

VIA EMAIL

June 6, 2017

Allegheny County Health Department
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Comments Regarding the *May 1, 2017 Proposed Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan Attainment Demonstration for the Allegheny, PA SO₂ Nonattainment Area 2010 Standards (May 1, 2017 Draft SIP)*

Dear Sir or Madam:

Please accept these comments regarding the *May 1, 2017 Proposed Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan Attainment Demonstration for the Allegheny, PA SO₂ Nonattainment Area 2010 Standards* on behalf of these groups: Air Quality Collaborative, Allegheny County Clean Air Now, Clean Water Action, Environmental Integrity Project, Group Against Smog and Pollution, Penn Environment, PennFuture, and Sierra Club. According to the notice posted on its website, the Allegheny County Health Department is accepting comments on the May 1, 2017 Draft SO₂ SIP through June 6, 2017. Thank you for providing this opportunity for us to comment.

Sincerely,
Sue Seppi

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Comments for the May 1, 2017 Draft Proposed Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan Attainment Demonstration for the Allegheny, PA SO₂ Nonattainment Area 2010 Standards
(referred to in the following comments as the SO₂ SIP)

1. The SO₂ SIP Does Not Contain Required Elements

a. The SO₂ SIP Does Not Include Federally Enforceable Limitations.

A State Implementation Plan (SIP) must identify the limitations that will be required in order to attain and maintain the National Ambient Air Quality Standards (NAAQS). Further, those limitations must be adopted as rules or regulations of the local air agency or incorporated into federally enforceable Title V Operating Permits.¹

The SO₂ SIP identifies a control strategy that purportedly will result in attainment of the 2010 one-hour SO₂ NAAQS but does not translate that strategy into rules, regulations, or permit conditions. “Submittal of a plan setting forth proposed rules and regulations² will not satisfy the requirements of this section nor will it be considered a timely submittal.”³

1. 42 USC § 7502 (c)(6)

2. *Proposed Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan Attainment Demonstration for the Allegheny, PA SO₂ Nonattainment Area 2010 Standards May 1, 2017*, “An upgrade is planned for the 600 VCU that will add redundant controls for the downriver COG line. USS (United States Steel Corporation) must also provide source monitoring results to demonstrate continuous efficient operation of the VCU system.” p. 8

3. 40 CFR § 51.281 “Emission limitations and other measures necessary for attainment and maintenance of any national standard, including any measures necessary to implement the requirements of subpart L must be adopted as rules and regulations enforceable by the State agency. Copies of all such rules and regulations must be submitted with the plan. Submittal of a plan setting forth proposed rules and regulations will not satisfy the requirements of this section nor will it be considered a timely submittal.”

b. Work Practice Standards And Record Keeping/Reporting Requirements Are Lacking Or Not Sufficient To Ensure SO₂ SIP Emission Level.

It is reassuring to note the following statement in the SO₂ SIP: “USS (United States Steel Corporation) must also provide source monitoring results to demonstrate continuous efficient operation of the VCU (Vacuum Carbonate Unit) system.” But there is no explanation of the work practice standards that will assure “continuous efficient operation of the 100 VCU” as is required.¹ The VCU system is the heart of the control strategy. Detailed information on the work practices and reporting requirements that will ensure emission levels should be included in the SO₂ SIP.

1. 40 CFR> Chapter I> Subchapter C> Part 51 >Subpart BB >Appendix V> 2.2(g) “Evidence that the plan contains emission limitations, work practice standards and recordkeeping/reporting requirements, where necessary, to ensure emission levels.”

2. SO₂ SIP Control Strategy Equipment Completion Date

Dates Of Completion For Some Elements Of The SO₂ SIP Are Not Timely. Control Sources Should Have Earlier And Specific Required Completion And Operational Dates.

The SO₂ SIP does not follow the recommendations in the SO₂ SIP Guidance which states: "...the EPA would expect states to require sources to begin complying with the attainment strategy in the SIP no later than January 1, 2017. By this means, the plans would be able to provide at least 1 calendar year of air quality monitoring data (and at least 1 calendar year of compliance information which, when modeled, would show attainment) before the applicable attainment deadline, indicating that the plan is in fact providing for attainment."¹ Major parts of the SO₂ SIP including the upgrade completion of the Vacuum Carbonate Unit (VCU) project and full operation of both the 100 and 600 upgraded units, tail gas recycling at the SCOT plant, and installation and operation of the combined stack for the three Riley Boilers are only required to be completed on the October 4, 2018 attainment date.

The SO₂ SIP Plan will not meet the "one calendar year of (emission sources) compliance information for modeling purposes" starting in January of 2017 since it is already June of 2017. The combined stack of the Riley Boilers certainly is not operating and therefore cannot provide one calendar year of compliance information for modeling.

All control sources should have had a completion and operational date allowing one calendar year of operation to demonstrate compliance before the attainment date of October 4, 2018.

1. Stephen D. Page, Director, United States EPA, Office of Air Quality Planning and Standards, *Guidance for 1 hour SO₂ Nonattainment Area SIP Submissions*, pp. 10, 11

3. Modeling

a. The SO₂ SIP Should Include A Nonattainment Area Informative Isopleth Map Or A Substantially Equivalent Tabular Form Of Area Design Values And It Should Be In The Main Document.

The SO₂ SIP should have a nonattainment area (NAA) informative isopleth map or a substantially equivalent tabular form that would report to the 22 communities in the NAA what maximum pollutant design levels to expect from the overall control strategy in the SO₂ SIP. To be helpful to the communities, it should be in the main document as it would be unrealistic to search through multiple appendices for this information.

The control case modeling produces design values in each grid section of the model throughout the nonattainment area. "A presentation of the air quality maximum levels expected to result from implementation of the overall control strategy presented either in tabular form or as an isopleth map showing expected maximum pollutant concentrations"¹ is a plan requirement.

The term "either" in the proceeding requirement suggests that an isopleth map and a tabular form are equivalent. Note also the plural in the words "levels" and "concentrations."² In the SO₂ SIP, there is only a one line tabular form listing the maximum design value concentration and location. This is substantially less informative than an isopleth map indicating NAA concentrations and is not equivalent.

1. 40 CFR §51.112 (b)(3)

2. Id.

b. Modeling of Appropriate Stacks or Sources At Less Than Design Capacity To Determine Possible Highest Design Values Is Not Discussed In The SO₂ SIP.

The SO₂ SIP notes "The highest modeled impact for the base case scenario was located in North Braddock, while the maximum control case location was in West Mifflin.

Since both the base and control cases were modeled at maximum possible emission rates for all sources in the NAA, these locations may or may not correspond to highest impacts during normal or low operations.”¹ This comment in the SO₂ SIP leaves unclear whether normal or low operations might produce a different NAA maximum design value.

The Guideline on Air Quality Models recommends “For point source applications the load or operating condition that causes maximum ground-level concentrations should be established... ..Where the source operates at substantially less than design capacity, and the changes in the stack parameters associated with the operating conditions could lead to higher ground level concentrations, loads such as 50 percent and 75 percent of capacity should also be modeled.”²

The Projected Combined Riley Boiler Stack, as an example, will not always operate at a continuous 100% maximum load.³ Reduced-load modeling where appropriate should be done and reported in the SO₂ SIP.⁴

1. *Proposed Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan Attainment Demonstration for the Allegheny, PA SO₂ Nonattainment Area 2010 Standards May 1*, p. 22

2. *Guideline on Air Quality Models* 40 CFR, chapter 1 Subchapter C Part 51 Subpart BB Appendix W to Part 51, *Section 8.1.2*

3. phone conversation with ACHD Air Program staff, 5/25/2017

4. 40 CFR chapter 1 Subchapter C part 51 (112) (a)(1)

“The adequacy of a control strategy shall be demonstrated by means of applicable air quality models, data bases, and other requirements specified in appendix W of this part (Guideline on Air Quality Models.”

4. A Study Should Be Done To Determine If High Design Value Areas Need Additional Monitoring

The modeling done for attainment in the March 2, 2017 SO₂ SIP and the May 1, 2017 SO₂ SIP in the nonattainment area did not show the Liberty Monitor area as having the highest SO₂ design values (*the 99th percentile of 1-hour daily maximum concentrations averaged over 3 years. This value determines attainment of a standard*). However, the Liberty monitor is the monitor that indicated nonattainment requiring development of the present SO₂ SIP.

The modeling showed West Mifflin, North Braddock, Grandview Golf Course, and Lincoln to be among the highest design values. North Braddock has a monitor but it could prove helpful to better characterize all these sites to see if a monitor should be added or moved to better represent the impact of a source or sources and protect public health.^{1, 2}

The Liberty monitor is significantly impacted from industrial emissions and categorized as a neighborhood monitor. It should be maintained.

1. 40 CFR Appendix D part 58, 1.1 (b)

2. 40 CFR Appendix D part 58, 1.1.1 and (a) and (c)

5. Base Case Maximum SO₂ Emission Rates In NAA Are Not Equivalent In The Previous March 2, 2017 SO₂ SIP And The Revised May 1, 2017 SIP. They Should Be The Same.

The value for the *Base Case Maximum SO₂ Emission Rate* given in the March 2, 2017 SO₂ SIP (Table 3.2) was 3,261 lb/hr or 14,284 ton/yr, while the same *Maximum SO₂ Emission Rate* in the May 1, 2017 SIP (Table 3.4) is 3,292 lb/hr or 14,420 ton/yr. The *Base Case Maximum SO₂ Emissions* are derived from the 2011 inventory. These *Base Case Maximum Emissions* should be the same. The error seems to be in the May 1, 2017 SIP. This error should be corrected.

6. Identification Of All Regulated Pollutants Identified By The Plan

The SO₂ SIP Plan identifies a reduced sulfur limit for coke oven gas in the yet to be constructed Edgar Thomson Riley Boilers replacement stack. It does not however indicate how often in practice coke oven gas will be burned as other fuels such as natural gas or blast furnace gas can also be used. How the more stringent sulfur dioxide ambient limit might influence the blending or usage of the allowable fuels (blast furnace gas, coke oven gas, natural gas) is unclear here and at other sources. It could result in increases or decreases of other pollutant types such as nitrogen oxides or particulates. Other pollutants affected by the SO₂ SIP should be identified.¹

1. 40 CFR Appendix V to Part 51 2.2

The following shall be included in plan submissions for review by EPA:

(a) Identification of all regulated pollutants affected by the plan

7. Averaging

The SO₂ SIP Should Not Use Averaging To Demonstrate Compliance.

The SO₂ SIP proposes averaging with SO₂ values calculated on an hourly basis, averaged over a block 24-hour basis (calendar day) and then averaged over a rolling 30-day basis. The SIP limits will be based on the 30-day averages, with an additional restriction of no more than three consecutive days above the supplementary 24-hour limits.¹

Guidance for 1 hour SO₂ Nonattainment Area SIP, Submissions notes “In brief, while a longer term average limit as contemplated here would allow occasions when emissions exceed the critical emission value, the use of a lower limit compensates by requiring most values to be lower than they are required to be with a 1-hour limit at the critical emission value.”²

Problems With The Proposed Averaging Plan

1. Allowable emission excursions exceeding the SIP critical emission value (CEV) (non-averaged limit) mentioned above may not be so benign as Guidance again suggests here: “EPA's general expectation that, if periods of hourly emissions above the critical emission value are a rare occurrence at a source, particularly if the magnitude of the emissions is not substantially higher than the critical emissions value, these periods would be unlikely to have a significant impact on air quality, insofar as they would be very unlikely to occur repeatedly at the times when the meteorology is conducive for high ambient concentrations of SO₂.”³

Temperature inversions, however, that leverage pollutant levels are very common in Allegheny County. A recent analysis of air inversions in the County was done by the ACHD Air Program staff with data taken from the National Weather Service near Pittsburgh International Airport where soundings were taken each morning and evening at 7:00 a.m. and 7:00 p.m. The analysis “shows that weak or greater surface inversions were observed nearly 45% of mornings from July 29, 2014 through February 20, 2016 inclusive with some missing days in 2014.”⁴ More recently, looking at April of 2017, there was 77% of days with a morning (7:00 a.m.) surface inversion of at least 1.0 degrees Centigrade.⁵ The high frequency of inversions will in fact, very likely intersect with allowable higher SO₂ emission levels and will not be “unlikely” as suggested above by Guidance.

2. The NAA is in the Mon Valley with the emission sources predominantly in the lower level of the river valley. This sets up a situation for trapping air pollution especially with the numerous inversions in the county.

3. The SO₂ SIP proposed 24 hour and 30 day averaging plan may have allowable emission hours above the critical emission value (CEV) as noted above. These allowable high hours, while possibly accommodating facility issues such as variability, will not help the breathing public nearby or downwind of the source. It should also be remembered that there are already allowable monitor exceedances built into the one-hour SO₂ standard.

The EPA “links short-term exposures to SO₂, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms.”⁶ Even a few hours above the critical emission value or even less than one hour could cause a local health effect immediately downwind of the higher emitting source/s. The one hour standard acknowledges these short term effects.

4. It is not clear from the SO₂ SIP description of the averaging plan how source non operating hours would be treated. Would those hours be averaged in as zeros for the 24 hour average day or would only the operating hours for a day be used to make that day’s average? Clarify what is a valid hour and how averaging is done. This should be noted in the SIP. SO₂ SIP Guidance in Appendix C (p. 3) notes, concerning a 30 day averaging plan for an electric generating unit, “Inherent in this recommended approach is that hours without operation are not included in the average.” Using only operating hours for a 24 hour average is a more health protective approach. Averaging should use this approach.

In an area with significant inversions added to a river valley location, and 24-7 high maintenance facilities, the strongest possible controls are called for. Even with the primary control equipment, the vacuum carbonate unit (VCU), operating this year, there were two monitor exceedances in the NAA (one due to breakdown but the other with normal VCU operation). Note: data is not fully validated/certified for 1st quarter 2017. An additional day was reported at 75 ppb hour.

The Conservative Control Needed For This Nonattainment Area Is The One Hour Non-Averaged SIP Limit.

1. *Proposed Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan Attainment Demonstration for the Allegheny, PA SO₂ Nonattainment Area 2010 Standards* May 1, p. 9

2. Stephen D. Page, Director, United States EPA, Office of Air Quality Planning and Standards, *Guidance for 1 hour SO₂ Nonattainment Area SIP*, Submissions, p. 25

3. Id., p. 24

4. Anthony Sadar, Air Pollution Administrator II at Allegheny County Health Dept, Air Program, email, 2/22/2016

5. Anthony Sadar, Air Pollution Administrator II at Allegheny County Health Dept, Air Program, email 6/1/2017

6. *Proposed Revision to the Allegheny County Portion of the Pennsylvania State Implementation Plan Attainment Demonstration for the Allegheny, PA SO₂ Nonattainment Area 2010 Standards*, p. 1