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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R03-OAR-2011-0854; FRL-9488-1]

Approval and Promulgation of Air Quality Implementation Plans; Pennsylvania; Adoption of the Liberty-Clairton Nonattainment Area 1997 Fine Particulate Matter National Ambient Air Quality Standard Attainment Demonstration

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: EPA is proposing to approve, with one condition, State Implementation Plan (SIP) revisions submitted by the Pennsylvania Department of Environmental Protection (PADEP) on June 17, 2011. These revisions include the 1997 fine particulate matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) attainment plan for the Liberty-Clairton nonattainment area (Liberty-Clairton Area) including a request for EPA to make a determination that the appropriate attainment deadline for this nonattainment area is April 5, 2015. EPA is proposing to approve the attainment plan for the Liberty-Clairton Area that includes the emissions inventories, the reasonably available control measures/reasonably available control technology (RACM/RACT), reasonable further progress (RFP), and contingency measures portions of the attainment demonstration, and the transportation conformity motor vehicle emissions budgets (MVEBs) that demonstrate attainment of the 1997 $PM_{2.5}$ NAAQS. EPA is proposing to conditionally approve the air quality modeling submitted to demonstrate attainment of the 1997 $PM_{2.5}$ NAAQS. In order for EPA to fully approve the modeling analysis, PADEP must update the modeling to ensure that the modeling results in the demonstration continue to be

valid, considering the reductions from the Cross State Air Pollution Rule (CSAPR) rule that will replace the Clean Air Interstate Rule (CAIR) in 2012, and must submit the revised modeling to EPA within one year after the final conditional approval. EPA is also proposing to determine that the attainment date for the Liberty-Clairton Area is April 5, 2015.

These revisions also add the definition of $PM_{2.5}$, the 1997 annual $PM_{2.5}$ NAAQS of 15 micrograms per cubic meter ($\mu g/m^3$), the 2006 24-hour NAAQS of 35 $\mu g/m^3$ and the related references to the list of criteria pollutant standards in the Allegheny County Department of Health (ACHD) regulations. EPA is proposing to approve the addition of the definition of $PM_{2.5}$ and inclusion of the 1997 annual and 2006 24-hour $PM_{2.5}$ NAAQS into the ACHD regulations. These actions are being taken under the Clean Air Act (CAA).

DATES: Written comments must be received on or before [insert date 30 days from date of publication].

ADDRESSES: Submit your comments, identified by Docket ID Number **EPA-R03-OAR-2011-0854** by one of the following methods:

A. www.regulations.gov. Follow the on-line instructions for submitting comments.

B. E-mail: fernandez.cristina@epa.gov.

C. Mail: EPA-R03-OAR-2011-0854, Cristina Fernandez, Associate Director, Office of Air Planning, Mailcode 3AP30, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103.

D. Hand Delivery: At the previously-listed EPA Region III address. Such deliveries are only accepted during the Dockets normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. **EPA-R03-OAR-2011-0854**. EPA's policy is that all comments received will be included in the public docket without change, and may be made available online at 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 information that you consider to be CBI or otherwise protected through www.regulations.gov or e-mail. The www.regulations.gov website 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 e-mail comment directly to EPA without going through www.regulations.gov, your e-mail 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 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 www.regulations.gov or in hard copy during normal business hours at the Air Protection Division, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103. Copies of the State submittal are available at the Pennsylvania Department of Environmental Protection, Bureau of Air Quality Control, P.O. Box 8468, 400 Market Street, Harrisburg, Pennsylvania 17105 and the Allegheny County Health Department, Bureau of Environmental Quality, Division of Air Quality, 301 39th Street, Pittsburgh, Pennsylvania 15201.

FOR FURTHER INFORMATION CONTACT: Jacqueline Lewis at (215) 814-2037 or by e-mail at lewis.jacqueline@epa.gov, or Marilyn Powers at (215) 814-2308, or by email at powers.marilyn@epa.gov.

SUPPLEMENTARY INFORMATION: On June 17, 2011, PADEP submitted a revision to the Allegheny County portion of the Pennsylvania SIP. The SIP revision includes an attainment demonstration and base-year inventory for the Liberty-Clairton Area developed by ACHD, which includes an analysis of RACM/RACT, RFP, contingency measures to be implemented if violations occur after attainment or if RFP requirements are not met, and MVEBs for purposes of transportation conformity. In addition, the SIP submittal includes amendments to Allegheny County regulations that adopt the air quality standards and associated definitions necessary to

implement the 1997 and 2006 $PM_{2.5}$ NAAQS. Throughout this document, whenever "we," "us," or "our" is used, we mean EPA.

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I. What Action is EPA Proposing to Take?

EPA is proposing to approve, with one exception, Pennsylvania's SIP revisions submitted to EPA on June 17, 2011 for the purpose of demonstrating attainment of the 1997 $PM_{2.5}$ NAAQS

for the Liberty-Clairton Area. EPA proposes to fully approve the attainment demonstration for the Liberty-Clairton Area that includes the base year emissions inventories, RACM/RACT analysis, RFP plan, contingency measures, and MVEBs that meet the applicable requirements of the CAA and the $PM_{2.5}$ Implementation Rule in 40 CFR part 41, subpart Z. EPA proposes to conditionally approve the air quality modeling analysis portion of the attainment demonstration because the analysis relies on reductions from the CAIR, which was remanded and will be replaced by CSAPR in 2012. EPA proposes to determine that the attainment date for the 1997 $PM_{2.5}$ NAAQS in the Liberty-Clairton Area is April 5, 2015.

EPA is also proposing to approve amendments to ACHD regulations that add the definition of $PM_{2.5}$ and the level of the 1997 annual and 2006 24-hour $PM_{2.5}$ NAAQS. Specifically, EPA proposes to approve the addition of the 1997 annual $PM_{2.5}$ standard of 15 $\mu g/m^3$, the 2006 24-hour PM2.5 standard of 35 $\mu g/m^3$, the related references to the list of standards in ACHD Article XXI Section 2101.10, and the new definition of $PM_{2.5}$ to ACHD Article XXI Section 2101.20.

II. What is the Background for EPA's Proposed Actions?

On July 18, 1997 (62 FR 36852), EPA established new NAAQS for $PM_{2.5}$, particulate matter with a diameter of 2.5 microns or less, including an annual standard of 15.0 $\mu g/m^3$ based on a three year average of annual mean $PM_{2.5}$ concentrations and a 24-hour (daily) standard of 65 $\mu g/m^3$ based on a three year average of the 98th percentile of 24-hour concentrations. See, 40 CFR 50.7. EPA established these standards after considering substantial evidence from numerous health studies demonstrating that serious health effects are associated with exposures

to $PM_{2.5}$ concentrations above the levels of these standards.

Epidemiological studies have shown statistically significant correlations between elevated $PM_{2.5}$ levels and premature mortality. Other important health effects associated with $PM_{2.5}$ exposure include aggravation of respiratory and cardiovascular disease (as indicated by increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days), changes in lung function and increased respiratory symptoms, as well as new evidence for more subtle indicators of cardiovascular health. Individuals particularly sensitive to $PM_{2.5}$ exposure include older adults, people with heart and lung disease, and children. See, EPA, *Air Quality Criteria for Particulate Matter*, No. EPA/600/P–99/002aF and EPA/600/P–99/002bF, October 2004. $PM_{2.5}$ can be emitted directly into the atmosphere as a solid or liquid particle (primary $PM_{2.5}$ or direct $PM_{2.5}$) or can be formed in the atmosphere as a result of various chemical reactions from precursor emissions of nitrogen oxides (NOx), sulfur oxides (SO_2), volatile organic compounds (VOC), and ammonia (NH_3). (72 FR 20586, 20589, April 25, 2007).

Following promulgation of a new or revised NAAQS, EPA is required by the CAA section 107(d) to designate areas throughout the nation as attaining or not attaining the NAAQS. On January 5, 2005 (70 FR 944), EPA published initial air quality designations for the 1997 $PM_{2.5}$ NAAQS, using air quality monitoring data for the three-year periods of 2001-2003 or 2002-2004. These designations became effective on April 5, 2005. On November 13, 2009 (74 FR 58688), EPA revised the existing designation tables in part 81 to clarify that the 1997 designations were for both the annual $PM_{2.5}$ NAAQS and the 24-hour $PM_{2.5}$ NAAQS.

On October 17, 2006 (71 FR 61144), EPA strengthened the 24-hour $PM_{2.5}$ NAAQS by lowering the level to 35 $\mu g/m^3$. At the same time, it retained the level of the annual $PM_{2.5}$ standard at 15.0 g/m^3. On November 13, 2009 (74 FR 58688), EPA designated areas, including the Liberty-Clairton Area, with respect to the revised 24-hour NAAQS. Pennsylvania is now required to submit an attainment plan for the 24-hour standard no later than three years after the effective date of the designation, that is, no later than December 14, 2012. In this notice, all references to the $PM_{2.5}$ NAAQS are to the 1997 24-hour $PM_{2.5}$ standard of 65 $\mu g/m^3$ and annual standard of 15 $\mu g/m^3$, as codified in 40 CFR 50.7.

EPA designated the Liberty-Clairton Area nonattainment for both the 1997 annual and 24-hour $PM_{2.5}$ standards. See, 40 CFR 81.305. The Liberty-Clairton Area is located within the Pittsburgh Beaver Valley Area, as a separate nonattainment area. The Liberty-Clairton Area was designated as a separate distinctively local-source impacted nonattainment area because the combination of emissions from the local sources in a narrow river valley creates a local air quality problem uniquely different from the remainder of the Pittsburgh-Beaver Valley Area. The Liberty-Clairton Area is home to 25,000 people about 1% the population of the Pittsburgh Metropolitan Statistical Area (MSA) and includes the boroughs of Glassport, Liberty, Lincoln, Port Vue, and the City of Clairton.

EPA is implementing the 1997 $PM_{2.5}$ NAAQS under Title 1, Part D, subpart 1 of the CAA, which includes section 172, "Nonattainment plan provisions." Section 172(a)(2) requires that a

$PM_{2.5}$ nonattainment area attain the NAAQS "as expeditiously as practicable," but no later than five years from the date of the area's designation as nonattainment. This section also allows EPA to grant up to a five-year extension of an area's attainment date based on the severity of the area's nonattainment and the availability and feasibility of controls. EPA designated the Liberty-Clairton Area as nonattainment for the 1997 $PM_{2.5}$ NAAQS effective April 5, 2005, and thus the applicable attainment date is either : a) no later than April 5, 2010, or b) no later than April 5, 2015 if EPA grant a full five-year extension. Section 172(c) contains the general statutory planning requirements applicable to all nonattainment areas, including the requirements for emissions inventories, RACM/RACT, attainment demonstrations, RFP demonstrations, and contingency measures.

On April 25, 2007, EPA issued the Clean Air Fine Particle Implementation Rule for the 1997 $PM_{2.5}$ NAAQS. See, 72 FR 20586, codified at 40 CFR part 51, subpart Z ($PM_{2.5}$ Implementation Rule). The $PM_{2.5}$ Implementation Rule and its preamble address the statutory planning requirements for emissions inventories, RACM/RACT, attainment demonstrations including air quality modeling requirements, RFP demonstrations, and contingency measures. This rule also addresses other matters such as which $PM_{2.5}$ precursors must be addressed by the state in its attainment SIP and applicable attainment dates.[1] We discuss each of these CAA and regulatory

1 In June 2007, a petition to the EPA Administrator was filed on behalf of several public health and environmental groups requesting reconsideration of four provisions in the $PM_{2.5}$ Implementation Rule. See Earthjustice, Petition for Reconsideration, "In the Matter of Final Clean Air Fine Particle Implementation Rule," June 25, 2007. These provisions are 1) the presumption that compliance with the Clean Air Interstate Rule satisfies the NO_x and SO_2 RACT requirements for electric generating units; 2) the deferral of the requirement to establish emission limits for condensable particulate matter (CPM) until January 1, 2011; 3) revisions to the criteria for analyzing the economic feasibility of RACT; and 4) the use of out-of-area emissions reductions to demonstrate RFP. These provisions are found in the $PM_{2.5}$ Implementation Rule and preamble at 72 FR 20586 at 20623-20628, 40 CFR section 51.1002(c),

requirements for $PM_{2.5}$ attainment plan in more detail below.

III. What is EPA's Analysis of the Liberty-Clairton Attainment Plan SIP Revision?

A. Attainment Demonstration

CAA section 172 requires a state to submit a plan for each of its nonattainment areas that demonstrates attainment of the applicable ambient air quality standard as expeditiously as practicable, but no later than the specified attainment date. Under the $PM_{2.5}$ Implementation Rule, this demonstration should consist of four parts:

1. Technical analyses that locate, identify, and quantify sources of emissions that are contributing to violations of the $PM_{2.5}$ NAAQS;

2. Analyses of future year emissions reductions and air quality improvement resulting from already-adopted national, state, and local programs and from potential new state and local measures to meet the RACM/RACT and RFP requirements in the area;

3. Adopted emissions reduction measures with schedules for implementation; and

4. Contingency measures required under section 172(c)(9) of the CAA. See, 40 CFR 51.1007 and 72 FR 20586 at 20605.

1. Pollutants Addressed

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72 FR 20586, 20619-20620 and 20636, respectively. On May 13, 2010, EPA granted the petition with respect to the fourth issue. Letter, Gina McCarthy, EPA, to David Baron and Paul Cort, Earthjustice, May 13, 2010. On April 25, 2011, EPA granted the petition with respect to the first and third issues but denied the petition with respect to the second issue given that the deferral period for CPM emissions limits had already ended. Letter, Lisa P. Jackson, EPA, to Paul Cort, Earthjustice, April 25, 2011. EPA intends to publish a **Federal Register** notice that will announce the granting of the latter petition with respect to certain issues and to initiate a notice and comment process to consider proposed changes to the 2007 $PM_{2.5}$ Implementation Rule.

EPA recognizes NOx, SO_2, VOC, and NH_3 as the main precursor gases associated with the formation of secondary $PM_{2.5}$ in the ambient air. These gas-phase $PM_{2.5}$ precursors undergo chemical reactions in the atmosphere to form secondary particulate matter. Formation of secondary $PM_{2.5}$ depends on numerous factors including the concentrations of precursors; the concentrations of other gaseous reactive species; atmospheric conditions including solar radiation, temperature, and relative humidity; and the interactions of precursors with preexisting particles and with cloud or fog droplets. See, 72 FR 20586 at 20589.

As discussed previously, a state must submit emissions inventories for each of the four $PM_{2.5}$ precursor pollutants. See, 72 FR 20586 at 20589 and 40 CFR 51.1008(a)(1). However, the overall contribution of different precursors to $PM_{2.5}$ formation and the effectiveness of alternative potential control measures will vary by area. Thus, the precursors that a state should regulate to attain the $PM_{2.5}$ NAAQS can also vary to some extent from area to area. See, 72 FR 20586 at 20589. In the $PM_{2.5}$ Implementation Rule, EPA did not require that all potential $PM_{2.5}$ precursors must be controlled in each specific nonattainment area. See, 72 FR 20586 at 20589. Instead, for reasons explained in the rule's preamble, a state must evaluate control measures for sources of SO_2 in addition to sources of direct $PM_{2.5}$ in all nonattainment areas. See, 40 CFR 51.1002(c) and (c)(1). A state must also evaluate control measures for sources of NO_x unless the state and/or EPA determine that control of NO_x emissions would not significantly reduce $PM_{2.5}$ concentrations in the specific nonattainment area. See, 40 CFR 51.1002(c)(2). In contrast, EPA has determined in the $PM_{2.5}$ Implementation Rule that a state does not need to address controls for sources of VOC and NH_3 unless the state and/or EPA make a technical demonstration that

such controls would significantly contribute to reducing $PM_{2.5}$ concentrations in the specific nonattainment area at issue. See, 40 CFR 51.1002(c)(3) and (4). Such a demonstration is required "if the administrative record related to development of its SIP shows that the presumption is not technically justified for that area." See, 40 CFR 51.1002(c)(5). "Significantly contributes" in this context means that a significant reduction in emissions of the precursor from sources in the area would be projected to provide a significant reduction in $PM_{2.5}$ concentrations in the area. See, 72 FR 20586 at 20590. Although EPA did not establish a quantitative test for determining what constitutes a significant change, EPA noted that even relatively small reductions in $PM_{2.5}$ levels are estimated to result in worthwhile public health benefits.

EPA further explained that a technical demonstration to reverse the presumption for NO_x, VOC, or NH_3 in any area could consider the emissions inventory, speciation data, modeling information, or other special studies such as monitoring of additional compounds, receptor modeling, or special monitoring studies. See, 72 FR 20586 at 20596-20597. These factors could indicate that the emissions or ambient concentration contributions of a precursor, or the sensitivity of ambient concentrations to changes in precursor emissions, differs for a specific nonattainment area from the presumption EPA established for that precursor in the $PM_{2.5}$ Implementation Rule.

ACHD submitted 2002 baseline inventories for each of the four precursor emissions and for direct $PM_{2.5}$ emissions within the Liberty-Clairton Area. Its submission did not specifically discuss the

presumptions in the $PM_{2.5}$ Implementation Rule, however its discussion of the emissions inventory and control strategy implicitly showed that ACHD did not reverse the presumptions for NOx, VOC or NH_3. Therefore, evaluation of control measures for VOC and/or NH_3 was not considered, while NOx was considered, and, in accordance with policies described in the $PM_{2.5}$ Implementation Rule, the Liberty-Clairton Area $PM_{2.5}$ attainment demonstration evaluated emissions of direct $PM_{2.5}$, SO_2, and NOx.

2. Emissions Inventories

CAA section 172(c)(3) requires a state to submit a plan provision that includes a "comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant." The $PM_{2.5}$ Implementation Rule requires a state to include direct $PM_{2.5}$ emissions and emissions of all $PM_{2.5}$ precursors in this inventory, even if it has determined that control of any of these precursors is not necessary for expeditious attainment. See, 40 CFR 51.1008(a)(1) and 72 FR 20586 at 20648. Direct $PM_{2.5}$ includes condensable particulate matter. See, 40 CFR 51.1000. The $PM_{2.5}$ precursors are NO_x, SO_2, VOC, and NH_3. The inventories should meet the data reporting requirements of EPA's Air Emissions Reporting Requirements (AERR) (71 FR 69, January 3, 2006) and include any additional inventory information needed to support the SIP's attainment demonstration and RFP demonstration. See, 40 CFR 51.1008(a)(1) and (2). Baseline emissions inventories are required for the attainment demonstration and for meeting RFP requirements. As determined on the date of designation, the base year for these inventories should be the most recent calendar year for which a complete inventory was required to be submitted to EPA. The emissions inventory for calendar year 2002 or other suitable year should be used for attainment planning and RFP plans for areas initially designated nonattainment for

the $PM_{2.5}$ NAAQS in 2005. See, 40 CFR 51.1008(b). EPA has provided additional guidance for $PM_{2.5}$ emissions inventories in the "Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter NAAQS and Regional Haze Regulations," November 2005 (EPA–454/R–05–001).

The base year and future year baseline planning inventories for direct $PM_{2.5}$ and all $PM_{2.5}$ precursors for the Liberty-Clairton Area were included as part of this submittal. The base year used for the Liberty-Clairton Area SIP was 2002. ACHD developed a point source inventory comprised of emissions for five facilities in the nonattainment area, which included two major sources, two synthetic minor sources, and one minor source. ACHD then made corrections to the point source inventory for these sources to include the addition of condensable PM emissions.

For the 2002 area sources, ACHD provided an inventory that contained estimations of emissions by multiplying an emission factor by some known indicator or activity level for each category at the county level. These estimates were apportioned to the Liberty-Clairton Area based on population counts.

The 2002 Nonroad Mobile Sources emissions inventory was prepared with EPA's NONROAD2005 model. This model estimates fuel consumption and emissions of total hydrocarbons, carbon monoxide, NOx, SO_2, and PM for all nonroad mobile source categories except aircraft, locomotives, and commercial marine vessels. The National Mobile Inventory

Model was used to estimate emissions of NH_3 from sources contained in the NONROAD model. The 2002 Onroad Mobile Sources emissions inventory was prepared using EPA's highway mobile source emissions model MOBILE 6.2.

Table 1 below shows the Liberty-Clairton Area emissions inventory summary for direct $PM_{2.5}$ and $PM_{2.5}$ precursors for the 2002 base year. These emissions represent emissions from sources only within the five-municipality Liberty-Clairton Area, not the larger modeled area.

Table 1. Baseline 2002 Emissions (Tons/Year)

Liberty-Clairton Area (2002)	**$PM_{2.5}$**	**SO_2**	**NO_x**	**VOC**	**NH_3**
Stationary Point Sources	2201.438	1358.522	5786.190	432.735	299.714
Area Sources	36.506	81.962	80.176	336.467	7.416
Nonroad Sources	23.005	16.170	227.673	119.244	0.078
Mobile Sources	4.918	12.077	283.422	200.841	13.867
Totals	2265.867	1468.731	6377.461	1089.287	321.075

Table 2 below shows the Liberty-Clairton Area emissions inventory summary for direct $PM_{2.5}$ and $PM_{2.5}$ precursors for the 2014 future projected year. Similar to the baseline inventory, these emissions represent sources only within the five municipality Liberty-Clairton Area.

Table 2. Future Projected 2014 Emissions (Tons/Year)

Liberty-Clairton Area (2014)	**$PM_{2.5}$**	**SO_2**	**NO_x**	**VOC**	**NH_3**
Stationary Point Sources	1328.785	1459.146	5282.002	581.492	255.456
Area Sources	35.464	86.464	86.239	307.013	8.176

Nonroad Sources	21.500	3.034	169.006	83.335	0.093
Mobile Sources	2.749	1.409	134.079	98.997	14.367
Totals	1388.498	1550.053	5671.326	1070.837	278.092

3. Control Strategy

To understand the $PM_{2.5}$ problem in the Liberty-Clairton Area, EPA believes it is helpful to explain the unique topographic and meteorologic conditions in the area, as well as the geographic location of this area. The approximately 12 square kilometer area is a subset of Allegheny County, and is surrounded by the Pittsburgh-Beaver Valley nonattainment area (Pittsburgh Area). The Liberty-Clairton Area was designated a separate nonattainment area from the surrounding Pittsburgh Area because, in addition to the regional air quality problem, there is a localized air quality issue caused by local sources and by specific geologic and meteorological features of the area. The $PM_{2.5}$ problem in the Liberty-Clairton Area is compounded by the sharp difference in elevation between the industrial and residential areas as well as large temperature differences between the river valleys and the adjacent hilltops. The high hillsides of the two rivers in the area create a significant river basin with spikes in localized $PM_{2.5}$ concentrations that coincide with temperature inversions. Two of the eight monitors in the combined areas are located within the Liberty-Clairton Area, one in Liberty Borough (Liberty monitor) and one in the city of Clairton (Clairton monitor). On many days the Liberty monitor has readings very similar to those located in the Pittsburgh Area. However, when the regional concentrations rise, the Liberty monitor rises higher than any other site in the region, and after an

inversion break, the monitor returns to a level comparable to, and sometimes less than, the concentrations measured at surrounding monitors in the Pittsburgh Area. The occurrence and severity of these high readings at the Liberty monitor, caused by local sources and features, required that a control strategy for the Liberty-Clairton Area be considered separate from, and in addition to, the control strategy for the larger Pittsburgh Area.

Direct PM from local sources are at the heart of the $PM_{2.5}$ problem in this area, and the control strategy for attainment within the nonattainment area is to reduce emissions of direct $PM_{2.5}$. Other than regional reductions of NOx and SO_2 within the surrounding Pittsburgh Area, no additional local reductions for these pollutants are necessary the Liberty-Clairton Area to attain the NAAQS by the attainment date. The monitored NOx and SO_2 within the Liberty-Clairton Area are representative of the monitored concentrations of these precursors in the larger Pittsburgh Area. The small geographic size of the Liberty-Clairton Area is such that there is insufficient residence time for a local conversion of NOx and SO_2 to nitrates and sulfates. This is indicated by a lack of sizable difference in the levels monitored at the Liberty monitor with the levels monitored at the Lawrenceville monitor located in Allegheny County, just north of Pittsburgh. Additionally, monitored data shows consistent trends at the Liberty monitor for sulfates and nitrates with those throughout the southwestern part of Pennsylvania, with no outlying concentrations of NOx and SO_2 at the Liberty monitor. For the above reasons, EPA has determined that it is not practical to rely on local NOx and SO_2 reductions for purposes of ensuring that the Liberty-Clairton Area will attain the $PM_{2.5}$ NAAQS by the attainment date. While NOx and SO_2 reductions from within the nonattainment area are not relied upon for the

Liberty-Clairton Area to attain the $PM_{2.5}$ standard, EPA recognizes that addressing the control strategy for NOx and SO_2 in the larger surrounding nonattainment area may result in collateral benefit in the Liberty-Clairton Area; EPA will address control strategies for NOx and SO_2 in the surrounding nonattainment area when EPA takes action on the Pittsburgh Area attainment demonstration SIP.

With respect to control strategies for direct $PM_{2.5}$, ACHD has already required implementation of stringent control measures for the largest sources of direct $PM_{2.5}$ in the Liberty-Clairton Area, so reducing direct $PM_{2.5}$ further is challenging. The majority of direct $PM_{2.5}$ emissions reductions that the ACHD projects are needed for $PM_{2.5}$ attainment in the Liberty-Clairton Area by 2015 will come from a combination of upgrades and shutdowns of batteries and quench towers at the U.S. Steel Mon Valley Works Clairton (U.S. Steel) and Edgar Thomson Plants in response to a number of previous visible emissions and opacity violations. In accordance with a March 2008 consent order and agreement between ACHD and U.S. Steel, several upgrades and shutdowns have taken place or are required to take place, including:

a. Batteries 7, 8, and 9 were permanently shut down on April 16, 2009. The original date for shut down was December 31, 2012 in the consent order and agreement. The new Battery C will replace the production of Batteries 7, 8, and 9 at significantly lower emissions due to newer and cleaner technology. This project reduces emissions of direct $PM_{2.5}$ by over 200 tons per year at a cost of $500 million.
b. 25 heating walls on Battery 19 will be replaced by October 31, 2012. The battery will meet its opacity limits by December 31, 2012, including, as necessary, implementing an advanced

patching plan.

In September 2010, ACHD and U. S. Steel amended the March 2008 consent order and agreement to include the construction of new low emission quench towers for Batteries 13-15 and Batteries 19-20 by December 31, 2013. The new quench towers 5A and 7A will be used as the primary quench towers for Batteries 13-15 and Batteries 19-20, respectively. The current quench towers 5 and 7 will serve as auxiliary quench towers. The new quench towers 5A and 7A will reduce emissions of direct $PM_{2.5}$ by 593 tons per year.

Additional reductions are achieved by a June 2007 ACHD and U.S. Steel consent decree to rebuild the B Battery heating walls, which was to be completed by June 30, 2010, and replacement of 25 heating walls on Battery 19 by October 2012 to meet opacity limits. Table 3 below summarizes the reductions that are relied on in the Liberty-Clairton Area $PM_{2.5}$ attainment plan to demonstrate attainment by April 5, 2015.

Table 3. Summary of Reductions Needed for the Liberty-Clairton Area $PM_{2.5}$ Attainment Demonstration (tons per year)

	Direct $PM_{2.5}$	NO_x	SO_2
A. 2002 emissions level	2,270.6	229,571.7	587,201.4
B. 2014 attainment target	1,392.6	108,565.5	132,598.7
C. Total reductions needed by 2014 (A minus B)	878.0	121,006.2	454,602.7

The majority of direct $PM_{2.5}$ emissions reductions that the State projects are needed for $PM_{2.5}$

attainment in the Liberty-Clairton Area by 2015 come from the combination of upgrades and shutdowns of batteries and quenches towers at the U.S. Steel Mon Valley Clairton Plant. ACHD included in this table the reductions of $PM_{2.5}$ precursor pollutants NO_x and SO_2 that are achieved by the regional programs that address transported emissions. The NOx and SO_2 projected reductions shown in this table come from the CAIR regional trading program, and are addressed in the regional modeling discussed below. The sources from which these NOx and SO_2 emission reductions are achieved are located upwind of the Liberty-Clairton Area in the Pittsburgh Area.

4. RACM/RACT

CAA section 172(c)(1) requires that each attainment plan "provide for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology), and shall provide for attainment of the national primary ambient air quality standards." EPA defines RACM as measures that a state finds are both reasonably available and contribute to attainment as expeditiously as practicable in its nonattainment area. Thus, what constitutes RACM/RACT in a $PM_{2.5}$ attainment plan is closely tied to that plan's expeditious attainment demonstration. See, 40 CFR 51.1010 and 72 FR 20586 at 20612. States are required to evaluate RACM/RACT for direct $PM_{2.5}$ and all of its attainment plan precursors. See, 40 CFR 51.1002(c).

Consistent with subpart 1 of Part D of the CAA, EPA is requiring a combined approach to RACM and RACT for $PM_{2.5}$ attainment plans. Subpart 1, unlike subparts 2 and 4, does not

identify specific source categories for which EPA must issue control technology documents or guidelines for what constitutes RACT, or identify specific source categories for state and EPA evaluation during attainment plan development. See, 72 FR 20586 at 20610. Rather, under subpart 1, EPA considers RACT to be part of an area's overall RACM obligation. Because of the variable nature of the $PM_{2.5}$ problem in different nonattainment areas, EPA determined not only that states should have flexibility with respect to RACT and RACM controls, but also that in areas needing significant emission reductions to attain the standards, RACT/RACM controls on smaller sources may be necessary to reach attainment as expeditiously as practicable. See, 72 FR 20586 at 20612, 20615. Thus, under the $PM_{2.5}$ Implementation Rule, RACT and RACM are those reasonably available measures that contribute to attainment as expeditiously as practicable in the specific nonattainment area. See, 40 CFR 51.1010 and 72 FR 20586 at 20612.

The $PM_{2.5}$ Implementation Rule requires that attainment plans include the list of measures a state considered and information sufficient to show that the state met all requirements for the determination of what constitutes RACM/RACT in its specific nonattainment area. See, 40 CFR 51.1010. In addition, the rule requires that the state, in determining whether a particular emissions reduction measure or set of measures must be adopted as RACM/RACT, consider the cumulative impact of implementing the available measures and to adopt as RACM/RACT any potential measures that are reasonably available considering technological and economic feasibility if, considered collectively, they would advance the attainment date by one year or more. Any measures that are necessary to meet these requirements which are not already either federally promulgated, part of the state's SIP, or otherwise creditable in SIPs must be submitted

in enforceable form as part of a state's attainment plan for the area. See, 72 FR 20586 at 20614.

ACHD undertook a process to identify and evaluate potential reasonably available control measures that could contribute to expeditious attainment of the $PM_{2.5}$ standard for the Liberty-Clairton Area. These RACM/RACT analyses address control measures for sources of direct $PM_{2.5}$ only. The control measures for sources of SO_2 or NOx were not addressed because, as explained earlier, the area is too small and conditions are not appropriate for SO_2 or NOx from sources located within the nonattainment area to be able to convert to $PM_{2.5}$. ACHD's RACM/RACT analysis focused on point, area and mobile source controls. To identify potential RACM/RACT in the 12 square kilometer nonattainment area, ACDH's review of potential measures from two major sources (U.S. Steel Clairton Plant and Koppers Industries, Inc. Clairton Plant), and one minor source (Mid Continent Coal and Coke Company) is summarized below.

For the U.S. Steel Clairton Plant, many alternatives were considered for the coke batteries and quench towers. For the Coke batteries, there were very few alternatives were available, since some of the nation's strictest standards are already in place for this facility. Of the alternatives considered, none were considered technically feasible for integration into the process. For the quench towers, among the many alternatives considered were short towers with single baffles, wet low emission quench, coke stabilization quenching process, and Kress indirect cooling system. However, they were all found to be unacceptable due to the cost effectiveness, potential magnitude and timing of emissions reductions and availability of space. For the Koppers

Industries Inc. Clairton Plant, alternatives were considered for the tar refining process and the manufacturing of the rod pitch. For both the tar refining process and manufacturing of the rod pitch, the alternatives considered resulted in no additional emissions reductions. For the Mid Continent Coal and Coke Company, the total $PM_{2.5}$ emissions are no more than five tons per year, mostly resulting from unpaved roads. The emission reductions benefit from the implementation of dust suppressants would produce only insignificant emission reductions and would not advance the attainment date by one year or more even if combined with other control measures. After completing its RACM/RACT analysis for stationary, area and mobile sources of direct $PM_{2.5}$, ACHD concluded that no additional reasonable controls are available that would advance the attainment date by one year.

Based on our review of potential RACM/RACT in the Liberty-Clairton Area $PM_{2.5}$ attainment plan, we agree that there are no additional reasonably available control measures that individually, or collectively, would advance attainment of the 1997 $PM_{2.5}$ NAAQS in the Liberty-Clairton nonattainment area by one year or more, and propose to approve the RACM/RACT determination submitted by PADEP.

5. Modeling

The $PM_{2.5}$ Implementation Rule requires states to submit an attainment demonstration based on modeling results. Specifically, 40 CFR 51.1007(a) states that for any area designated as nonattainment for the $PM_{2.5}$ NAAQS, the state must submit an attainment demonstration

showing that the area will attain the annual and 24-hour standards as expeditiously as practicable. The demonstration must meet the requirements of 40 CFR part 51 and appendix W of this part and must include inventory data, modeling results, and emission reduction analyses on which the state has based its projected attainment date. The attainment date justified by the demonstration must be consistent with the requirements of 40 CFR 51.1004(a). The modeled strategies must be consistent with requirements in 40 CFR 51.1009 for RFP and in 40 CFR 51.1010 for RACT and RACM. The attainment demonstration and supporting air quality modeling should be consistent with EPA's $PM_{2.5}$ modeling guidance.[2] See also, 72 FR 20586 at 20665.

Air quality modeling is used to establish emissions attainment targets, the combination of emissions of $PM_{2.5}$ and $PM_{2.5}$ precursors that the area can accommodate without exceeding the NAAQS and to assess whether the proposed control strategy will result in attainment of the NAAQS. Air quality modeling is performed for a base year and compared to air quality monitoring data in order to evaluate model performance. Once the performance is determined to be acceptable, future year changes to the emissions inventory are simulated to determine the relationship between emissions reductions and changes in ambient air quality throughout the air basin.

The procedures for modeling $PM_{2.5}$ as part of an attainment SIP are contained in EPA's

2 EPA's modeling guidance can be found in "Guideline on Air Quality Models" in 40 CFR part 51, appendix W and "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for the 8-Hour Ozone and $PM_{2.5}$ NAAQS and Regional Haze," EPA-454/B-07-002, April 2007.

"Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for the 8-Hour Ozone and $PM_{2.5}$ NAAQS and Regional Haze." This guidance encourages states to take a nine-step approach when preparing a modeling analysis to demonstrate attainment of the $PM_{2.5}$ NAAQS. The nine steps include formulation of a conceptual description of the nonattainment problem, development of a modeling protocol, use of an appropriate model using appropriate meteorological episodes and a modeling domain to establish initial and boundary conditions, generation of meteorological and air quality inputs, generation of emissions inputs, evaluation of the performance of the air quality model, and performance of future year modeling that includes control strategies, followed by application of the attainment test.

ACHD's conceptual description of its $PM_{2.5}$ nonattainment problem is provided in Appendix C (Modeling Protocol) of its attainment SIP. The unique meteorologic and geologic features of the area was also discussed briefly in section A.3 of this notice. Episodes of poor air quality often occur within the Liberty-Clairton Area during periods of strong nocturnal inversions. When this occurs, air dispersion is often minimized, allowing emissions to "build up" within the river valleys, and contributing to episodes of poor air quality that leads to high $PM_{2.5}$ design values. Many times, $PM_{2.5}$ concentrations in the Liberty-Clairton Area are significantly higher than concentrations in the nearby city of Pittsburgh. Using source apportionment modeling for the Liberty and Lawrenceville monitors in Allegheny County, ACHD's analysis found that the Liberty monitor's $PM_{2.5}$ concentrations are impacted by regional loading based on similarities in both monitor's speciation data and that sources near the Liberty monitor are responsible for the

speciation differences observed between the two monitors.

The Liberty-Clairton $PM_{2.5}$ SIP utilized two components in its attainment demonstration modeling: a regional photochemical grid model and a local scale model with sufficient resolution to examine the impacts of local emission sources. Model results were used in a relative rather than an absolute sense. Following this methodology, the ratio of the model's future to current (baseline) predictions at both of the nonattainment area's $PM_{2.5}$ monitors determines if the controls in the Liberty-Clairton Area are likely to lead to attainment with the 1997 $PM_{2.5}$ NAAQS.

The regional modeling demonstration for the Liberty-Clairton Area used the Community Multiscale Air Quality (CMAQ) model. The CMAQ modeling was performed by the Bureau of Air Quality Analysis and Research, New York State Department of Environmental Conservation (DEC) using Mid-Atlantic/Northeast Visibility Union Regional Planning Organization (MANE-VU) inventory with a base year of 2002. Regional controls for SO_2 and NOx in the MANE-VU inventory were based on the CAIR. Local sources in the Liberty-Clairton Area create steep gradients in $PM_{2.5}$ concentrations than cannot be adequately resolved by the CMAQ model, which uses grid cells that are roughly 12 square kilometers – approximately the total area of the Liberty-Clairton Area. Local scale meteorology is also not well simulated by the CMAQ model due to steep topography within the Liberty-Clairton Area that often contributes to strong temperature inversions and complex flow patterns within the valleys. ACHD's analysis of its $PM_{2.5}$ monitors within Allegheny County showed significant local impacts at the Liberty-Clairton

Area. To better simulate the local source impacts within the nonattainment area, ACHD used the California PUFF (CALPUFF) air quality dispersion modeling system.

The CALPUFF modeling system uses CALMET, a diagnostic 3-dimensional meteorological model, and CALPOST, a post processing program. The CALPUFF model, which uses a much finer scale than the regional model, was used to help better resolve local topographic features that influence emission dispersion and address spatial relationships between local sources and the monitors in the Liberty-Clairton Area. The CALPUFF grid spacing for the 150 km regional source analysis domain was one kilometer and 100 meters for the 20 kilometer local scale analysis domain. The CALMET processor was used recreate some of the more complex atmospheric flows in the Liberty-Clairton Area.

The MANE-VU regional analysis used northeastern United States emissions inventories for all source classifications. The year 2002 was used for the baseline emissions inventory and 2014 for the projected inventory for the Liberty-Clairton Area. Regional projections used on-the-books/on-the-way (OTB/OTW) controls through the 2012 timeframe. Since no additional projections were available at the time, and since Liberty-Clairton controls focus on direct $PM_{2.5}$ emissions, the inventory was limited to direct $PM_{2.5}$ emissions and was developed from both the regional MANE-VU projections for 2012 for precursors and non-point $PM_{2.5}$ emissions in combination with ACHD's local projections for 2014 for stationary point $PM_{2.5}$ emissions. A more detailed inventory, limited to $PM_{2.5}$, was developed by the ACHD for the extended Liberty-Clairton Area as part of its CALPUFF modeling analysis. This inventory was developed from both the MANE-VU inventories and

projections, which were based on CAIR, along with ADCH's inventories for stationary point sources.

The monitored attainment test for $PM_{2.5}$ utilizes both $PM_{2.5}$ and individual $PM_{2.5}$ component species. The attainment test for $PM_{2.5}$ is the Speciated Modeled Attainment Test (SMAT). In SMAT, a separate relative response factor (RRF) is calculated for each $PM_{2.5}$ component. These RRF values are then multiplied by the base year concentrations for each monitor within the nonattainment area to determine if an area is projected to attain the NAAQS.

The Liberty-Clairton Area has two $PM_{2.5}$ monitoring sites, the Liberty monitor and the Clairton monitor. Speciation data from the Liberty monitor was used for the Clairton monitor since this site does not collect speciation data. Annual and 24-hour $PM_{2.5}$ concentrations for both the Liberty and Clairton monitors were calculated from the quarterly base-year averaged monitor concentrations and the RRFs calculated from THE CMAQ MODEL and CALPUFF for each $PM_{2.5}$ component. Results for the annual and 24-hour $PM_{2.5}$ NAAQS are summarized in Table 4 which shows that the projected 2014 annual and 24-hour design values for the 1997 $PM_{2.5}$ NAAQS.

Table 4. Modeled $PM_{2.5}$ Design Values

Monitor	Annual Standard		24-Hour Standard	
	2014 Projected	**1997 NAAQS**	**2014 Projected**	**1997 NAAQS**
Liberty	14.3 $\mu g/m^3$	15.0 $\mu g/m^3$	42 $\mu g/m^3$	65 $\mu g/m^3$
Clairton	11.8 $\mu g/m^3$	15.0 $\mu g/m^3$	27 $\mu g/m^3$	65 $\mu g/m^3$

EPA's modeling guidance states that additional analyses are recommended to determine if attainment will be likely, even if the modeled attainment test is "passed." The guidance recommends supplementary analyses in all cases. EPA's modeling guidance describes how to use a photochemical grid model and additional analytical methods to complete a weight of evidence (WOE) analysis to estimate if emissions control strategies will lead to attainment. A WOE analysis is a supporting analysis that helps to determine if the results of the photochemical modeling system are, or are not, correctly predicting future air quality.

All models, including the CMAQ model, have inherent uncertainties. Over or under prediction may result from uncertainties associated with emission inventories, meteorological data, and representation of $PM_{2.5}$ chemistry in the model. Therefore, EPA modeling guidance provides for the consideration of other evidence to address these model uncertainties so that proper assessment of the probability to attain the applicable standards can be made. EPA modeling guidance states that those modeling analyses that show that attainment with the NAAQS will be reached in the future with some margin of safety (i.e., estimated concentrations below 14.5 $\mu g/m^3$ for annual $PM_{2.5}$ and 62 $\mu g/m^3$ for 24-hour $PM_{2.5}$) need more limited supporting material.

Due to the fact that the modeling results presented in Table 4 fall below the aforementioned "weight of evidence" thresholds established by EPA, a limited supplemental analysis was deemed necessary to support the 2014 attainment demonstration. ACHD provided a WOE demonstration that consisted of an analysis of monitor trends, local and national emission control programs, population trends and monitoring concentrations during periods of low production.

ACHD included a summary of various local and regional emission control programs being implemented in the Area, although some of these control measures may extend beyond the Liberty-Clairton Area and therefore, may have a lesser impact. Emission control programs used for WOE include Pennsylvania's wood boiler regulation, a wood stove change out program in southwest Pennsylvania, EPA's CSAPR as it was proposed, Allegheny County's diesel fuel engine retrofit program, local and state anti-idling campaigns and Allegheny County's program to reduce diesel particulate emissions. The additional reductions from these programs were used as further evidence supporting ACHD's conclusion that its SIP modeling demonstrates compliance with the 1997 $PM_{2.5}$ NAAQS.

Based on the technical information provided in the Liberty-Clairton Area attainment demonstration SIP revision, EPA concludes that the modeling and WOE analyses demonstrate attainment of the 1997 $PM_{2.5}$ NAAQS by the attainment date proposed as part of this notice (April 5, 2015). The demonstration shows that the Liberty-Clairton Area will attain the 1997 annual $PM_{2.5}$ NAAQS by 2015, which is as expeditiously as practical considering the area's elevated 2002 base year design values of 21.4 $\mu g/m^3$ for the annual NAAQS and 63 $\mu g/m^3$ for the 24-hour NAAQs at the Liberty monitor and the reasonably available control measures discussed above. ACHD's modeled 2014 design values for the Annual $PM_{2.5}$ NAAQS and the 24-Hour $PM_{2.5}$ NAAQS are expected to be below 15.0 $\mu g/m^3$ and 65 $\mu g/m^3$, respectively, indicating the nonattainment area satisfies the CAA requirement that SIPs provide for attainment of the NAAQS by the applicable attainment date.

However, because the regional CMAQ modeling relied upon EPA's CAIR program, EPA is requiring ACHD to provide an additional analysis to confirm model results, in light of EPA's promulgation of CSAPR on August 8, 2011 (76 FR 48208), to replace the remanded CAIR rule. While ACHD's SIP submittal predated EPA's promulgation of CSAPR, to ensure that the modeling demonstration is still valid, ACHD must update the analysis it included in section 13.3 of its attainment plan to include CSAPR instead of CAIR, and review and update, if appropriate, its modeling technical support document (TSD). To ensure that the analysis in the June 17, 2011 submittal is valid during the implementation of CSAPR, the results, with CSAPR, must show at least the same concentrations that resulted from the modeling demonstration with CAIR. EPA is, therefore, conditionally approving the modeling portion of the Liberty-Clairton Area attainment demonstration SIP. Final approval of the modeling demonstration portion of the SIP is contingent on ACHD's reanalysis of the elements included in section 13.3 of its attainment demonstration and the associated TSD to show that implementation of CSAPR provides at least equivalent model concentrations in the Liberty-Clairton Area as was shown in its June 17, 2011 submittal.

More detailed information about the modeling and our evaluation are available in the modeling TSD available in the docket for this rulemaking.

6. Determination of the Attainment Date

CAA Section 172(a)(2) provides that an area's attainment date "shall be the date by which attainment can be achieved as expeditiously as practicable, but no later than five years from the

date such area was designated nonattainment, except that the Administrator may extend the attainment date to the extent the Administrator determines appropriate, for a period no greater than 10 years from the date of designation as nonattainment considering the severity of nonattainment and the availability and feasibility of pollution control measures." Because the effective date of designations for the 1997 $PM_{2.5}$ NAAQS is April 5, 2005 (See 70 FR 944), the initial attainment date for $PM_{2.5}$ nonattainment areas is as expeditiously as practicable, but not later than April 5, 2010. For any area that is granted a full five-year attainment date extension under CAA section 172, the attainment date would be not later than April 5, 2015. Section 51.1004 of the $PM_{2.5}$ Implementation Rule addresses the attainment date requirement. Section 51.1004(b) requires a state to submit an attainment demonstration justifying its proposed attainment date and provides that EPA will approve an attainment date when we approve that demonstration.

States that request an extension of the attainment date under CAA section 172(a)(2) must provide sufficient information to show that attainment by April 5, 2010 is impracticable due to the severity of the nonattainment problem in the area and the lack of available and feasible control measures to provide for earlier attainment. See, 40 CFR 51.1004(b). States must also demonstrate that all RACM and RACT for the area are being implemented to bring about attainment of the standard by the most expeditious alternative date practicable for the area. See, 72 FR 20586 at 20601.

In the course of evaluating whether the attainment date for the Liberty-Clairton Area should be extended, EPA has considered several factors. First, EPA has considered the technical basis supporting the attainment demonstration, including whether the emissions inventories and air quality modeling, are adequate. As discussed previously, EPA is proposing to approve the emissions inventories and conditionally approve the air quality modeling on which the Liberty-Clairton 1997 $PM_{2.5}$ attainment demonstration and other provisions are based. Second, EPA has considered whether the SIP submittal provides for expeditious attainment through the implementation of all RACM and RACT. As discussed in section A.4, EPA is proposing to approve the RACM/RACT demonstration in the Liberty-Clairton $PM_{2.5}$ attainment demonstration . Third, EPA has considered whether the emissions reductions that are relied on for attainment are creditable. As discussed in section A.3, the Liberty-Clairton Area attainment demonstration relies on upgrades and shutdowns at the U.S. Steel Plant for reductions of $PM_{2.5}$, and regional reduction programs to achieve NOx and SO_2 reductions, that are needed to attain the 1997 $PM_{2.5}$ standards in the Liberty-Clairton Area by April 5, 2015. Finally, EPA must determine whether the attainment demonstration provides sufficient information to show that attainment by April 5, 2010 is impracticable due to the severity of the nonattainment problem in the area and the lack of available and feasible control measures to provide for earlier attainment. See, 40 CFR 51.1004(b).

The Liberty-Clairton Area SIP submittal provides sufficient information to show that attainment by April 5, 2010 is impracticable due to the severity of the nonattainment problem in the area and the lack of available and feasible control measures to provide for earlier attainment. In

particular, this submission includes sufficient modeling data to support a finding that the attainment date for the Liberty-Clairton Area should be April 5, 2015, and that the area qualifies for the full five-year extension of the attainment date allowable under section 172(a)(1). Furthermore, the SIP submittal provides for expeditious implementation of the available control programs. The implementation schedule for the controls is expeditious, while taking into account the time necessary for purchase and installation of the required control technologies.

Based upon the above considerations, EPA is proposing to determine that a five-year extension of the attainment date is appropriate given the severity of the nonattainment problem in the Liberty-Clairton Area, and the unavailability and infeasibility of additional control measures and, therefore, EPA is proposing to extend the attainment date in the Liberty-Clairton Area to April 5, 2015.

7. RFP

CAA section 172(c)(2) requires that plans for nonattainment areas shall provide for RFP. RFP is defined in section 171(1) as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable [NAAQS] by the applicable date." For any area for which a state requests an extension of the attainment date beyond 2010, the $PM_{2.5}$ Implementation Rule requires submittal of an RFP plan at the same time as the submittal of the attainment demonstration. For areas for which the state requests a date extension to 2015, such

as the Liberty-Clairton Area, the RFP plan must demonstrate that, in the applicable milestone years of 2009 and 2012, emissions in the area will be at a level consistent with generally linear progress in reducing emissions between the base year and the attainment year. See, 40 CFR 51.1009(d). States may demonstrate this by showing that emissions for each milestone year are roughly equivalent to benchmark emissions levels for direct $PM_{2.5}$ and each $PM_{2.5}$ attainment plan precursor addressed in the plan. The steps for determining the benchmark emissions levels to demonstrate generally linear progress are provided in 40 CFR 51.1009(f). Establishment of RFP milestones involves a determination of the total reductions that are needed for attainment, determination of the attainment year that is as expeditious as practicable, and the fraction of reductions that are achieved in each milestone year. The RFP plan must describe the control measures that provide for meeting the RFP milestones for the area, the timing of implementation of those measures, and the expected reductions in emissions of direct $PM_{2.5}$ and $PM_{2.5}$ attainment plan precursors. See, 40 CFR 51.1009(c).

For Liberty-Clairton, as discussed in section A.3, the total reductions needed, 878 tons of $PM_{2.5}$, have been identified in the modeling, and 2015 is the attainment date that is as expeditious as practicable. Benchmark levels are therefore required for milestone years 2009, 2012, and 2014. Table 5 below summarizes the benchmark emission reductions for each milestone year. Controlled emissions levels for direct $PM_{2.5}$, NO_x, and SO_2 were below the benchmarks for 2009, demonstrating that the Liberty-Clairton Area have met its RFP targets for that year. For 2012, the projected controlled emissions levels for direct $PM_{2.5}$ are only slightly above the benchmark (by about 16 percent) and the projected controlled levels for NO_x and SO_x are substantially

below the benchmarks. For direct $PM_{2.5}$, these emissions include three additional minor sources that were not included in the modeling inventory shown in Table 1.

Table 5. Summary of RFP Needed for the Liberty-Clairton $PM_{2.5}$ Attainment Demonstration

Pollutant	Milestone Year	Benchmark Emissions (tons/year)	Cumulative Emission Reductions (tons/year)	Percent of Emission Reductions Needed for Attainment
$PM_{2.5}$	2002	2270.6		
	2009	1968.8	301.8	34
	2012	1849.9	420.7	48
	2014	1392.6	878.0	100
NOx	2002	229,571.7		
	2009	120,414.1	109,157.6	90
	2012	108,565.5	121,006.2	100
	2014	108,565.5	121,006.2	100
SO_2	2002	587,201.4		
	2009	141,772.8	445,428.6	98
	2012	132,598.7	454,602.7	100
	2014	132,598.7	454,602.7	100

As explained in section III.A.3 of this proposed rulemaking action, the control strategy for attainment in the Liberty-Clairton Area is to reduce emissions of direct $PM_{2.5}$. Other than regional reductions of NOx and SO_2 within the surrounding Pittsburgh Area, no additional local reductions for these pollutants are necessary to attain by the attainment date. As such, in accordance with the $PM_{2.5}$ Implementation Rule, the pollutants to be addressed in the RFP plan are those pollutants that are subject to control measures in the attainment plan. Nevertheless, ACHD submitted milestone years and benchmark levels for NOx and SO_2 from within the larger Pittsburgh Area that show generally linear progress for RFP in that area.

EPA has reviewed the RFP demonstration for $PM_{2.5}$ and has determined that it was prepared consistently with the applicable EPA regulations and policies. As can be seen from Table 5, EPA finds that, overall, the projected controlled emissions levels represent generally linear progress from the baseline year to the attainment year, and propose to find that the Liberty-Clairton $PM_{2.5}$ attainment demonstration SIP provides for reasonable further progress as required by CAA section 172(c)(2) and 40 CFR 51.1009.

8. Contingency Measures

Under CAA section 172(c)(9), all $PM_{2.5}$ attainment plans must include: a) contingency measures to be implemented if an area fails to meet RFP (RFP contingency measures); and b) contingency measures to be implemented if an area fails to attain the $PM_{2.5}$ NAAQS by the applicable attainment date (attainment contingency measures). These contingency measures must be fully adopted rules or control measures that are ready to be implemented relatively quickly without significant additional action by the state. See, 40 CFR 51.1012. They must also be measures not relied on in the plan to demonstrate RFP or attainment and should provide SIP-creditable emissions reductions equivalent to approximately one year of the emissions reductions needed for RFP. See, 72 FR 20586 at 20642-43. Finally, the SIP should contain trigger mechanisms for the contingency measures and specify a schedule for their implementation.

Contingency measures may include federal, state and local measures already adopted and implemented or scheduled for implementation that provide emissions reductions in excess of the

reductions needed to provide for RFP or expeditious attainment. EPA has approved numerous SIPs under this interpretation. See, direct final rule approving Indiana ozone SIP revision (62 FR 15844, April 3, 1997); final rule approving Illinois ozone SIP revision (62 FR 66279, December 18, 1997); direct final rule approving Rhode Island ozone SIP revision (66 FR 30811, June 8, 2001); final rule approving District of Columbia, Maryland, and Virginia ozone SIP revisions (66 FR 586, January 3, 2001); and final rule approving Connecticut ozone SIP revision (66 FR 634, January 3, 2001). The state may use the same measures for both RFP and attainment contingency, if the measures will provide reductions in the relevant years. However, should measures be triggered for failure to make RFP, the state would need to submit replacement contingency measures for attainment purposes.

The contingency measures in the Liberty-Clairton attainment demonstration for the 1997 $PM_{2.5}$ NAAQS meet the above requirements. These measures include emission reduction measures specified in the consent order and agreement between the ACHD and U.S. Steel and are listed in Table 6. In order to determine the reductions equivalent to one year's worth of RFP, ACHD started with the 2002 baseline emissions for the Liberty-Clairton Area (2270.6 tons/year), and subtracted the projected 2014 $PM_{2.5}$ emissions for the Area (1,392.6 tons/year), as taken from Table 5. The result (878 tons/year) is then divided by the number of years it takes to reach attainment. In this case, it is predicted that it will take 12 years for the area to achieve attainment, however, ACHD used 10 years in its calculation of RFP, which is acceptable, and calculated the targeted reductions for the contingency measures to be 87.8 tons per year of $PM_{2.5}$. Within 30 months of receiving notice that the area failed to meet RFP or attainment, U.S. Steel

will implement one or more of the measures listed in Table 6. The measure chosen will depend on the amount needed to achieve RFP or attainment for the area. Because of the complexity of the measures, 30 months to implement one or all or these measures is reasonable, and is the time frame specified in the consent order and agreement.

Table 6. Contingency Measures and Related Emissions Reductions

Process	**$PM_{2.5}$ 2014 Inventory Value (tons/year)**	**$PM_{2.5}$ Contingency Value (tons/year)**	**$PM_{2.5}$ Reduction (Inventory – Contingency) Value (tons/year)**
New Low Emissions Tower for Batteries 1-3	274.8	102.5	172.3
Battery 20 – Rebuilds, Combustion Stack	17.5	9.4	8.1
Battery 20 – Rebuilds, Door Leaks	2.4	1.3	1.1
Total	294.7	113.2	181.5

Areas with an attainment date of April 2015 are required to provide contingency measures for 2009, 2012, and 2015. Due to the shutdown of Batteries 7-9 at the U.S. Steel Clairton Plant in April 2009, reductions required for RFP in 2009 have already been achieved. This shutdown provides for excess reductions above and beyond reductions that would otherwise be required during 2009, and the excess reductions are sufficient to provide for RFP for 2012 and 2015.

The plan does not calculate the emissions reductions that are equivalent to one year's worth of RFP for NO_x and SO_2 in the Liberty-Clairton Area. As explained in section A.3, due to the uniqueness of this nonattainment area and the primary emission sources contributing to nonattainment of the standard, there is substantial information supporting a finding that

controlling direct $PM_{2.5}$ emissions in the Liberty-Clairton Area will provide for attainment of the standard as expeditiously as practicable, and local reductions of NOx or SO_2 will not significantly contribute to attainment of the standard. As also explained in section A.3, it is more appropriate to ensure that a control strategy for these pollutants be implemented regionally in the larger Pittsburgh Area.

B. MVEBs for Transportation Conformity

CAA section 176(c) requires federal actions in nonattainment and maintenance areas to conform to the goals of SIPs. This means that such actions will not: 1) cause or contribute to violations of a NAAQS; 2) worsen the severity of an existing violation; or 3) delay timely attainment of any NAAQS or any interim milestone. Actions involving Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) funding, or approval, are subject to the EPA's transportation conformity rule, codified at 40 CFR part 93, subpart A. Under this rule, Metropolitan Planning Organizations (MPOs) in nonattainment and maintenance areas coordinate with state and local air quality and transportation agencies, EPA, FHWA, and FTA to demonstrate that an area's regional transportation plans (RTPs) and transportation improvement programs (TIPs) conform to the applicable SIPs. This is typically determined by showing that estimated emissions from existing and planned highway and transit systems are less than or equal to the motor vehicle emissions budgets (MVEBs or budgets) contained in the SIP.

An MPO must use budgets in a submitted but not yet approved SIP, after EPA has determined that the budgets are adequate. Budgets in submitted SIPs may not be used before they are found

adequate or are approved. In order for us to find a budget adequate, the submittal must meet the conformity adequacy requirements of 40 CFR 93.118(e)(4) and (5). Additionally, motor vehicle emissions budgets cannot be approved until EPA completes a detailed review of the entire SIP and determines that the SIP and the budgets will achieve their intended purpose (i.e., RFP, attainment or maintenance). The budget must also reflect all of the motor vehicle control measures contained in the attainment and RFP demonstrations. See, 40 CFR 93.118(e)(4)(v).

Direct $PM_{2.5}$ SIP MVEBs should include $PM_{2.5}$ motor vehicle emissions from tailpipes, brake wear, and tire wear. States must also consider whether re-entrained paved and unpaved road dust or highway and transit construction dust are significant contributors and should be included in the direct $PM_{2.5}$ budget. See, 40 CFR 93.102(b) and 93.122(f) and the conformity rule preamble at 69 FR 40004, 40031–40036 (July 1, 2004). The applicability of emission trading between conformity budgets for conformity purposes is described in 40 CFR 93.124(c).

The SIP submittal includes MVEBs for direct $PM_{2.5}$ and NOx for 2009, 2011, and 2012. The direct PM budgets did not include road dust emissions from paved and unpaved roads, or construction related fugitive dust emissions, due to the extremely small area that the Liberty-Clairton Area encompasses. The daily and annual MVEBs for the Liberty-Clairton Area are shown in Table 7 and Table 8, respectively.

Table 7. The MVEBs for the Liberty-Clairton Area for the 1997 $PM_{2.5}$ 24-Hour NAAQS Attainment Demonstration

Plan Submittal	Year	MVEBs for Direct PM	MVEBs for NOx

Attainment Plan Demonstration – Daily Standards (Tons/Day)	2009	0.0004	0.180
Attainment Plan Demonstration – Daily Standards (Tons/Day)	2011	0.0004	0.146
Attainment Plan Demonstration – Daily Standards (Tons/Day)	2012	0.0004	0.129

Table 8. The MVEBs of the Liberty-Clairton Area for the 1997 $PM_{2.5}$ Annual NAAQS Attainment Demonstration

Plan Submittal	Year	MVEBs for Direct PM	MVEBs for NOx
Attainment Plan Demonstration – Annual Standards (Tons/Year)	2009	1.5	72.7
Attainment Plan Demonstration – Annual Standards (Tons/Year)	2011	1.4	58.9
Attainment Plan Demonstration – Annual Standards (Tons/Year)	2012	1.3	52.4

EPA has evaluated the adequacy of the MVEBs in the attainment demonstration for the Liberty-Clairton Area, using the evaluation criteria detailed in the Transportation Conformity Rule as part of our review of the budgets' approvability. The details of this review may be found in Section II of the MVEBs TSD, available in the Docket for this rulemaking. The MVEBs for the Liberty-Clairton Area $PM_{2.5}$ attainment plan are being posted to EPA's conformity website concurrently with this proposed action. The public comment period will end at the same time as the public comment period for this proposed action. In this case, EPA is concurrently processing the action on the attainment plan and the adequacy process for the MVEBs contained therein. In this action, EPA is proposing to find the MVEBs adequate, and also proposing to approve the MVEBs as part of the attainment plan. The MVEBs cannot be used for transportation conformity until the attainment plan and associated MVEBs are approved in a final Federal Register notice, or EPA otherwise finds the budgets adequate in a separate action following the

comment period. Our action on the Liberty-Clairton Area MVEBs will also be announced on EPA's conformity website: http://www.epa.gov/otaq/stateresources/transconf/index.htm, (once there, click on "Adequacy Review of SIP Submissions").

IV. Proposed Actions

EPA is proposing to approve, with one condition, Pennsylvania's June 17, 2011 SIP revision submitted to EPA for the purpose of demonstrating attainment of the 1997 $PM_{2.5}$ NAAQS for the Liberty-Clairton Area. EPA proposes to determine that the attainment date for the 1997 $PM_{2.5}$ NAAQS in the Liberty-Clairton Area is April 5, 2015, and proposes to fully approve the attainment demonstration for the Liberty-Clairton Area that includes the base year and projected year emissions inventories, RFP plan, RACM/RACT analysis, contingency measures, and the MVEB. EPA is proposing to conditionally approve the air quality modeling submitted to demonstrate attainment of the 1997 $PM_{2.5}$ NAAQS. In order for EPA to fully approve the modeling analysis, ACHD must revise the modeling to ensure that the modeling results in the demonstration continue to be valid, considering the reductions from CSAPR that will replace CAIR in 2012, and PADEP must submit the revised modeling as a SIP revision to EPA within one year from the final conditional approval, after which EPA will conduct rulemaking to fully approve the revision. EPA is also proposing to approve the addition of the definition of $PM_{2.5}$, the 1997 annual $PM_{2.5}$ standard of 15 μg/m3, the 24-hour standard of 35 $\mu g/m^3$, and the related references into the ACHD regulations. EPA is soliciting public comments on the issues discussed in this document. These comments will be considered before taking final action.

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the CAA 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 CAA. Accordingly, this action merely proposes to approve 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 (Public Law 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 CAA; 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 proposed approval of the Liberty-Clairton 1997 $PM_{2.5}$ attainment demonstration SIP and proposed conditional approval of the modeling portion of the attainment demonstration 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, Nitrogen dioxide, Particulate matter, Sulfur oxides, Volatile organic compounds.

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

October 31, 2011
Dated:

W. C. Early, Acting
Regional Administrator,
Region III.

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