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GOVERNOR

007
STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



GERALD D. REID
COMMISSIONER

MEMORANDUM

TO: Board of Environmental Protection
FROM: Jeffrey S. Crawford, Bureau of Air Quality
DATE: October 28, 2019 - for the Board Meeting of November 7, 2019
RE: Clean Air Act Section 176A(a)(2) Petition and Revisions to the State Implementation Plan – Request for Public Hearing

Background:

The primary goal of the Clean Air Act (CAA) is to achieve national ambient air quality levels protective of public health and welfare by establishing air quality standards and imposing limitations on air pollutant emissions from both stationary and mobile sources.

The CAA directs the U.S. Environmental Protection Agency (EPA) to develop primary and secondary national ambient air quality standards (NAAQS) for "criteria pollutants."¹ The primary standards are necessary to protect public health with what EPA calls "an ample margin of safety," while secondary standards are intended to protect against environmental and property damage.²

The EPA strives to meet the goals of the CAA through a combination of its own standards and plans developed by the states with EPA oversight. For example, EPA establishes the NAAQS, but the task of achieving these standards is delegated to the individual states. The CAA requires states to prepare and update a state implementation plan (SIP) that ensures that each region within the state will come into compliance with the NAAQS. A state is free, within bounds established by EPA, to develop its own SIP and choose its own regulatory requirements to attain the national standards. At the same time, the CAA grants the EPA power to approve or reject SIPs, to replace SIPs with Federal Implementation Plans (FIPs) when deemed necessary, and to monitor achievement of goals laid out in SIPs and FIPs.

Description:

The Department is proposing the following revisions to the SIP:

1. Limited Maintenance Plans for the Portland and Midcoast Ozone Maintenance Areas

¹ The criteria pollutants are ground-level ozone, particulate matter, sulfur dioxide, lead, carbon monoxide and nitrogen dioxide.

² The Department's proposals address ground level ozone. Because ozone is not directly emitted from air pollution emitting sources, emissions of ozone precursor pollutants are controlled to reduce ambient concentrations of ozone to attainment levels in non-attainment areas. The two ground-level ozone precursor pollutants targeted to reduce ambient concentrations of ozone are nitrogen oxides (NO_x) and volatile organic compounds (VOC). In the atmosphere, NO_x may react with VOC in the presence of sunlight to form ozone.

Under the CAA, nine Maine counties were designated as nonattainment for the 1979 1-hour National Ambient Air Quality Standard (NAAQS) for ozone: York, Cumberland and Sagadahoc counties (Planning Area 1); Androscoggin and Kennebec counties (Planning Area 2); and Knox and Lincoln counties (Planning Area 3) were designated as "moderate" nonattainment, while Waldo and Hancock counties (Planning Area 4) were designated as "marginal" nonattainment for ozone.

On July 16, 1997 EPA issued updated final air quality 8-hour standards³ for ozone set at a level of 0.084 parts per million (ppm). The standards were based on an 8-hour average of ozone concentrations and are more directly related to ozone concentrations associated with health effects.

Under the 1997 ozone standard, Maine initially had two nonattainment areas. The Portland Ozone Maintenance Area consists of 57 cities and towns in York, Cumberland and Sagadahoc Counties along with Durham, Maine in Androscoggin County, and the Midcoast Ozone Maintenance Area Nonattainment Area consists of 55 coastal towns and islands in Hancock, Knox, Lincoln and Waldo counties. Based on 2003-2005 monitoring data, these areas had come into compliance with the 1997 ozone NAAQS, and in 2006, the Department submitted a request to EPA for the redesignation of these areas to attainment and demonstrated that these areas would maintain compliance with the NAAQS for at least 10 years after EPA approval of the redesignation request. The Department's redesignation requests were subsequently approved on December 11, 2006.

As part of the redesignation process, the CAA also requires that redesignated areas also submit a second 10-year maintenance plan demonstrating continued compliance with the NAAQS during the 10-year period following the expiration of the first maintenance plan. The proposed Limited Maintenance Plans for the Portland and Midcoast Ozone Maintenance Areas address the period from 2016 through 2026 and demonstrate that these areas will continue to maintain the 1997 ozone NAAQS throughout.⁴

2. Section 176A(a)(2) Petition

Ozone at downwind locations is often attributable to long-range transport of pollutants from distant sources and is the focus of federal, regional, and state control strategies. To better address ozone transport in the Northeast and Mid-Atlantic states, Congress created the Ozone Transport Commission (OTC) to develop regional control requirements for ozone and ozone precursor emissions to better address regional ozone transport across state boundaries. The region encompassed by the OTC, often referred to as the Ozone Transport Region (OTR), is comprised of the six New England states (Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island), along with New York, New Jersey, Pennsylvania, Maryland, Delaware, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia and part of northern Virginia.

Regional control requirements within the OTR are comparable to those required for designated ozone nonattainment areas, even though portions of the OTC are, in fact, designated ozone attainment areas and neither contribute to nonattainment nor interfere with maintenance of the ozone NAAQS in downwind areas. In Maine, all areas of the state are effectively treated as "moderate" ozone nonattainment areas and are required to implement the following CAA-mandated controls:

³ There are both primary (health effects) and secondary (environmental impacts) ozone standards. Both the primary and secondary standards were set at 0.084 ppm.

⁴ Maine did not previously address the requirement for a second 10-year maintenance plan due to EPA's 2015 promulgation of a final rule implementing the 2008 ozone NAAQS. Under EPA's 2015 implementation rule, states were no longer responsible for developing and submitting maintenance plans for former nonattainment areas under the 1997 ozone NAAQS (subject to conditions). This portion of the implementation rule was later overturned by the courts.

- 1) Enhanced motor vehicle emissions inspection program in metropolitan statistical areas (or part thereof) with a population of 100,000 or more;
- 2) Reasonably available control technology with respect to all sources of volatile organic compounds in the State covered by a control techniques guideline;
- 3) Statewide Stage II vapor recovery control program or comparable measures;
- 4) Reasonably available control technology for major sources of VOCs and NO_x; and
- 5) Nonattainment new source review (NSR).⁵

Since Maine has attained the ozone NAAQS since 2006, the Department is proposing to remove portions of the state from the OTR pursuant to CAA Section 176A(a)(2), which states that EPA's Administrator may remove any state or portion of a state from the OTR whenever control of emissions in that state or portion of the state will "not significantly contribute to the attainment of the standard in any area in the region" (i.e., emissions without OTR-mandated controls will not contribute to non-attainment in any area in the OTR). The Department's CAA Section 176A(a)(2) Petition is based on a demonstration that NO_x and VOC emissions from northern and eastern Maine are not significant contributors to ozone nonattainment in other states nor do they interfere with maintenance of the ozone NAAQS in those Maine municipalities that will remain in the OTR.

Upon EPA's approval of this petition, nonattainment NSR will no longer be applicable except within the Portland and Midcoast Ozone Maintenance Areas. New major sources and major modifications of existing sources in those areas removed from the OTR will instead be subject to best available control technology (BACT) requirements that will allow the Department to fully consider both the environmental and economic impacts of specific emission control requirements. In addition, Maine is committing to the continued implementation of all other OTR requirements, including RACT for all sources of VOCs in the state covered by a control techniques guideline along with RACT for major sources of VOCs and NO_x and will periodically review the impact of emissions from those areas removed from the OTR on both other states and the Maine towns and cities remaining in the OTR.

3. Section 110(a)(1) and (2) Infrastructure SIP

Sections 110(a)(1) and (2) of the Clean Air Act require all states to submit plan elements to provide for the implementation, maintenance, and enforcement of the NAAQS. Sections 110(a)(1) and (2) further require states to address basic SIP requirements, including but not limited to the following elements: emissions limits and other control measures, ambient air quality monitoring, a program for the enforcement of control measures, adequate resources to implement the SIP, and public notification and government consultation. These elements are commonly called "infrastructure" elements of the SIP.

Whenever EPA promulgates a new or revised NAAQS, states are required to submit SIP revisions certifying to EPA that the state has the elements in place to allow it to continue to maintain the NAAQS. This submission addresses each of the required elements of CAA Section 110(a)(2) and affirms that Maine's SIP meets the requirements of CAA Sections 110(a)(1) and (2) for the 2015 ozone NAAQS.

4. Section 110(a)(2)(D)(i)(I) Transport SIP

CAA Section 110(a)(2)(D)(i)(I) requires each state to submit to EPA new or revised SIPs that "contain adequate provisions prohibiting, consistent with the provisions of this subchapter, any source or other

⁵ Nonattainment NSR requirements for Maine consist of lowest achievable emission rate (LAER) controls and emission offset requirements at a rate of at least 1.15:1.

type of emissions activity within the State from emitting any air pollutant in amounts which will contribute significantly to nonattainment in, or interfere with maintenance by, any other state with respect to any such national primary or secondary ambient air quality standard." The EPA often refers to CAA Section 110(a)(2)(D)(i)(I) as the good neighbor provision and to SIP revisions addressing this requirement as Good Neighbor SIPs or interstate transport SIPs.

The Department's proposed Good Neighbor SIP supplements its Section 110(a)(1) and (2) Infrastructure SIP to demonstrate that emissions from sources in Maine do not significantly contribute to nonattainment in, or interfere with maintenance by, any other state with respect to the 2015 ozone NAAQS. The Department's analysis of recent EPA and Ozone Transport Commission's (OTC) 2023 modeling demonstrates that Maine meets its good neighbor requirements for the 2015 NAAQS.

Departmental Recommendation:

The Department recommends that the Board schedule the Department's Section 176A(a)(2) Petition and proposed SIP revisions to a public hearing on December 12, 2019.

Estimated Time of Presentation:

1 hour