions as the basis for calculating the deciview difference that individual sources would contribute for BART modeling purposes, MANE–VU opted to utilize the more conservative best conditions estimates approach because it is more protective of visibility.

The 2002 baseline modeling provides an estimate of the maximum improvement in visibility at Class I Areas in the region that could result from the installation of BART controls (the maximum improvement is equivalent to a ''zero-out'' of emissions). In virtually all cases, the installation of BART controls would result in less visibility improvement than what is represented by a source's 2002 impact, but this approach does provide a consistent means of identifying those sources with the greatest contribution to visibility impairment.

In addition to modeling the maximum potential improvement from BART, MANE–VU also determined that 98 percent of the cumulative visibility impact from all MANE–VU BART eligible sources which corresponds to a maximum 24-hr impact of 0.22 dv from the NWS-driven data and 0.29 dv from the MM5 data. As a result, MANE–VU concluded that, on the average, a range of 0.2 to 0.3 dv would represent a significant impact at MANE–VU Class I areas, and sources having less than 0.1 dv impact are unlikely to warrant additional controls under BART.[13]

4. Maine BART Analysis Protocol

40 CFR 51.308(e)(1)(ii)(A) requires that, for each BART-eligible source within the state, any BART determination must be based on an analysis of the best system of continuous emission control technology available and the associated emission reductions achievable. In addition to considering available technologies, this analysis must evaluate five specific factors for each source: (1) The costs of compliance; (2) the energy and non-air quality environmental impacts of compliance; (3) any existing pollution control technology in use at the source; (4) the remaining useful life of the source; and (5) the degree of visibility improvement which may reasonably be anticipated from the use of BART.

Although Maine did not exempt any BART-eligible sources from a BART determination, it did utilize the MANE–VU zero-out modeling as a surrogate for estimating the visibility improvement reasonably expected from the application of controls. There are eight BART-eligible sources with less than 0.1 deciview impact at any Class I area, with impacts ranging from 0.01 deciviews to 0.0651 deciviews. These sources are: SD Warren smelt tanks #1 and #2; SD Warren lime kiln; Verso Androscoggin smelt tank #1 and #2; Verso Androscoggin lime kilns A and B; and Verso Androscoggin flash dryer. Maine noted that the majority of these units have existing controls in place that would likely satisfy the BART requirements. Given this and the fact that zero-out modeling shows that the elimination of all emissions from these sources would provide only insignificant visibility benefits at nearby Class I areas, Maine used a streamline approach for the BART determinations for these sources.

5. Source Specific BART Determinations

The following section discusses the BART determinations for sources in Maine.

a. Woodland Pulp LLC (Formerly Domtar Maine, LLC)

i. Background

The Woodland Pulp facility is a pulp mill, which utilizes the Kraft Pulping process and produces market pulp. The Mill also operates support facilities including woodyards, wastewater treatment plant, sludge press, pulp production labs, environmental labs, finishing, shipping, and receiving operations, storage areas, a landfill, and a power boiler.

There are two BART eligible units at the facility; Power boiler #9 and the lime kiln.

Power boiler #9 is rated at 625 MMBtu/hr and was placed into operation in 1971. Power boiler #9 is fueled primarily by biomass but is also licensed to burn #6 fuel oil, sludge, tire derived fuel (TDF), specification waste oil, high volume low concentration (HVLC) gas, low volume high concentration (LVHC) non-condensable gas, mill yard waste, oily rags, stripper off-gas, and propane. Emissions are controlled using a variable-throat wet

[11] Maine's decision that all BART eligible sources are subject to BART should not be misconstrued to mean that all BART-eligible sources must install controls. Maine's approach simply requires the consideration of each of the five statutory factors before determining whether or not controls are warranted.

[12] The MANE–VU modeling protocol can be found in the NESCAUM ''BART Resource Guide,'' dated August 23, 2006, (*http://www.nescaum.org/documents/bart-resource-guide/bart-resource-guide-08-23-06-final.pdf/*).

[13] As an additional demonstration that sources whose impacts were below the 0.1 dv level were too small to warrant BART controls, the entire MANE-VU population of these units was modeled together to examine their cumulative impacts at each Class I area. The results of this modeling demonstrated that the maximum 24-hour impact at any Class I area of all modeled sources with individual impacts below 0.1 dv was only a 0.35 dv change relative to the estimated best days natural conditions at Acadia National Park. This value is well below the 0.5 dv impact used by most RPOs and States for determining whether a BART-eligible source contributes to visibility impairment.

venturi scrubber and low-NO_X burners (LNBs). The lime kiln is rated at 75 MMBtu/hr and was placed into operation in 1966. Emissions are controlled using a variable-throat wet venturi scrubber and a Ceilcote cross-flow scrubber. The lime kiln is fueled by #6 fuel oil.

ii. Power Boiler #9

(1) PM BART Review: Maine evaluated the use of fabric filters, wet electrostatic precipitator (WESP), dry electrostatic precipitator (DESP), and wet scrubbers to control PM at power boiler #9. Fabric filters were found not technically feasible due to fire risk from combustible fly-ash, while WESP is not technically feasible due to operational difficulties with multi-fuel boilers. A DESP could not be installed post-scrubber due to excess moisture levels in the exhaust stream, but could be installed upstream. An upstream DESP was evaluated and found to provide a 98–99% control efficiency for biomass and a 90% efficiency for oil for PM. For comparison, a wet scrubber provides an 85–98% control efficiency for PM. Maine estimated the cost for DESP installation at $4,640 per ton of PM removed. Maine concluded that the addition of DESP with the existing wet venturi scrubber is not a cost-effective option and determined that current controls represent BART for PM for power boiler #9.

(2) SO_2 BART Review: Power boiler #9 is currently controlled through the use of a wet scrubber. In addition, the boiler is fueled primarily by biomass, a naturally low sulfur fuel. Maine concluded that the combination of a wet scrubber in use with primarily biomass is the maximum level of control available for this type of unit. Maine determined that current controls represent BART.

(3) NO_X BART Review: Maine identified a number of potential NO_X control strategies for use on power boiler #9, including NO_X tempering, flue gas recirculation (FGR), selective non-catalytic reduction (SNCR), selective catalytic reduction (SCR), LNBs and good combustion practices. The State found that several potential NO_X controls were technically infeasible and did not warrant further investigation. Maine concluded that NO_X tempering is not technically feasible due to reduced thermal efficiency and that SCR is not technically feasible due to the increased frequency of catalyst fouling from multi-fuel boilers. FGR was determined to be not technically feasible based on previous failed FGR trials conducted on power boiler #9. SNCR, with a 30–40% control efficiency, and LNBs, with 10% control efficiency, were identified as technically feasible control strategies. Maine estimated the cost-effectiveness of SNCR at $7,360 per ton and noted that SNCR has a reduced effectiveness on boilers with significant load swings (such as the Power Boiler #9). Given the low cost-effectiveness of SNCR, Maine determined the continued use of LNBs represent BART for the power boiler #9.

iii. Lime Kiln

(1) PM BART Review: The lime kiln is subject to the Maximum Available Control Technology (MACT) standard for PM found in 40 CFR Part 63, Subpart MM. The BART Guidelines state that for sources subject to a MACT standard, ''[u]nless there are new technologies subsequent to the MACT standards which would lead to cost-effective increases in the level of control, you may rely on the MACT standards for purposes of BART.'' (50 FR 39164, (July 6, 2005)) Maine determined that there are no new technologies for control of this source and therefore that compliance with MACT therefore represents BART for the lime kiln.

(2) SO_2 BART Review: Maine identified the use of a wet scrubber and in-process capture as feasible technologies for the control of SO_2 from the lime kiln. Both technologies are currently employed by Woodland Pulp (including two wet scrubbers). Therefore, current controls were determined to be BART.

(3) NO_X BART Review: A number of potential NO_X control strategies were identified for the lime kiln, including: SNCR, SCR, non-selective catalytic reduction (NSCR), FGR, LNBs, and good combustion practices. Maine determined the impracticality of installing chemical injection nozzles inside a rotating kiln drum makes SNCR technically infeasible. Maine also concluded that SCR and NSCR are not feasible due to the known presence of catalyst fouling substances in the lime kiln. The State found that FGR is not feasible as it reduces the temperature in the flame zone, thus hindering the chemical reaction taking place in the lime kiln. The State also concluded that LNBs are a non-demonstrated technology and are not listed in the EPA BACT/RACT/LEAR Clearinghouse for lime kiln emissions control. Maine concluded that good combustion practices are the only feasible option for controlling NO_X which is already employed at the lime kiln. Therefore, current controls were determined to represent BART for the lime kiln.

iv. EPA Assessment

EPA finds that Maine's analyses and conclusions for the BART emission units located at the Woodland Pulp LLC facility are reasonable. EPA has reviewed the Maine analyses and concluded they were conducted in a manner consistent with EPA's BART Guidelines.

b. FPL Energy Wyman, LLC

i. Background

FPL Energy Wyman is an 850-megawatt electric generating facility located on Cousins Island in Yarmouth, Maine. The plant consists of four generation units, all of which fire #6 residual fuel oil. A fifth unit is a smaller oil-fired auxiliary boiler which provides building heat and auxiliary steam and a sixth unit is an emergency backup diesel generator that provides electricity for use on-site. There are two BART eligible units at the facility—boiler #3 and boiler #4.

Boiler #3 is a Combustion Engineering boiler, installed in 1963, with a maximum design heat input capacity of 1,190 MMBtu/hr firing #6 fuel oil (with 2.0% sulfur content by weight). The boiler is equipped with multiple centrifugal cyclones for control of particulate matter and optimization and combustion controls for NO_X. Boiler #4 is a Foster Wheeler boiler, installed in 1975, with a maximum design heat input capacity of 6,290 MMBtu/hr firing #2 or #6 fuel oil (with 0.7% sulfur). The boiler is equipped with an electrostatic precipitator for control of particulate matter and optimization and combustion controls for NO_X.

ii. Boilers #3 and #4

(1) PM BART Review: Emissions of PM from oil fired boilers are a function of the efficiency of the fuel firing.[14] Both boilers #3 and #4 have high efficiency combustion systems in conjunction with PM control devices. Boiler #3 has a Multiclone dust collectors. Boiler #4 has an ESP, the most stringent control available. The cost analysis of installing an ESP on boiler #3 resulted in a pollutant removal cost effectiveness of $19,000/ton of PM removed and a visibility improvement cost effectiveness of $143 million per deciview of visibility improvement. This was determined to be not cost-

[14] It is estimated from the MANE–VU August 2006 document *Contributions to Regional Haze in the Northeast and Mid-Atlantic United States, Tools and Techniques for Apportioning Fine Particle/ Visibility Impairment in MANE–VU* (pages 3–2, 4–7, 4–8) that coarse particulate matter is responsible for typically less than 4% of the contribution to visibility impairment at the MANE–VU Class I areas.

effective. Therefore, Maine determined that current controls on boiler #3 represent BART. Maine determined the ESP on boiler #4 represents BART because it is the most stringent control available.

(2) SO_2 BART Review: Emissions of SO_2 from oil fired boilers are related to the sulfur in the fuel. Maine identified the following available retrofit control technologies for reducing SO_2 emissions from boilers #3 and #4: Low sulfur #2 fuel oil, reduced sulfur #6 fuel oil, and wet or dry scrubbers. The use of low sulfur #2 fuel oil (0.05% down to 0.0015% sulfur by weight) and reduced sulfur #6 fuel oil (1% or less sulfur by weight) were considered technically feasible options. The application of post combustion controls of wet or dry scrubbers on large, oil-fired boilers was researched by Maine. The state found that, generally such controls were typically applied only to coal-fired boilers. As a general matter, the use of scrubbers on oil-fired boilers is considered cost prohibitive. As a result, Maine did not consider wet or dry scrubbers as a BART option.

Maine performed a cost analysis on lowering the sulfur content in the fuel used in both boilers. Boiler #3 currently fires 2% sulfur by weight oil and boiler #4 currently fires 0.7% sulfur by weight oil. The annual costs were calculated to be the following (based on the differential fuel costs):

TABLE 4—SO_2 CONTROL COSTS ANALYSIS FOR WYMAN #3 AND #4

Boiler #3		Boiler #4	
% Sulfur	Annual costs (in millions)	% Sulfur	Annual costs (in millions)
1.0	$0.68		
0.7	0.80		
0.5	3.2	0.5	$9.2
0.3	5.7	0.3	18.3

Maine also estimated the visibility cost effectiveness, incremental visibility improvement, and incremental visibility cost effectiveness from switching from 2% sulfur by weight to reduced sulfur content fuel oil for boiler #3. In estimating these values, Maine used the cumulative visibility benefits at several of the nearest Class I areas on the highest impacting visibility day. Maine estimated the following:

TABLE 5—SO_2 CONTROL VISIBILITY ANALYSIS FOR WYMAN UNIT #3

% Sulfur	Visibility cost effectiveness ($/deciview) (in millions)	Incremental visibility improvement	Incremental visibility cost effectiveness ($/deciview) (in millions)
1.0	$0.69		
0.7	0.56	0.44 dv	$0.27
0.5	1.82	0.35 dv	6.97
0.3	2.64	0.37 dv	6.59

The visibility cost effectiveness, incremental visibility improvement, and incremental visibility cost effectiveness from switching from 0.7% sulfur to reduced sulfur content fuel oil for boiler #4 was the following:

TABLE 6—SO_2 CONTROL VISIBILITY ANALYSIS FOR WYMAN UNIT #4

% Sulfur	Visibility cost effectiveness ($/deciview) (in millions)	Incremental visibility improvement	Incremental visibility cost effectiveness ($/deciview) (in millions)
0.5	$22.3		
0.3	19.5	0.53 dv	$17.3

Based on the information above, Maine determined 0.7% sulfur by weight fuel oil for boiler #3 beginning in 2013, and the current limit of 0.7% sulfur by weight fuel oil for boiler #4 represents BART for these units.

(3) NO_X BART Review: In order to meet the ozone National Ambient Air Quality Standard (NAAQS) requirement, FPL Energy Wyman installed combustion control technologies pursuant to Maine's Chapter 145, *NO_X Control Program Regulation.* FPL Energy Wyman installed combustion control technology upgrades, including low NO_X fuel atomizers, improved swirler design, and overfire and interstage air ports. The burners were optimized and fuel/air flows were balanced to the burners on each unit. The combustion control technology upgrades were completed in April 2003 and reductions in NO_X emissions of 29–35% have been documented with boiler #3 and reductions of 24–47% have been documented with boiler #4 depending on each unit's load. These reductions are equivalent to the reductions that

could be achieved through the use of SNCR on the boilers.

The cost analysis of installing additional NO_X controls of regenerative selective catalytic reduction (RSCR) on the boilers in addition to the current combustion controls resulted in a pollutant removal cost effectiveness of $125,000/ton and $83,000/ton of NO_X removed for boiler #3 and boiler #4, respectively. Maine concluded that such controls are not cost effective. Therefore, Maine determined the current combustion controls represent BART for these units.

iii. EPA Assessment

EPA finds that Maine's analyses and conclusions for the BART emission units located at the FPL Energy Wyman, LLC facility are reasonable. Although EPA does not generally recommend that States rely solely on $/deciview consideration in making BART determinations, EPA does not believe that broader analysis of the costs and visibility benefits associated with changing the sulfur content of the fuel used in boiler #3 and #4 would have resulted in a different BART determination in this case. EPA has reviewed the remaining Maine analyses for FPL Energy Wyman, LLC and concluded they were conducted in a manner consistent with EPA's BART Guidelines.

c. Lincoln Paper and Tissue, LLC

i. Background

Lincoln Paper & Tissue (LPT) is an integrated Kraft pulp and paper mill. Currently, LPT operates a hardwood digester and a softwood sawdust digester to produce pulp with approximately 50% recycled content. LPT uses one recovery boiler and a lime kiln in the recaust process for reclamation of the pulping chemicals. Also, LPT has three oil-fired boilers and one multi-fuel boiler to supply the mill with steam. The two paper machines produce specialty paper and the two tissue machines produce multi-ply dyed tissue. The pulp dryer machine produces bailed pulp which is either used by LPT or sold to other paper manufacturers.

At LPT, the only BART-eligible source is the recovery boiler #2, which is used to recover the pulping chemicals and produce steam. Emissions exit through two identical 175 foot stacks.

The recovery boiler is a straight fire unit burning black liquor, typically without combustion support from fossil fuel. Normally, oil is used only during start-ups and shutdowns and to stabilize operation of the boiler. Recovery boiler #2 is exhausted to an ESP to control particulate emissions. This unit also serves to re-introduce salt cake into the black liquor which further concentrates the solids content.

ii. Recovery Boiler #2

(1) PM BART Review: PM emissions are currently controlled with the ESP to levels meeting compliance with MACT standards (40 CFR Part 63, Subpart MM). Since the unit is meeting the MACT standard, Maine determined that these controls represent BART.

(2) SO_2 and NO_X BART Review: SO_2 and NO_X emissions are controlled by proper operation of the recovery boiler, including a three-level staged combustion air control system, and limitations on fuel oil use and the sulfur content. As no new control technologies are available for further control of these pollutants from a recovery boiler, current controls constitute BART for this unit.

iii. EPA Assessment

EPA finds that Maine's analyses and conclusions for the BART emission unit located at the Lincoln Paper and Tissue, LLC facility are reasonable. EPA has reviewed the Maine analyses and concluded they were conducted in a manner consistent with EPA's BART Guidelines. Current NO_X and SO_2 emission limits are federally enforceable via the Maine Air License A–177–71–A/R issued under Maine's EPA approved Prevention of Significant Deterioration program.

d. SD Warren Company, Somerset

i. Background

SD Warren Company (SDW) is an integrated Kraft pulp and paper mill. Whole logs, chips, and other biomass, are delivered to the mill by truck and/or train. The logs are sawn, debarked, chipped and stored in the mill's woodyard. The biomass is stored in piles and then conveyed to the boilers. The chips are stored in piles and then conveyed to the chip bin, chip steaming vessel, and then the digester. SDW operates one Kamyr continuous digester to produce pulp (hardwood, softwood, or any combination thereof), one recovery boiler and one lime kiln in the recaust process for reclamation of the pulping chemicals. There are two multi-fuel boilers and an oil fired package boiler to supply the mill with steam. SDW has three paper machines which produce paper. There are also two pulp machines. One pulp machine has a steam operated dryer and both machines produce bailed pulp. The mill also operates support facilities, including the wood yard, wastewater treatment plant, sludge presses, pulp and paper production labs, environmental labs, roll wrapping, shipping and receiving operations, and a landfill.

There are four emissions units that were determined to be BART eligible at this facility: the recovery boiler, smelt tanks #1 and #2, and the lime kiln.

ii. Recovery Boiler

The recovery boiler was installed in 1975–1976. It is used to recover chemicals from spent pulping liquors and to produce steam for mill operations. The recovery boiler is licensed to fire black liquor (spent pulping liquor), residual (#6) fuel oil, distillate (#2) fuel oil, and used oil. The recovery boiler is also licensed to combust low volume-high concentration (LVHC) and high volume-low concentration (HVLC) gases produced at various points in the pulping process. The licensed maximum black liquor firing rate is 5.5 million pounds per day of BLS. The recovery boiler is subject to MACT standards for Chemical Recovery Combustion Sources at Kraft Soda, Sulfite, and Stand-Alone Semichemical Pulp Mills (40 CFR Part 63, Subpart MM).

(1) PM BART Review: SDW currently operates a three-chamber electrostatic precipitator on the recovery boiler. Maine identified the following available retrofit technologies for control of PM from Kraft mill recovery boilers: Electrostatic precipitators, wet scrubbers, and fabric filters. Wet scrubbers were eliminated as a feasible control strategy because the ESP currently installed is capable of a greater degree of emissions control at a lower operating cost. Fabric filters are generally considered to be equivalent to ESPs in regards to pollution control; however, fabric filters have not been applied to recovery boilers at Kraft mills. Maine therefore eliminated fabric filters as a feasible control alternative and concluded that the current control, specifically operation of the ESP, represents BART for this unit.

(2) SO_2 BART Review: SDW's recovery boiler is currently equipped with a four-level staged combustion air system. SDW identified staged combustion systems and wet scrubbers as available retrofit technologies for control of SO_2 from Kraft mill recovery boilers. SO_2 emissions from recovery boilers occur due to the volatilization and subsequent oxidation of sulfur compounds that are present in the black liquor. Proper operation of the recovery boiler maximizes the conversion of sulfur compounds in the liquor to the principal constituents of the pulping chemicals. This occurs through capture

of these sulfur compounds in the combustion zone of the boiler by sodium fume released from the smelt bed. Consequently, proper combustion control achieved through the use of staged combustion air systems results in effective control of SO_2 emissions. The only available alternative for SO_2 emission control is a wet scrubber. However, recovery boilers with a properly operated staged air combustion system operate at much lower concentrations of SO_2 in the flue gas than emission units to which wet scrubbers are routinely applied. Given the already low SO_2 levels, the installation and use of a scrubber would be prohibitively expensive. The maximum modeled visibility impairment from this unit due to SO_2 is 0.02 dv. Maine determined therefore that current control represents BART for this unit.

(3) NO_X BART Review: SDW's recovery boiler is upgraded to a four-level staged combustion air system. Maine identified the following available retrofit technologies for control of NO_X from Kraft mill recovery boilers: Staged combustion systems, SNCR, SCR, LNBs, Flue Gas Recirculation, and Low-Temperature Oxidation. Emission controls which have been demonstrated on conventional steam boilers, including SNCR, SCR, FGR, and LNBs have not been demonstrated to be feasible on Kraft mill recovery boilers. There has been some small-scale work done on ''low-temperature oxidation'' where pure oxygen is injected into the evaporation process to drive ammonia from the black liquor. However, the company currently looking into this technology has advised Maine that they are not aware of any commercial size units where this technology has been used. Maine did not consider this technology to be technically feasible. Maine concluded that there are no technically feasible alternatives for control of NO_X emissions from recovery boilers other than proper operation of the boiler and the staged combustion control system. Since the controls already in place are considered the most stringent available, Maine determined that these controls represent BART for this unit.

iii. Smelt Tanks #1 and #2

SDW operates two smelt tanks which were installed in 1975–1976. The smelt tanks operate in conjunction with the recovery boiler. Recovered sodium-based pulping chemicals, in the form of molten salts, are discharged from the bottom of the recovery boiler into the smelt tanks, where they are mixed with a water/caustic solution to form green liquor. The smelt tanks are subject to MACT standards (40 CFR Part 63, Subpart MM).

(1) PM BART Review: SDW currently operates a wetted fan scrubber on each of the smelt tanks for control of particulate emissions. The scrubbing media for the scrubbers is either water or weak wash from the white liquor clarification system. Maine identified the following potential retrofit technologies for control of PM from smelt tanks: ESPs, wet scrubbers, fabric filters, and mist eliminators. The most common PM emission control system employed on smelt tanks is wet scrubbers. The use of wet scrubbers also provides a secondary environmental benefit by controlling reduced sulfur compound emissions. The high moisture content of the smelt tank exhaust gases makes dry PM control systems, including fabric filters and dry ESPs, technically infeasible on this type of emission unit. The only remaining control technology, mist eliminators, provides a lower degree of PM emission control than the use of wet scrubbers. Therefore, Maine determined that the current operation of the wet scrubbers represents BART for these units.

(2) SO_2 BART Review: Since no combustion takes place within smelt tanks, SO_2 is not generated within the emission unit. Maine has found that SO_2 emissions from the smelt tanks are dependent on how much sulfur carries over from the respective recovery boilers with the smelt. SO_2 emissions from both smelt dissolving tanks combined are very low at approximately 10.5 tons per year, primarily because the wet scrubber used for PM control also reduces SO_2 emissions. Maine determined that BART for SO_2 emissions from smelt tanks #1 and #2 is no additional control based on the following: (1) SO_2 emissions from the smelt dissolving tanks during the BART baseline period were, and are expected to continue to be, extremely low (~10.5 TPY, combined); (2) the smelt dissolving tanks and associated scrubbers are designed and operated to minimize SO_2 emissions; (3) SO_2 emissions from the smelt dissolving tanks have a minimal impact on visibility (<0.004 deciviews); and (4) additional control of SO_2 emissions from the smelt dissolving tanks would have a minimal impact on overall visibility. Therefore, Maine determined that current controls represent BART for these units.

(3) NO_X BART Review: Since no combustion takes place within smelt tanks, NO_X is not generated within the emission unit. Therefore, Maine determined that current controls represent BART for these units.

iv. Lime Kiln

The lime kiln was installed in 1975–1976. It is used to convert lime mud (principally calcium carbonate) to lime (calcium oxide). Fuel is fired in the lime kiln to generate the heat that is needed to convert lime mud to lime. The lime kiln is licensed to fire residual (#6) fuel oil, distillate (#2) fuel oil, used oil, and propane. The lime kiln is also licensed to combust LVHC gases and foul condensate streams.

(1) PM BART Review: Particulate emissions from the lime kiln are currently controlled by a variable throat venturi scrubber system followed by a cyclone separator. Maine identified the following available retrofit technologies for control of PM from lime kilns: Electrostatic precipitators, wet scrubbers, and fabric filters. Fabric filters have never been applied to Kraft pulp mill lime kilns. They are generally deemed to be technically infeasible on lime kilns. ESPs provide a greater degree of particulate matter control than venturi scrubbers. However, the possible annual reduction in emissions to be gained by replacing the existing scrubber with an ESP is relatively small (estimated at under 40 tons/year). Additionally, the scrubber also helps control emissions of SO_2 and reduced sulfur compounds. This beneficial removal of other pollutants is not available to lime kilns equipped with ESPs. Consequently, replacement of the existing scrubber with an ESP would be expected to result in higher Total Reduced Sulfur (TRS) and SO_2 emissions from the lime kiln. Furthermore, any potential improvement in visibility impacts associated with retrofitting an ESP on the lime kiln, the modeling result for current PM emissions from the Lime Kiln was 0.0463 dv; well below the State's de minimis level of 0.1 dv. Therefore, Maine determined that the current operation of the scrubber represents BART for the lime kiln.

(2) SO_2 BART Review: SO_2 forms in the lime kiln from either the combustion of sulfur in the fuel or combustion of TRS compounds in the LVHC gases. Currently, emissions of SO_2 are controlled by using a combination of the inherent sulfur removal provided by operation of the kiln itself (*i.e.* extensive contact between burner exhaust gases and the calcium compounds in the kiln) enhanced through the use of a venturi wet scrubber (post-combustion). SDW also uses a caustic scrubber (pre-combustion) on the LVHC gases fired in the boiler. Firing of LVHC gases in the

lime kiln without pre-treatment with the caustic scrubber causes formation of rings within the lime kiln leading to excessive down-time of the equipment. Emissions of SO_2 from the lime kiln can vary significantly based on the amount of LVHC gases being fired and whether or not the caustic scrubber is in operation. Maine identified the following available retrofit technologies for control of SO_2 from lime kilns: Lime kiln operation and wet scrubbers. Since these controls are already in place, Maine determined that current controls represent BART for this unit.

(3) NO_X BART Review: NO_X emissions from the lime kiln are currently controlled by good combustion controls and operation of the unit's combustion air system. The maximum modeled visibility impairment on a Class I area is 0.06 dv. Maine identified the following potential retrofit technologies for control of NO_X from lime kilns: Combustion Air Systems controls, SNCR, SCR, LNBs, and FGR. However, Maine's analysis concluded there are no technically feasible alternatives for control of NO_X from lime kilns beyond the measures currently employed. LNBs negatively impact the efficiency, energy use, and calcining capacity of a lime kiln. Post combustion controls, such as SCR and SNCR, are not feasible for lime kilns. The temperature window necessary for the SNCR process (1500–2000 °F) is unavailable in a Kraft lime kiln. The high PM load at the exit of the kiln precludes the placement of the catalyst grid needed for the SCR process upstream of the PM control device, and the requisite temperature window required for this process (550–750 °F) is not available downstream of the PM control system. Therefore, Maine determined that current controls represent BART for this unit.

v. EPA Assessment

EPA finds that Maine's analyses and conclusions for the BART emission units located at the SD Warrant Company, Somerset facility are reasonable. EPA has reviewed the Maine analyses and concluded they were conducted in a manner consistent with EPA's BART Guidelines.

e. Verso Androscoggin

i. Background

The Verso Androscoggin pulp mill in Jay, Maine, produces bleached Kraft pulp and groundwood pulp. The bleached pulp is produced in two separate process lines, designated ''A'' and ''B.'' Groundwood pulp is produced in another separate process line. Logs and wood chips are received in the Woodyard area, where they are stored and processed for eventual use in the Pulp Mill or Groundwood Mill. The Pulp Mill consists of two separate, parallel Kraft chemical pulping process lines. Pulp produced at the Verso Jay Mill is either used in the paper mill area or dried in the Flash Dryer for storage and/or sale.

The Paper Mill consists of all the equipment and operations used to convert pulp to paper, including stock preparation, additive preparation, coating preparation, starch handling, finishing, storage, and paper machines. Non-condensable gases (NCGs) collected throughout the process from certain units in the Pulp Mill are sent to the lime kilns for combustion. The HVLC emission streams from certain other units are collected and sent to the Regenerative Thermal Oxidizer where they are incinerated. The Mill produces steam and electric power for mill operations with power boilers #1 and #2 and the waste fuel incinerator (WFI).

There are ten BART-eligible units at Verso Jay: (1) Power boiler #1; (2) power boiler #2; (3) waste fuel incinerator; (4) recovery boiler # 1; (5) recovery boiler #2; (6) smelt tank #1; (7) smelt tank #2; (8) lime kiln A; (9) lime kiln B; and (10) flash dryer.

ii. Power Boilers #1 and #2

Power boilers #1 and #2 are each rated at 680 MMBtu/hr and began operation in 1965 and 1967, respectively. Power boilers #1 and #2 are licensed to fire #6 fuel oil, #2 fuel oil, and used oil. The license currently limits the sulfur content of the fuel oil to no more than 1.8%, by weight. In addition, each boiler is equipped with LNBs. The operation of the two boilers is related to whether or not and how the cogeneration plant (three natural gas fired turbines) at the Mill is operating. Typically, when the cogeneration plant is operating, power boilers #1 and #2 do not operate. When the cogeneration plant is not operating, both boilers are operated; however, one boiler will typically carry the bulk of the load and the other boiler will be idled or run at a low load. There are occasions when both boilers operate at high load but this is not a routine operating mode.

(1) PM BART Review: Maine found that PM_{10} emissions from power boilers #1 and #2 are low and have minimal impact on visibility. The maximum modeled visibility impact on a Class I area due to PM_{10} is 0.03 dv. As the boilers are subject to the final ''Boiler MACT'' standards (40 CFR Part 63, Subpart DDDDD) promulgated in 2011, Maine did not further consider additional controls in its BART analysis and determined that compliance with these standards represents BART for power boilers #1 and #2.

(2) SO_2 BART Review: Maine identified and evaluated low sulfur fuels, wet scrubbing, dry scrubbing, and semi-dry scrubbing as potential control technologies in the reduction of SO_2 emissions from power boilers #1 and #2. Dry and semi-dry scrubbing control technologies were evaluated; however, the control effectiveness levels would be low (<25%), downstream particulate matter control devices such as an ESP and/or fabric filter would need to be installed to collect and re-circulate the scrubbing material, and no applications of these technologies on fuel oil fired boilers like power boilers #1 and #2 were identified during research of potential control technologies. Low sulfur fuels and wet scrubbing control technologies were found to be technically feasible and were evaluated further. Switching to natural gas, #2 fuel oil, and wet scrubbing were estimated to cost between $2,200 and $3,300 per ton SO_2 removed with a visibility improvement of 1.5 dv. Switching to 0.7% sulfur #6 fuel oil was estimated to cost $631 per ton SO_2 removed with a visibility improvement of 0.9 dv.

The cost effectiveness numbers above are based on the highest estimated two year average of annual emissions between 2002 and 2008. In recent years (2008 and 2009) these boilers have been operating close to only 20% of the time. This would result in an actual cost effectiveness for wet scrubbing of between $4,920 and $7,133 per ton of SO_2 removed. The use of low sulfur fuels or a wet scrubber has the potential to reduce visibility impacts from power boilers #1 and #2 by a perceptible amount; however, there are significant cost differences among the three low sulfur containing fuels evaluated by Maine and the wet scrubber. Maine concluded that the use of 0.7% sulfur by weight #6 fuel oil is a feasible and justifiable cost at $631 per ton of SO_2 reduced. The incremental cost of switching to natural gas from 0.7% sulfur by weight #6 fuel oil is $7,492 per ton and the incremental cost of switching to wet scrubbing from 0.7% sulfur by weight #6 fuel is $4,811 per ton. Maine determined that these costs were not justifiable for an additional 0.6 dv improvement. In addition, Maine's low sulfur legislation will require the facility to use 0.5% sulfur by weight #6 oil by 2018. At that time, the price of the 0.5% sulfur by weight oil will be reduced due to increased supply to the State. Therefore, Maine determined that the use of lower sulfur (0.7% sulfur by weight) #6 fuel oil in place of the higher sulfur (1.8% sulfur by weight) #6 fuel oil currently fired, represents BART for control of SO_2 emissions from power boilers #1 and #2.

(3) NO_X BART Review: Maine identified and evaluated SCR, LNB, SNCR, and combustion control methods (including an overfire air (OFA) system and a flue gas recirculation (FGR) system) as potential control technologies for the reduction of NO_X emissions from power boilers #1 and #2. SCR and SNCR control technologies were found to be technically feasible and were evaluated further. LNBs are currently installed and used on power boilers #1 and #2, and are estimated to provide a 15% reduction in NO_X emissions, so were not evaluated further. Combustion control methods were evaluated; however, none were found to be viable control options for power boilers #1 and #2. Maine found that the size and design of power boilers #1 and #2 would provide little room for the installation of an overfire air system and that the application of a flue gas recirculation system would result in minimal reductions (7% to 15%) in NO_X emissions. The cost effectiveness of SCR is $5,271 per ton NO_X removed with a visibility improvement of 1.7 dv. The cost effectiveness of SNCR is $5,973 per ton NO_X removed for a visibility improvement of 1.4 dv.

The cost effectiveness numbers presented above are based on controlling NO_X emissions from power boilers #1 and #2 from the highest estimated two-year average annual emissions between 2002 and 2008. In recent years (2008 and 2009) these boilers have been operating close to only 20% of the time, which for example, would result in an actual cost effectiveness of $16,313 per ton of NO_X removed with the installation of SCR. Although the use of SCR or SNCR has the potential to reduce visibility impacts by a perceptible amount, Maine concluded that the cost effectiveness levels are not economically justifiable based on the limited use of power boilers #1 and #2 in recent years. Therefore, Maine determined that the current use of LNBs represents BART for control of NO_X emissions from power boilers #1 and #2 and that no additional level of control is justifiable as BART.

iii. Waste Fuel Incinerator Boiler

The waste fuel incinerator (WFI) is rated at 480 MMBtu/hr on biomass and 240 MMBtu/hr on oil and began operation in 1976. While the WFI primarily fires biomass, fuel oils (#6 and #2 fuel oils, waste oil, and oily rags) can also be fired in the boiler. Sulfur dioxide and particulate matter emissions are controlled using a variable throat venturi scrubber and demister arrangement. When #6 fuel oil is fired in significant amounts, caustic is used in the wet scrubber to meet the applicable SO_2 emission limit. In addition, the WFI is equipped with a combustion system designed to ensure the optimal balance between control of NO_X and limitation of CO and VOC.

(1) PM BART Review: The maximum modeled visibility impact due to PM_{10} from the WFI is 0.06 dv. The WFI is subject to EPA's "Boiler MACT" standards (40 CFR Part 63, Subpart DDDDD). Maine determined that current controls represent BART.

(2) SO_2 Bart Review: Maine identified and evaluated low sulfur fuels, wet scrubbing, dry scrubbing, and semi-dry scrubbing as potential control technologies in the reduction of SO_2 emissions from the WFI. While using low sulfur fuels is technically feasible, Maine believes that it is not a practically feasible option for the WFI based on the limited amount of fuel oil typically used in the boiler (less than 10% of the annual fuel oil heat input capacity). The WFI currently uses a water based wet scrubbing system for PM control with the addition of caustic to meet SO_2 emission limits when firing #6 fuel oil in significant amounts. Dry and semi-dry scrubbing control technologies were not considered by Maine to be either practical or technically feasible for the WFI due to the fact that they could not find any applications of these technologies on any other biomass-fired grate type boilers like the WFI. Maine also states that removing the existing wet scrubber and replacing it with a dry or semi-dry scrubbing system and a new ESP and/or fabric filter would be costly. The only remaining viable SO_2 control technology (adding caustic to the existing wet scrubbing system) has a cost effectiveness of $21,800 per ton SO_2 removed with an expected visibility improvement of less than 0.01 dv.

The WFI has very low baseline SO_2 emissions (~50 tons per year) and a maximum modeled SO_2 visibility impact of less than 0.01 dv, due to the inherent low sulfur content and alkalinity of the primary fuel (biomass) and the small amount of fuel oil used in the WFI. In addition, during the limited amount of time that #6 fuel oil is used to provide a significant portion of the heat input to the WFI, caustic is added to the wet scrubber to control SO_2 emissions. Therefore, Maine determined that additional control of SO_2 emissions from the WFI cannot be justified as BART due to the imperceptible effect it would have on visibility. Maine concluded that current controls represent BART for this unit.

(3) NO_X BART Review: Maine identified and evaluated SCR, LNB, SNCR, and combustion control methods (including an overfire air system and FGR) as potential control technologies in the reduction of NO_X emissions from the WFI. SCR and SNCR control technologies were found to be technically feasible and were evaluated further. Because the WFI primarily fires biomass on the grate, LNBs would not be effective for the majority of the time that the WFI operates. Combustion control methods were evaluated; however, none were found to be viable control options for the WFI due to the limited NO_X removal potential (<15%), potential impacts to other pollutants and boiler equipment, and the limited amount of room available for the installation of control equipment. Maine determined that SCR, SNCR and FGR have a cost effectiveness ranging from $4,676 to $17,010 per ton NO_X removed, with capital costs ranging from $3 to $7.6 million, and a resulting maximum visibility improvement of only 0.3 dv.

Maine concluded that the cost effectiveness levels are not economically justifiable for any of the control technologies evaluated given the maximum visibility improvement resulting from the use of these technologies. Maine determined that current combustion control represents BART for the WFI.

iv. Recovery Boilers #1 and #2

Recovery boilers #1 and #2 generate steam while regenerating chemicals used in the wood pulping process, and began operation in 1965 and 1976, respectively. Recovery boilers #1 and #2 have rated processing capacities of 2.50 and 3.44 million pounds per day of dry black liquor solids (BLS), respectively. Inorganic material (smelt) from the bottoms of the recovery boilers is used to produce green liquor, which is a solution of sodium sulfide and sodium carbonate salts, when it is dissolved in water or weak wash in the smelt dissolving tanks (#1 and #2). Although the recovery boilers primarily fire black liquor, they also fire small quantities of #2 and #6 fuel oils during startup, shutdown, and load stabilization conditions. The facility's license currently limits the sulfur content of the fuel oils to no more than 0.5%, by weight. Particulate matter emissions from both recovery boilers are currently controlled using an ESP.

(1) PM BART Review: PM emissions from recovery boilers #1 and #2 are currently controlled by an existing shared/common ESP. Recovery boilers

#1 and #2 are subject to MACT standards pursuant to 40 CFR Part 63, Subpart MM. Maine reviewed the RACT/BACT/LAER Clearinghouse (RBLC) and found that the current control configuration is the most effective control technology in use on recovery boilers and that there are no new, more effective technologies subsequent to the MACT standard that should be considered. Therefore, Maine determined current controls represent BART for recovery boilers #1 and #2.

(2) SO_2 BART Review: Maine has found that SO_2 emissions from recovery boilers #1 and #2 are variable due to several factors including black liquor properties (*e.g.,* sulfidity, sulfur to sodium ratio, heat value, and solids content), combustion air, liquor firing patterns, furnace design features, and type of startup fuel used. Although each recovery boiler has the ability to utilize #2 fuel oil, #6 fuel oil, and used/waste oil for startup, shutdown, and load stabilizing conditions, fuel oil firing is not a typical operating scenario for the recovery boilers. Maine identified and evaluated wet scrubbing, dry scrubbing, and semi-dry scrubbing as potential control technologies in the reduction of SO_2 emissions from recovery boilers #1 and #2; however, none of these technologies were found to have been applied to recovery boilers. Therefore, Maine determined that existing combustion controls represent BART for the control of SO_2 emissions from recovery boilers #1 and #2.

(3) NO_X BART Review: Kraft recovery boilers are a unique type of combustion source that inherently produce low levels of NO_X emissions. Most of the NO_X emissions produced by recovery boilers can be attributed to fuel based NO_X resulting from the partial oxidation of the nitrogen contained in the black liquor. Both recovery boilers #1 and #2 operate with a reducing zone in the lower part of the boiler and an oxidizing zone in the region of the liquor spray guns designed to provide secondary and tertiary staged combustion zones to complete combustion of the black liquor and minimize NO_X emissions.

Maine identified and evaluated SCR, LNB, SNCR, and combustion control methods (including the addition of a fourth level or quaternary air system and a flue gas recirculation system) as potential control technologies in the reduction of NO_X emissions from recovery boilers #1 and #2. SCR has not been applied or demonstrated successfully on any recovery boilers. It is unknown how the unique characteristics of recovery boiler exhaust gas constituents would react with a SCR catalyst, so there was no further evaluation of this control technology. Maine's evaluation of LNB technology is that it is not technically feasible to use this technology in the firing of black liquor given its tar-like qualities and the method by which it is injected into the boiler and that it would have minimal results in the firing of fuel oils given the small amounts of fuel oils that are fired in the recovery boilers. Maine's evaluation of SNCR control technologies resulted in a finding that there have been no applications of this technology on recovery boilers in the United States for a variety of reasons, including safety concerns associated with the risk of a smelt/water explosion should boiler tube walls corrode and leak near urea injection points and risks associated with an ammonia handling system for the SNCR. Operational concerns associated with SNCR were found to include the potential formation of acidic sulfates that could result in corrosion and a catastrophic boiler tube failure. Recovery boilers #1 and #2 are currently designed and operated using low excess air combined with three levels of staged combustion to minimize NO_X emissions. Additional combustion control methods were evaluated by Maine, however none were found to be viable control options for recovery boilers #1 and #2 due to the limited amount of space in the boilers to install a fourth or quaternary air system and due to the technical challenges re-circulating recovery boiler exhaust gases in a FGR system due to the unique characteristics of the exhaust gases. Therefore, Maine concluded that additional control of NO_X emissions from recovery boilers #1 and #2 are not technically feasible and the existing combustion control methods represent BART for these units.

v. Smelt Tanks #1 and #2

Smelt dissolving tank #1 is rated at 2.50 million pounds per day of dry BLS and began operation in 1965. Smelt dissolving tank #2 is rated at 3.44 million pounds per day of dry BLS and began operation in 1975. Inorganic materials from the recovery boiler floors drain into smelt dissolving tanks #1 and #2 as molten smelt. In the smelt dissolving tanks, the smelt is mixed with weak wash to form green liquor which is pumped to the causticizing area. SO_2 and PM_{10} emissions from smelt dissolving tank #1 are controlled with a dual-nozzle wet cyclonic scrubber which utilizes an alkaline scrubbing solution and was installed in 1983. SO_2 and PM_{10} emissions from smelt dissolving tank #2 are controlled with a triple-nozzle wet cyclonic scrubber which utilizes an alkaline scrubbing solution and was installed in 1976.

(1) PM BART Review: PM emissions from smelt dissolving tanks #1 and #2 are currently controlled by existing wet cyclonic scrubbers. Smelt dissolving tanks #1 and #2 are subject to MACT standards under 40 CFR Part 63, Subpart MM. After review of the RACT/BACT/LAER Clearinghouse, Maine determined that the current control configuration is the most current control technology in use on smelt dissolving tanks and represent BART for smelt dissolving tanks #1 and #2.

(2) SO_2 BART Review: Maine has found that SO_2 emissions from smelt dissolving tanks #1 and #2 are dependent on how much sulfur carries over from the respective recovery boilers with the smelt. Controlled smelt-water explosions in the smelt dissolving tanks can create SO_2 as a result of the oxidation of the sulfur in the smelt. SO_2 emissions from both smelt dissolving tanks combined are very low at approximately 5 tons per year. Maine determined that BART for SO_2 emissions from smelt dissolving tanks #1 and #2 is no additional control based on the following:

(1) SO_2 emissions from the smelt dissolving tanks during the BART baseline period were and are expected to continue to be extremely low (~5 TPY, combined); (2) the smelt dissolving tanks and associated scrubbers are designed and operated to minimize SO_2 emissions; (3) SO_2 emissions from the smelt dissolving tanks have a minimal impact on visibility (< 0.1 deciviews); and (4) additional control of SO_2 emissions from the smelt dissolving tanks would have a minimal impact on overall visibility.

(3) NO_X BART Review: Smelt Tanks #1 and #2 do not emit NO_X.

vi. Lime Kilns A and B

The ''A'' and ''B'' lime kilns process lime mud (calcium carbonate) from the causticizing area to regenerate calcium oxide. Inside the lime kilns, the lime mud is dried and heated to a high temperature where the lime mud is converted to lime. ''A'' and ''B'' lime kilns are each rated at an operating rate of 248 tons of calcium oxide per day and a heat input of 72 MMBtu/hr and began operation in 1965 and 1975, respectively. The lime kilns are licensed to fire #6 fuel oil, #2 fuel oil, propane, and used/waste oil. The facility's license currently limits the sulfur content of the fuel oil to no more than 1.8%, by weight. The ''A'' and ''B'' lime kilns also serve as an incineration device (control device) for select sources of low volume high concentration (LVHC) non-condensable gases (NCG) from pulping operations at the mill. Particulate matter emissions are controlled from the ''A'' and ''B'' lime kilns using a fixed throat venturi scrubber.

(1) PM BART Review: PM_{10} emissions from the ''A'' and ''B'' lime kilns consist primarily of dust entrained from the combustion section of the kilns. This dust consists of sodium salts, calcium carbonate, and calcium oxide. PM_{10} emissions are currently controlled by existing venturi scrubbers. These units are also subject to MACT Standards under section 112 of the CAA, and 40 CFR Part 63, Subpart MM. Maine reviewed the RACT/BACT/LAER Clearinghouse and concluded that there are two control technologies that represent the most stringent PM control (ESPs and venturi scrubbers). Both ESPs and venturi scrubbers have been used to control PM emissions from lime kilns and both are capable of a high level of control. Maine determined that use of the existing venturi scrubbers to control PM_{10} emissions from the ''A'' and ''B'' represents BART for the following reasons: (1) The existing venturi scrubbers maintain compliance with the MACT emission limits; (2) the replacement of the existing venturi scrubbers with dry ESPs could increase SO_2 emissions from the lime kilns when compared to use of the venturi scrubbers; (3) the replacement of the existing venturi scrubbers with wet ESPs would result in high capital costs ($1.5 million per kiln); and (4)visibility impacts from the lime kilns are minimal (0.03–0.04 dv) and installation of additional control would result in inconsequential improvement in visibility.

(2) SO_2 BART Review: Maine has found that a significant portion of the SO_2 formed during the combustion process in the lime kilns is removed as the regenerated quicklime in the kilns functions as a scrubbing agent. In addition, the non-condensable gas (NCG) collection system is equipped with a scrubber that uses white liquor (sodium hydroxide or NaOH) and thus the sulfur loading from the NCGs is minimized. SO_2 emissions from both lime kilns combined are very low at less than 4 tons per year primarily due to the alkalinity of the lime. Maine determined that BART for SO_2 emissions from the ''A'' and ''B'' lime kilns is no additional control based on the following: (1) SO_2 emissions from the lime kilns during the BART baseline period were and are expected to continue to be extremely low (<4 TPY, combined); (2) there are no control technologies available for lime kilns that are more cost effective than the inherent scrubbing that occurs for SO_2 due to the alkalinity of the lime in the process; (3) SO_2 emissions from the smelt dissolving tanks have a minimal impact on visibility (<0.1 deciviews); and (4) additional control of SO_2 emissions from the lime kilns would have a minimal impact on overall visibility.

(3) NO_X BART Review: Maine identified and evaluated SCR, LNB, and SNCR as potential NO_X control technologies. Maine's evaluation of SCR and SNCR as potential NO_X control technologies revealed that they have not been installed on any lime kilns in the pulp and paper industry, and were also found to be technically infeasible. Maine's research with respect to lime kilns and LNB technology revealed that the technology is actually a combination of passive combustion control measures used to minimize NO_X formation primarily from thermal NO_X and to a lesser extent fuel NO_X. These combustion control measures include careful design of the fuel feed system in order to ensure proper mixing of the fuel with air and burner ''tuning'' or optimization which impacts fuel burning efficiency and overall flame length. Verso Androscoggin already incorporates burner ''tuning'' in the operation and maintenance of the ''A'' and ''B'' lime kilns to optimize the relationship between NO_X emissions and operating efficiency. Maine determined that the current use of LNB represents BART for control of NO_X emissions from ''A'' and ''B'' lime kilns and that no additional level of control is technically feasible. Maine also notes in the BART analysis that existing NO_X emissions from the ''A'' and ''B'' lime kilns have a minimal impact on visibility (< 0.1 deciviews) and that additional control of NO_X emissions would have a minimal impact on the overall improvement to visibility.

vii. Flash Dryer

The flash dryer is used to dry pulp for resale or for storage and future use on one of Verso Androscoggin's paper machines. The flash dryer has a rated heat input capacity of 84 MMBtu/hr and began operation in 1964. The flash dryer is licensed to fire #2 fuel oil, which contains a maximum sulfur content of 0.5%. Particulate matter emissions are controlled using a wet shower system and SO_2 emissions are limited through the firing of #2 fuel oil.

(1) PM BART Review: Particulate matter emissions from the flash dryer are currently controlled by the use of a wet shower system. Maine concluded that the application of add-on controls and the use of cleaner fuels are not practical considerations for controlling PM emissions from the flash dryers and that with potential visibility impacts from the flash dryer being extremely low, any emission reductions would have an inconsequential impact on visibility improvement (less than 0.1 dv). Therefore, Maine determined that current controls represent BART for the flash dryer.

(2) SO_2 BART Review: The flash dryer is limited by license conditions to firing #2 fuel oil with a maximum sulfur content of 0.5%, by weight and so has relatively low SO_2 emissions. Although Verso Androscoggin could replace the use of #2 fuel oil with lower sulfur containing fuels such as low sulfur (0.05%) diesel fuel or natural gas, the flash dryer is predicted to have peak visibility impacts of 0.1 deciviews or less. Therefore, Maine determined that current controls represent BART.

(3) NO_X BART Review: The flash dryer is not equipped with any NO_X control equipment. NO_X emissions from the flash dryer are primarily generated from the nitrogen component in the fuel oil. Verso Androscoggin currently uses good maintenance practices to minimize NO_X emissions from the flash dryer. Maine's investigation of conventional NO_X combustion controls (*e.g.,* LNB, OFA, and FGR) lead to a finding that they are either unavailable for installation on the flash dryer or are not feasible for a combustion source as small as the flash dryer. Therefore, Maine determined that controls are sufficient for BART.

viii. EPA Assessment

EPA finds that Maine's analyses and conclusions for the BART emission units located at the Verso Androscoggin facility are reasonable. EPA guidance gives the States wide latitude in the application of the five factors. EPA believes that Maine's approach is reasonable for determining that current controls are sufficient for recovery boilers #1 and #2, WFI, smelt tanks #1 and #2, lime kilns A and B, the flash dryer. EPA finds, with respect to the power boilers #1 and #2, that Maine's determination that natural gas, #2 oil, or wet scrubbing technology are not economically justifiable, is reasonable.[15]

[15] Maine's SIP revision submittal is unclear as to whether Maine judged the cost effectiveness of these technologies based on the longer, 2002–2008, timeframe or the shorter, 2008–2009, timeframe. States have broad discretion in setting BART, and EPA finds that Maine could have reasonably concluded that even the lower cost of these technologies under the 2002–2008 timeframe was not economically justifiable given the incremental visibility benefits associated with the more stringent technology.

EPA also finds that Maine's determination that #6 oil with 0.7% sulfur content and current NO_X controls represent BART is reasonable.[16] EPA has reviewed the Maine analyses and concluded they were conducted in a manner consistent with EPA's BART Guidelines.

f. Red Shield Environmental, LLC

i. Background

Red Shield operates a pulp mill in Old Town, Maine. Pulp production at the facility begins with wood chips entering the facility, where they are conveyed to, and ''cooked'' in an impregnation vessel followed by a digester. In the digester, white liquor is used to dissolve the lignin from around the wood fibers. The pulp from the digester is then washed in the brownstock washer system to remove residual spent cooking liquor. After bleaching the pulp to the desired brightness, it is the dried. There are two BART eligible units at the facility; recovery boiler #4, and the lime kiln. These units are similar to those already discussed above at SD Warren and Verso Androscoggin, and Maine similarly concluded that current controls represent BART at Red Shield Environmental.

ii. Recovery Boiler #4

Recovery boiler #4, manufactured by Babcock & Wilcox, was originally installed in 1971. However, in June of 1987, a smelt bed explosion damaged the boiler. Recovery boiler #4 was repaired and returned to operation by December of 1987. Recovery boiler #4 has the capability of firing black liquor, either alone or in combination with #6 fuel oil, and is limited to firing 2.57 MMlbs of black liquor solids per day. The total heat input capacity of firing #6 fuel alone in the boiler is 375 MMBtu/hr (2500 gal/hr). An ESP controls particulate matter from the unit.

(1) PM BART Review: Recovery boiler #4 is equipped with an ESP for particulate matter, and a limit of 0.028 grains per dry standard cubic foot (gr/dscf) [17] has been established pursuant to MACT, 40 CFR Part 63, Subpart MM. Therefore, Maine determined current controls were determined to represent BART.

(2) SO_2 BART Review: SO_2 emissions from the recovery boiler #4 are limited through the use of low sulfur (0.5% fuel sulfur content limit) as established by air emission license amendment A–180–71–Z–A and required by the facility's Part 70 air emission license (A–180–70–A–I). Therefore, Maine determined the current controls represent BART.

(3) NO_X BART Review: Recovery boiler #4 is subject to Maine's federally enforceable Chapter 138—Reasonably Available Control Technology for Facilities that Emit Nitrogen Oxides (69 FR 66748) which contains the applicable NO_X ppm limit (150 ppm). The unit is also subject to a best practical treatment (BPT) NO_X limit of 154.4 pounds per hour (lb/hr) when firing black liquor, and a 188.2 lb/hr limit when firing oil. The maximum visibility impact from this source on a Class I area is minimal, 0.2631 dv, 0.2070 dv impact due to NO_X. Therefore, Maine determined the current controls represent BART.

iii. Lime Kiln

The lime kiln, lime mud clarifier, storage tanks, precoat filter, and scrubber are all part of the lime kiln system. Lime mud ($CaCO_3$) from the recausticizing slaker system is processed back into lime (CaO) through the lime kiln system. The lime kiln was installed in 1974 and is controlled with a venturi scrubber system. The lime kiln burner has a rating of 64 MMBtu/hr and fires primarily #6 fuel oil with a 2% sulfur content. Propane is used only for the pilot flame. Low volume high concentration (LVHC) gases are also fired in the lime kiln.

(1) PM BART Review: The lime kiln is equipped with a venturi scrubber system for particulate matter, and is subject to 40 CFR Part 63, Subpart MM, which contains an applicable PM emission limit of 0.064 gr/dscf. However, 40 CFR Part 63, Subpart MM also allows Red Shield to propose an alternative PM limit (0.13 gr/dscf), which takes into account facility emissions from the #4 Recovery Boiler and #4 Smelt Tank. Maine also established an applicable PM emission limit of 32.9 lb/hr under Maine's BPT program. Therefore, Maine determined current controls represent BART.

(2) SO_2 BART Review: The lime kiln is subject to Maine's BPT with an applicable limit of 7.1 lb/hr. Therefore, Maine determined that current controls represent BART.

(3) NO_X BART Review: The lime kiln is subject to Maine's Chapter 138 which contains the applicable NO_X ppm limit (170 ppm on a dry basis). The applicable NO_X lb/hr emission limit is 36.0 lb/hr. The maximum visibility impact from this source on a Class I area is minimal, 0.1338 dv, 0.085 dv impact due to NO_X. Therefore, Maine determined that current controls represent BART.

iv. EPA Assessment

Under EPA Guidance, States have wide discretion as to how they assess the BART five factors. Visibility modeling indicates the maximum visibility impairment from the #4 recovery boiler and the lime kiln is 0.26 dv and 0.13 dv, respectively. The sources at Red Shield Environmental are similar to units at Verso Androscoggin and several other facilities. Maine analyzed the potential for add on controls for recovery boilers and lime kilns for Verso Androscoggin, finding additional controls for those units to be technologically infeasible. Based on that analysis, EPA finds that Maine's conclusion that the current controls are sufficient for BART is reasonable. EPA has reviewed the Maine analyses and concluded they were conducted in a manner consistent with EPA's BART Guidelines.

6. Enforceability of BART

As noted above, some of the BART units are subject to MACT standards that are federally enforceable. In addition, as part of the Maine's December 6, 2010 Regional Haze SIP submittal, Maine DEP included source specific permits which detail emission limits, and record keeping and reporting requirements associated with the installation of the identified BART controls. EPA is proposing to approve the submitted license conditions as part of this rulemaking action. If finalized, as proposed, these conditions will become federally enforceable.

E. Long-Term Strategy

As described in Section II. E of this action, the LTS is a compilation of state-specific control measures relied on by the state to obtain its share of emission reductions to support the RPGs established by Maine, New Hampshire, Vermont, and New Jersey, the nearby Class I area States. Maine's LTS for the

[16] The MANE–VU recommended limit for these types of units is 0.5% sulfur content. However, under a state provision, 38 M.R.S.A. § 603–A, sub-§ 8—that was not submitted as part of the SIP revision and is not currently being considered by EPA—Maine DEP is limited to either requiring 1% sulfur content or a 50% reduction. Because States have broad discretion in setting BART, EPA finds that requiring 0.7% sulfur content is reasonable; however it should be noted that under 38 M.R.S.A. § 603–A, sub-§ 2(A), which EPA is proposing to approve today, these units will be required to use 0.5% sulfur content fuel by January 1, 2018.

[17] The narrative that accompanies Maine's SIP revision submittal lists this limit as 0.044 gr/dscf. However, the associated Table 10–9 *BART Determination Summary for Red Shield Environmental, LLC* of the SIP submittal and the license amendment issued by Maine DEP that EPA is proposing to approve into Maine's SIP lists the limit as 0.028 gr/dscf. Therefore this limit is the enforceable limit.

first implementation period addresses the emissions reductions from federal, state, and local controls that take effect in the State from the baseline period starting in 2002 until 2018. Maine participated in the MANE–VU regional strategy development process. As a participant, Maine supported a regional approach towards deciding which control measures to pursue for regional haze, which was based on technical analyses documented in the following reports: (a) The MANE–VU Contribution report; (b) *Assessment of Reasonable Progress for Regional Haze in MANE–VU Class I Areas,* available at *www.marama.org/visibility/RPG/FinalReport/RPGFinalReport_070907.pdf;* c) *Five-Factor Analysis of BART–Eligible Sources: Survey of Options for Conducting BART Determinations,* available at *www.nescaum.org/documents/bart-final-memo-06-28-07.pdf;* and d) *Assessment of Control Technology Options for BART–Eligible Sources: Steam Electric Boilers, Industrial Boilers, Cement Plants and Paper, and Pulp Facilities,* available at *www.nescaum.org/documents/bart-control-assessment.pdf.*

The LTS was developed by Maine, in coordination with MANE–VU, identifying the emissions units within Maine that are currently likely have the largest impacts on visibility at nearby Class I areas, estimating emissions reductions for 2018, based on all controls required under federal and state regulations for the 2002–2018 period (including BART), and comparing projected visibility improvement with the uniform rate of progress for the nearby Class I area.

Maine's LTS includes measures needed to achieve its share of emissions reductions agreed upon through the consultation process with MANE–VU Class I States and includes enforceable emissions limitations, compliance schedules, and other measures necessary to achieve the reasonable progress goals established by New Hampshire, Vermont, and New Jersey for their Class I areas.

1. Emissions Inventory for 2018 With Federal and State Control Requirements

The emissions inventory used in the regional haze technical analyses was developed by MARAMA for MANE–VU with assistance from Maine. The 2018 emissions inventory was developed by projecting 2002 emissions, and assuming emissions growth due to projected increases in economic activity as well as applying reductions expected from federal and state regulations affecting the emissions of VOC and the visibility-impairing pollutants NO_X, PM_{10}, $PM_{2.5}$, and SO_2. The BART guidelines direct States to exercise judgment in deciding whether VOC and NH_3 impair visibility in their Class I area(s). As discussed further in Section IV.C.1 above, MANE–VU demonstrated that anthropogenic emissions of sulfates are the major contributor to $PM_{2.5}$ mass and visibility impairment at Class I areas in the Northeast and Mid-Atlantic region. It was also determined that the total ammonia emissions in the MANE–VU region are extremely small.

MANE–VU developed emissions inventories for four inventory source classifications: (1) Stationary point sources, (2) stationary area sources, (3) off-road mobile sources, and (4) on-road mobile sources. The New York Department of Environmental Conservation also developed an inventory of biogenic emissions for the entire MANE–VU region. Stationary point sources are those sources that emit greater than a specified tonnage per year, depending on the pollutant, with data provided at the facility level. Stationary area sources are those sources whose individual emissions are relatively small, but due to the large number of these sources, the collective emissions from the source category could be significant. Off-road mobile sources are equipment that can move but do not use the roadways. On-road mobile source emissions are automobiles, trucks, and motorcycles that use the roadway system. The emissions from these sources are estimated by vehicle type and road type. Biogenic sources are natural sources like trees, crops, grasses, and natural decay of plants. Stationary point sources emission data is tracked at the facility level. For all other source types, emissions are summed on the county level.

There are many federal and state control programs being implemented that MANE–VU and Maine anticipate will reduce emissions between the baseline period and 2018. Emission reductions from these control programs were projected to achieve substantial visibility improvement by 2018 at all of the MANE–VU Class I areas. To assess emissions reductions from ongoing air pollution control programs, BART, and reasonable progress measures, MANE–VU developed emissions projections for 2018 called ''Best and Final.'' The emissions inventory provided by the Maine DEP for the ''Best and Final'' 2018 projections is based on expected control requirements.

Maine relied on emission reductions from the following ongoing and expected air pollution control programs as part of the state's long term strategy. Maine's EGU Regulation (Chapter 145 NO_X Control Program) limits the NO_X emission rate to 0.22 lb NO_X/MMBtu for fossil fuel-fired units greater than 25 MW built before 1995 with a heat input capacity between 250 and 750 MMBtu/hr, and also limits the NO_X emission rate to 0.17 lb NO_X/MMBtu for fossil fuel-fired units greater than 25 MW built before 1995 with a heat input capacity greater than 750 MMBtu/hr.

Non-EGU point source controls in Maine include: 2-year, 4-year, 7-year, and 10-year MACT Standards; Combustion Turbine and Reciprocating Internal Combustion Engine (RICE) MACT; Industrial Boiler/Process Heater MACT.[18]

On July 30, 2007, the U.S. District Court of Appeals mandated the vacatur and remand of the Industrial Boiler MACT Rule.[19] This MACT was vacated since it was directly affected by the vacatur and remand of the Commercial and Industrial Solid Waste Incinerator (CISWI) Definition Rule. EPA proposed a new Industrial Boiler MACT rule to address the vacatur on June 4, 2010, (75 FR 32006) and issued a final rule on March 21, 2011 (76 FR 15608).

Maine's modeling included emission reductions from the vacated Industrial Boiler MACT rule. Maine did not redo its modeling analysis when the rule was re-issued. However, the expected reductions in SO_2 and PM resulting from both the vacated and revised MACT rule are a relatively small component of the Maine inventory. The expected emission reductions from the revised MACT rule are comparable to the modeled reductions from the vacated MACT rule. In addition, the new MACT rule requires compliance by 2014 and therefore the expected emission reductions will be achieved prior to the end of the first implementation period in 2018.

Controls on area sources expected in 2018 include the following Maine state regulations: architectural and industrial maintenance coatings (06–096 CMR Chapter 151) and solvent cleaning (06–096 CMR Chapter 130); mobile equipment repair and refinishing (06–096 CMR Chapter 153); and VOC control measures for portable fuel containers (06–096 CMR Chapter 155) and consumer products (06–096 CMR Chapter 152). All of these rules have been incorporated into the Maine SIP.

[18] The inventory was prepared before the MACT for industrial Boilers and Process Heaters was vacated. Control efficiency was assumed to be 4 percent for SO_2 and 40 percent for PM. The overall effects of including these reductions in the inventory are estimated to be minimal.

[19] *NRDC* v. *EPA,* 489F.3d 1250.

See www.epa.gov/region1/topics/air/sips/sips_me.html.

Controls on mobile sources expected in 2018 include: Stage I vapor recovery systems at gasoline dispensing facility in the state and Stage II vapor recovery at any gasoline dispensing facility in York, Cumberland, and Sagadahoc counties (06–096 CMR Chapter 118); [20] Federal On-Board Refueling Vapor Recovery (ORVR) Rule; Federal Tier 2 Motor Vehicle Emissions Standards and Gasoline Sulfur Requirements; Federal Heavy-Duty Diesel Engine Emission Standards for Trucks and Buses; and Federal Emission Standards for Large Industrial Spark-Ignition Engines and Recreation Vehicles.

Controls on non-road sources expected by 2018 include the following federal regulations: Control of Air Pollution: Determination of Significance for Nonroad Sources and Emission Standards for New Nonroad Compression Ignition Engines at or above 37 kilowatts (59 FR 31306, June 17, 1994); Control of Emissions of Air Pollution from Nonroad Diesel Engines (63 FR 56967, October 23, 1998); Control of Emissions from Nonroad Large Spark-Ignition Engines and Recreational Engines (67 FR 68241, November 8, 2002); and Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuels (69 FR 38958, June 29, 2004).

Tables 4 and 5 are summaries of the 2002 baseline and 2018 estimated emissions inventories for Maine. The 2018 estimated emissions include emissions growth as well as emission reductions due to ongoing emission control strategies and reasonable progress goals.

TABLE 7—2002 EMISSIONS INVENTORY SUMMARY FOR MAINE

[Tons per year]

	NH_3	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Mobile	1,468	54,687	1,239	934	1,804	23,037
Nonroad	11	9,820	1,437	1,329	917	31,144
EGU Point	145	7,831	1,169	888	9,299	842
Non-EGU Point	700	12,108	6,120	4,899	14,412	4,477
Area	8,747	7,360	168,953	32,774	13,149	100,621
Biogenics	....	2,018	....	....	....	600,205
Totals	11,071	93,824	178,919	40,825	39,581	760,327

TABLE 8—2018 EMISSION INVENTORY SUMMARY FOR MAINE

[Tons per year]

	NH_3	NO_X	PM_{10}	$PM_{2.5}$	SO_2	VOC
Mobile	1,715	12,828	272	266	894	10,414
Nonroad	15	6,543	1,086	978	82	21,988
EGU Point	139	1,827	296	279	[21] 6,806	53
Non-EGU Point	859	14,137	7,477	5,922	13,082	5,708
Area	12,312	7,036	57,411	18,877	1,127	90,866
Biogenics	....	2,018	....	....	....	600,205
Totals	15,041	44,390	[22] 66,542	26,321	21,991	729,235

2. Modeling to Support the LTS and Determine Visibility Improvement for Uniform Rate of Progress

MANE–VU performed modeling for the regional haze LTS for the 11 Mid-Atlantic and Northeast States and the District of Columbia. The modeling analysis is a complex technical evaluation that began with selection of the modeling system. MANE–VU used the following modeling system:

- Meteorological Model: The Fifth-Generation Pennsylvania State University/National Center for Atmospheric Research (NCAR) Mesoscale Meteorological Model (MM5) version 3.6 is a nonhydrostatic, prognostic meteorological model routinely used for urban- and regional-scale photochemical, $PM_{2.5}$, and regional haze regulatory modeling studies.
- Emissions Model: The Sparse Matrix Operator Kernel Emissions (SMOKE) version 2.1 modeling system is an emissions modeling system that generates hourly gridded speciated emission inputs of mobile, non-road mobile, area, point, fire, and biogenic emission sources for photochemical grid models.
- Air Quality Model: The EPA's Models-3/Community Multiscale Air Quality (CMAQ) version 4.5.1 is a photochemical grid model capable of addressing ozone, PM, visibility and acid deposition at a regional scale.
- Air Quality Model: The Regional Model for Aerosols and Deposition

[20] Maine recently revised Chapter 118 to no longer require Stage II vapor recovery controls as of January 1, 2012. The previous version of the rule, however, is still currently included in the Maine SIP. Maine DEP is currently developing a SIP submittal for the revised rule which would ensure that Clean Air Act antibacksliding requirements are met. The SIP submittal must provide for equivalent or greater reductions than under the currently approved Stage II program. Therefore, consideration of these reductions in the model is reasonable.

[21] The 2018 Final Modeling Inventory SO_2 emissions estimates for the EGU sector includes adjustments to the EGU sector, including: (1) Assessing the implementation of BART at eight BART-eligible units, including Maine's Wyman Station; (2) implementation of the MANE–VU EGU strategy; (3) increases in SO_2 emissions to estimate the effect of emissions trading under the CAIR program; and (4) emissions increases in the MANE–VU region to reflect state's best estimates that some sources predicted by the IPM model to be closed would continue to operates, and information about where and when emission controls would be installed. The net result of these adjustments was an increase in SO_2 emissions from EGUs in Maine.

[22] An adjustment factor was applied during the processing of emissions data to restate fugitive particulate matter emissions. Grid models have been found to overestimate fugitive dust impacts when compared with ambient samples; therefore, an adjustment is typically applied to account for the removal of particles by vegetation and other terrain features. The summary emissions for PM_{10} in Table 8 reflect this adjustment. A comparable adjustment was not made to the PM_{10} value listed in Table 7.

(REMSAD) is a Eulerian grid model that was primarily used to determine the attribution of sulfate species in the Eastern US via the species-tagging scheme.

• Air Quality Model: The California Puff Model (CALPUFF), version 5 is a non-steady-state Lagrangian puff model used to access the contribution of individual States' emissions to sulfate levels at selected Class I receptor sites.

CMAQ modeling of regional haze in the MANE–VU region for 2002 and 2018 was carried out on a grid of 12x12 kilometer (km) cells that covers the 11 MANE–VU States (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont) and the District of Columbia and States adjacent to them. This grid is nested within a larger national CMAQ modeling grid of 36x36 km grid cells that covers the continental United States, portions of Canada and Mexico, and portions of the Atlantic and Pacific Oceans along the east and west coasts. Selection of a representative period of meteorology is crucial for evaluating baseline air quality conditions and projecting future changes in air quality due to changes in emissions of visibility-impairing pollutants. MANE–VU conducted an in-depth analysis which resulted in the selection of the entire year of 2002 (January 1–December 31) as the best period of meteorology available for conducting the CMAQ modeling. The MANE–VU States' modeling was developed consistent with EPA's *Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze,* April 2007 (EPA–454/B–07–002), available at *www.epa.gov/scram001/guidance/guide/final-03-p.m.-rh-guidance.pdf*, and EPA document, *Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations,* August 2005 and updated November 2005 (EPA–454/R–05–001), available at *www.epa.gov/ttnchie1/eidocs/eiguid/index.html* [hereinafter *EPA's Modeling Guidance*].

MANE–VU examined the model performance of the regional modeling for the areas of interest before determining whether the CMAQ model results were suitable for use in the regional haze assessment of the LTS and for use in the modeling assessment. The modeling assessment predicts future levels of emissions and visibility impairment used to support the LTS and to compare predicted, modeled visibility levels with those on the uniform rate of progress. In keeping with the objective of the CMAQ modeling platform, the air quality model performance was evaluated using graphical and statistical assessments based on measured ozone, fine particles, and acid deposition from various monitoring networks and databases for the 2002 base year. MANE–VU used a diverse set of statistical parameters from the EPA's Modeling Guidance to stress and examine the model and modeling inputs. Once MANE–VU determined the model performance to be acceptable, MANE–VU used the model to assess the 2018 RPGs using the current and future year air quality modeling predictions, and compared the RPGs to the uniform rate of progress.

In accordance with 40 CFR 51.308(d)(3), the Maine DEP provided the appropriate supporting documentation for all required analyses used to determine the State's LTS. The technical analyses and modeling used to develop the glide path and to support the LTS are consistent with EPA's RHR, and interim and final EPA Modeling Guidance. EPA finds the MANE–VU technical modeling to support the LTS and determine visibility improvement for the uniform rate of progress acceptable because the modeling system was chosen and used according to EPA Modeling Guidance. EPA agrees with the MANE–VU model performance procedures and results, and that the CMAQ is an appropriate tool for the regional haze assessments for the Maine LTS and regional haze SIP.

3. Meeting the MANE–VU ''Ask''

Maine in cooperation with the MANE–VU States developed the MANE–VU ''Ask'' to provide for reasonable progress towards achieving natural visibility at the MANE–VU Class I areas. The ''Ask'' included: (a) Timely implementation of BART requirements; (b) a 90 percent reduction in SO_2 emissions from each of the EGU stacks identified by MANE–VU comprising a total of 167 stacks; (c) adoption of a low sulfur fuel oil strategy; and (d) continued evaluation of other control measures to reduce SO_2 and NO_X emissions.

a. Timely Implementation of BART

The Maine BART determinations are discussed in section IV.D. In the modeling to demonstrate the sufficiency of the LTS to achieve the RPGs, Maine assumed a 1,442 ton per year reduction in SO_2 from SAPPI Somerset Power Boiler #1 due to BART control. Maine later determined that this unit was not BART eligible due to federally enforceable operation restrictions. However, Maine demonstrated that the SO_2 emissions reductions assumed in the modeling were reasonable since an additional, federally enforceable Title V license condition limits the amount of time boiler #1 can be used to incinerate total reduced sulfur gases. This limit compensates for the initial assumption of 1,442 ton per year reduction in SO_2.

b. Ninety Percent Reduction in SO_2 Emissions From Each of the Electric Generating Unit (EGU) Stacks Identified by MANE–VU Comprising a Total of 167 Stacks

Maine has one EGU stack identified by MANE–VU as a top contributor to visibility impairment in any of the MANE–VU Class I areas, FPL Energy Wyman Station boiler #4.

Boiler #4 is a peaking unit, and operated at an average annual capacity factor of less than 10 percent between 2002 and 2009, with annual SO_2 emissions of 1,170 tons in 2002.

Although FGD through the use of a wet, semi-dry or dry scrubber is technically feasible, this technology is cost prohibitive due to the low-capacity factor of this unit. In lieu of requiring add-on controls, Maine will be utilizing its low-sulfur fuels program meet the ''Ask'' at this unit. The Maine Low Sulfur Fuel Program requires the use of low-sulfur fuel containing no more than 0.5% sulfur beginning January 1, 2018, providing an 84 percent reduction in SO_2 emissions from its baseline emissions based on the use of 3.0% sulfur fuel.

c. Maine Low Sulfur Fuel Oil Strategy

The MANE–VU low sulfur fuel oil strategy includes two phases. Phase I of the strategy requires the reduction of sulfur in distillate oil to 0.05% sulfur by weight (500 parts per million (ppm)) by no later than 2014. Phase II requires reductions of sulfur in #4 residual oil to 0.25% sulfur by weight by no later than 2018; in #6 residual oil to 0.5% sulfur by weight by no later than 2018; and a further reduction in the sulfur content of distillate oil to 15 ppm by 2018.

The Maine Low Sulfur Oil Program, as established in statute at 38 M.R.S.A. § 603–A, sub-§ 2, instituted the following restrictions on fuel sulfur content for residual (#4, #5, and #6) and distillate oil:

(1) Beginning January 1, 2018; a person may not use residual oil with a sulfur content greater than 0.5% by weight;

(2) Beginning January 1, 2016, a person may not use distillate oil with a sulfur content greater than 0.005% by weight; and

(3) Beginning January 1, 2018, a person may not use distillate oil with a sulfur content greater than 0.0015% by weight.

In addition to the low sulfur requirements for distillate and residual oil, the program contains two elements not included in the MANE–VU Low Sulfur Oil Strategy. These elements are an exemption from the low sulfur content limits for sources using distillate fuel for manufacturing purposes and an equivalent alternative sulfur reduction program. Neither element is included in Maine's implementation plan submittal or approved by EPA.

Maine DEP does not believe that the low sulfur content limit exemption for manufacturing purposes will have a significant impact on the emission reductions afforded by this strategy for 2018 and beyond. While the exemption allows the continued use of high-sulfur [23] distillate oil at several manufacturing facilities, there are structural impediments to the actual use of these fuels. First, since there is only a limited potential market for high-sulfur distillate [24] the Maine DEP believes that this fuel will not be readily available, and will likely be more expensive than the more widely used 15 ppm distillate. Distributors and wholesalers of distillate fuels have noted that supplying high-sulfur distillate to a limited market introduces additional costs to their industry in the form of segregated storage and transportation/delivery systems, since even incidental contamination (co-mingling) can lead to non-compliance issues.[25]

Recognizing the potential for incidental contamination of ULSD, segregated storage and transportation/delivery systems are probably the only mechanisms that can assure compliance with federal and state ULSD requirements for the petroleum marketing industry. Given the low demand, and additional storage, transportation and delivery costs, Maine DEP does not believe that high sulfur distillate fuel will be widely used by the manufacturing sector in 2018 and later.[26]

d. Continued Evaluation of Other Control Measures To Reduce SO_2 and NO_X Emissions

While Maine DEP continues to evaluate other control measures to reduce SO_2 and NO_X emission, Maine has adopted a program to reduce wood smoke emissions from outdoor wood and pellet boilers.

Maine's Control of Emissions From Outdoor Wood Boilers Rule (06–096 CMR 150) includes EPA's recommended Phase I particulate emission limit of 0.60 lbs/MMBtu/hr heat input as the standard for new outdoor wood-fired hydronic heaters (OWHH), also known as outdoor wood boilers, sold in Maine beginning April 1, 2008. Beginning April 1, 2010 new OWHH sold in Maine were required to meet a more stringent particulate emission standard of 0.32 lbs/MMBtu heat output (Phase II). The rule also establishes setback, stack height, particulate emission limits, and fuel requirements for outdoor wood boilers. Chapter 150 was subsequently amended to control the sale, installation, use, and siting of outdoor wood boilers that combust biomass pellets as fuel. Maine has submitted this rule to EPA for incorporation as part of the Regional Haze SIP.

Maine did not include emission reductions which result from the promulgation of the outdoor wood boilers rule in the visibility modeling to ensure reasonable progress. However, Maine is including this program in its regional Haze SIP as a SIP enhancement, or strengthening measure. EPA finds that Maine has sufficiently addressed the MANE–VU ''Ask'' by means of Maine's Low Sulfur Fuel oil strategy, control on Wyman Unit #4, the submitted BART determinations, and the outdoor wood boiler control strategy.

4. Additional Considerations for the LTS

40 CFR 51.308(d)(3)(v) requires States to consider the following factors in developing the long term strategy:

a. Emission reductions due to ongoing air pollution control programs, including measures to address reasonably attributable visibility impairment;

b. Measures to mitigate the impacts of construction activities;

c. Emission limitations and schedules for compliance to achieve the reasonable progress goal;

d. Source retirement and replacement schedules;

e. Smoke management techniques for agricultural and forestry management purposes including plans as currently exist within the State for these purposes;

f. Enforceability of emissions limitations and control measures; and

g. The anticipated net effect on visibility due to projected changes in point area, and mobile source emissions over the period addressed by the long-term strategy.

a. Emission Reductions Including RAVI

No source in Maine has been identified as subject to RAVI. An exhaustive list of Maine's ongoing air pollution control programs is included in section IV.E.1.

b. Construction Activities

The Regional Haze Rule requires Maine to consider measures to mitigate the impacts of construction activities on regional haze. MANE–VU's consideration of control measures for construction activities is documented in ''Technical Support Document on Measures To Mitigate the Visibility Impacts of Construction Activities in the MANE–VU Region, Draft, October 20, 2006.''[27]

The construction industry is already subject to requirements for controlling pollutants that contribute to visibility impairment. For example, federal regulations require the reduction of SO_2 emissions from construction vehicles. At the state level, Maine currently regulates emissions of fugitive dust through Maine's Chapter 101, Visible Emissions rules, which establishes opacity limits for emissions from several categories of air contaminant sources, including fugitive emissions from construction activities. This rule has been incorporated into the Maine SIP. *See www.epa.gov/region1/topics/air/sips/me/2003_ME_ch101.pdf.*

MANE–VU's Contribution Assessment found that, from a regional haze perspective, crustal material generally does not play a major role. On the 20 percent best-visibility days during the 2000–2004 baseline period, crustal material accounted for 6 to 11 percent of the particle-related light extinction at the MANE–VU Class I Areas. On the 20 percent worst-visibility days, however, the ratio was reduced to 2 to 3 percent. Furthermore, the crustal fraction is largely made up of pollutants of natural origin (*e.g.,* soil or sea salt) that are not targeted under the Regional

[23] Containing 2,000–5,000 ppm sulfur.

[24] All other users of distillate (diesel) fuel in Maine will be subject to the 15 ppm sulfur limits (including general use and space heating at manufacturing facilities).

[25] For example, only 7 gallons of a 5,000 ppm sulfur fuel added to 7,500 gallons of ULSD would raise the sulfur content by 5.0 ppm.

[26] As noted above, Maine believes that future (2018) use of distillate fuel by the manufacturing sector will be limited due to cost and compliance concerns. Nevertheless, projected 2018 SO_2 emissions for Maine have been adjusted to address this exemption, and its impact on non-EGU point source emissions.

[27] ''Technical Support Document on Measures to Mitigate the Visibility Impacts of Construction Activities in the MANE–VU Region, Draft, October 20, 2006'' has been provided as part of the docket to this proposed rulemaking.

Haze Rule. Nevertheless, the crustal fraction at any given location can be heavily influenced by the proximity of construction activities; and construction activities occurring in the immediate vicinity of MANE–VU Class I area could have a noticeable effect on visibility.

For this regional haze SIP, Maine concluded that its current regulations are currently sufficient to mitigate the impacts of construction activities. Any future deliberations on potential control measures for construction activities and the possible implementation will be documented in the first regional haze SIP progress report in 2012. EPA has determined that Maine has adequately addressed measures to mitigate the impacts of construction activities.

c. Emission Limitations and Schedules for Compliance To Achieve the RPG

In addition to the existing CAA control requirements discussed in section IV.E.1, Maine has adopted a low sulfur fuel oil strategy consistent with the MANE–VU ''Ask.'' The compliance date for Phase I will be in 2016 and the compliance date for Phase II will be in 2018.

d. Source Retirement and Replacement Schedule

Section 40 CFR 51.308(d)(3)(v)(D) of the Regional Haze Rule requires Maine to consider source retirement and replacement schedules in developing the long term strategy. Source retirement and replacement were considered in developing the 2018 emissions. EPA has determined that Maine has satisfactorily considered source retirement and replacement schedules as part of the LTS.

e. Smoke Management Techniques

The Regional Haze Rule requires States to consider smoke management techniques related to agricultural and forestry management in developing the long-term strategy. MANE–VU's analysis of smoke management in the context of regional haze is documented in ''Technical Support Document on Agricultural and Smoke Management in the MANE–VU Region, September 1, 2006.'' [28]

Maine does not currently have a Smoke Management Program (SMP). However, SMPs are required only when smoke impacts from fires managed for resources benefits contribute significantly to regional haze. The emissions inventory presented in the above-cited document indicates that agricultural, managed and prescribed burning emissions are very minor; the inventory estimates that, in Maine, those emissions from those source categories totaled 7.8 tons of PM_{10}, 6.7 tons of $PM_{2.5}$ and 0.5 tons of SO_2 in 2002, which constitute 0.08%, 0.2% and 0.006% of the total inventory for these pollutants, respectively.

Source apportionment results show that wood smoke is a moderate contributor to visibility impairment at some Class I areas in the MANE–VU region; however, smoke is not a large contributor to haze in MANE–VU Class I areas on either the 20% best or 20% worst visibility days. Moreover, most of the wood smoke is attributable to residential wood combustion. Therefore, it is unlikely that fires for agricultural or forestry management cause large impacts on visibility in any of the Class I areas in the MANE–VU region. On rare occasions, smoke from major fires degrades air quality and visibility in the MANE–VU area. However, these fires are generally unwanted wildfires that are not subject to SMPs. Therefore, an SMP is not required for Maine. EPA agrees that it is not necessary for Maine to have an Agricultural and Forestry Smoke Management Plan to address visibility impairment at this time.

f. Enforceability of Emission Limitations and Control Measures

All emission limitations included as part of Maine's Regional Haze SIP are either currently federally enforceable or will become federally enforceable if this action is finalized as proposed.

g. The Anticipated Net Effect on Visibility

MANE–VU used the best and final emission inventory to model progress expected toward the goal of natural visibility conditions for the first regional haze planning period. All of the MANE–VU Class I areas are expected to achieve greater progress toward the natural visibility goal than the uniform rate of progress, or the progress expected by extrapolating a trend line from current visibility conditions to natural visibility conditions.[29]

In summary, EPA is proposing to find that Maine has adequately addressed the LTS regional haze requirements.

F. Consultation With States and Federal Land Managers

On May 10, 2006, the MANE–VU State Air Directors adopted the Inter-RPO State/Tribal and FLM Consultation Framework that documented the consultation process within the context of regional phase planning, and was intended to create greater certainty and understanding among RPOs. MANE–VU States held ten consultation meetings and/or conference calls from March 1, 2007 through March 21, 2008. In addition to MANE–VU members attending these meetings and conference calls, participants from the Visibility Improvement State and Tribal Association of the Southeast (VISTAS) RPO, Midwest RPO, and the relevant Federal Land Managers were also in attendance. In addition to the conference calls and meeting, the FLMs were given the opportunity to review and comment on each of the technical documents developed by MANE–VU.

On May 27, 2010, Maine submitted a draft Regional Haze SIP to the relevant FLMs for review and comment pursuant to 40 CFR 51.308(i)(2). The FLMs provided comments on the draft Regional Haze SIP in accordance with 40 CFR 51.308(i)(3). The comments received from the FLMs were addressed and incorporated in Maine's SIP revision. Most of the comments were requests for additional detail as to various aspects of the SIP. These comments and Maine's response to comments can be found in the docket for this proposed rulemaking.

On August 12, 2010, Maine published a notice of agency rulemaking—proposal. This initiated a 30-day comment period and the opportunity to request a public hearing. Maine DEP received comments from EPA, the United States Department of Fish and Wildlife Service, the United States Department of Agriculture, and Florida Power and Light Company. Maine's response to comments is included as an attachment to the SIP submittal.

To address the requirement for continuing consultation procedures with the FLMs under 40 CFR 51.308(i)(4), Maine commits in their SIP to ongoing consultation with the FLMs on Regional Haze issues throughout the implementation.

EPA is proposing to find that Maine has addressed the requirements for consultation with States impacting Maine's Class I areas and with the Federal Land Managers.

G. Monitoring Strategy and Other Implementation Plan Requirements

Section 51.308(d)(4) of the Regional Haze Rule requires a monitoring strategy

[28] ''Technical Support Document on Agricultural and Smoke Management in the MANE–VU Region, September 1, 2006'' has been included as part of the docket to this proposed rulemaking.

[29] Projected visibility improvements for each MANE–VU Class I area can be found in the NESCAUM document dated May 13, 2008, ''2018 Visibility Projections'' (*www.nescaum.org/documents/2018-visibility-projections-final-05-13-08.pdf/*).

for measuring, characterizing, and reporting regional haze visibility impairment that is representative of all mandatory Class I Areas within the State of Maine. The monitoring strategy relies upon participation in the IMPROVE network.

The State of Maine participates in the IMPROVE network, and will evaluate the monitoring network periodically and make those changes needed to be able to assess whether reasonable progress goals are being achieved in each of Maine's mandatory Class I Areas. In its SIP submittal, Maine is committing to continued support of the IMPROVE network at Acadia National Park and Moosehorn National Wildlife Refuge.

40 CFR 51.308(d)(4)(i) requires States to establish additional monitoring sites or equipment as needed to assess whether reasonable progress goals are being achieved toward visibility improvement at mandatory Class I areas. At this time, the current monitors are sufficient to make this assessment.

In its SIP submittal, Maine commits to meet the requirements under 40 CFR 51.308(d)(4)(iv) to report to EPA visibility data for each of Maine's Class I Areas annually.

The Regional Haze Rule (40 CFR 51.308(d)(4)(vi)) requires the inclusion of other monitoring elements, including reporting, recordkeeping, and other measures, necessary to assess and report visibility. While the Maine DEP has concluded that the current IMPROVE network provides sufficient data to adequately measure and report progress toward the goals set for MANE–VU Class I sites to which the State contributes, the State has also found additional monitoring information useful to assess visibility and fine particle pollution in the region in the past. Examples of these data include results from the MANE–VU Regional Aerosol Intensive Network (RAIN), which provides continuous, speciated information on rural aerosol characteristics and visibility parameters; the EPA Clean Air Status and Trends Network (CASTNET), which has provided complementary rural fine particle speciation data at non-class I sites; the EPA Speciation Trends Network (STN), which provides speciated, urban fine particle data to help develop a comprehensive picture of local and regional sources; state-operated rural and urban speciation sites using IMPROVE or STN methods; and the Supersites program, which has provided information through special studies that generally expands our understanding of the processes that control fine particle formation and transport in the region. Maine plans to continue to utilize these and other data—as they are available and fiscal realities allow—to improve their understanding of visibility impairment and to document progress toward our reasonable progress goals under the Regional Haze Rule.

H. Periodic SIP Revisions and Five-Year Progress Reports

Consistent with the requirements of 40 CFR 51.308(g), Maine has committed to submitting a report on reasonable progress (in the form of a SIP revision) to the EPA every five years following the initial submittal of its regional haze SIP. The reasonable progress report will evaluate the progress made towards the RPGs for the MANE–VU Class I areas, located in Maine, New Hampshire, Vermont, and New Jersey.

Section 40 CFR 51.308(f) requires the Maine DEP to submit periodic revisions to its Regional Haze SIP by July 31, 2018, and every ten years thereafter. Maine DEP acknowledges and agrees to comply with this schedule.

Pursuant to 40 CFR 51.308(d)(4)(v), Maine DEP will also make periodic updates to the Maine emissions inventory. Maine DEP plans to complete these updates to coincide with the progress reports. Actual emissions will be compared to projected modeled emissions in the progress reports.

Lastly, pursuant to 40 CFR 51.308(h), Maine DEP will submit a determination of adequacy of its regional haze SIP revision whenever a progress report is submitted. Maine's regional haze SIP states that, depending on the findings of its five-year review, Maine will take one or more of the following actions at that time, whichever actions are appropriate or necessary:

- If Maine determines that the existing State Implementation Plan requires no further substantive revision in order to achieve established goals for visibility improvement and emissions reductions, Maine DEP will provide to the EPA Administrator a negative declaration that further revision of the existing plan is not needed.
- If Maine determines that its implementation plan is or may be inadequate to ensure reasonable progress as a result of emissions from sources in one or more other state(s) which participated in the regional planning process, Maine will provide notification to the EPA Administrator and to those other state(s). Maine will also collaborate with the other state(s) through the regional planning process for the purpose of developing additional strategies to address any such deficiencies in Maine's plan.
- If Maine determines that its implementation plan is or may be inadequate to ensure reasonable progress as a result of emissions from sources in another country, Maine will provide notification, along with available information, to the EPA Administrator.
- If Maine determines that the implementation plan is or may be inadequate to ensure reasonable progress as a result of emissions from sources within the state, Maine will revise its implementation plan to address the plan's deficiencies within one year from this determination.

V. What action is EPA proposing to take?

EPA is proposing to approve of Maine's December 9, 2010 SIP revision as meeting the applicable implementing regulations found in 40 CFR 51.308. EPA is also proposing to approve the following license conditions and incorporate them into the SIP: Conditions (16) A, B, G, and H of license amendment A–406–77–3–M for Katahdin Paper Company issued on July 8, 2009; license amendment A–214–77–9–M for Rumford Paper Company issued on January 8, 2010; license amendment A–22–77–5–M for Verso Bucksport, LLC issued November 2, 2010; license amendment A–214–77–2–M for Woodland Pulp, LLC (formerly Domtar) issued November 2, 2010; license amendment A–388–77–2–M for FPL Energy Wyman, LLC & Wyman IV, LLC issued November 2, 2010; license amendment A–19–77–5–M for S. D. Warren Company issued November 2, 2010; license amendment A–203–77–11–M for Verso Androscoggin LLC issued November 2, 2010; and license amendment A–180–77–1–A for Red Shield Environmental LLC issued November 29, 2007.

EPA is proposing to approve Maine's low sulfur fuel oil legislation, 38 MRSA § 603–A, sub-§ 2(A), and to incorporate this legislation into the Maine SIP. Furthermore, EPA is also proposing to approve the following Maine state regulation and incorporate it into the SIP: Maine Chapter 150, Control of Emissions from Outdoor Wood Boilers.

VI. Statutory and Executive Order Reviews

Under the Clean Air Act, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act.

Accordingly, this proposed action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed action:

- Is not a ''significant regulatory action'' subject to review by the Office of Management and Budget under Executive Order 12866 (58 FR 51735, October 4, 1993);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this rule does not have Tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country located in the state, and EPA notes that it will not impose substantial direct costs on Tribal governments or preempt Tribal law.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: November 15, 2011.

Ira W. Leighton,

Acting Regional Administrator, EPA New England.

[FR Doc. 2011–30650 Filed 11–28–11; 8:45 am]

BILLING CODE 6560–50–P