

Region 3 Plan Summary
Allegheny County, Pennsylvania Sulfur Dioxide (SO₂) Maintenance Plan

Title: Maintenance Plan and Contingency Measures for the Allegheny County SO₂ Attainment Area

Federal Register Dates: April 2, 2004, 69 FR 17374 (Proposed Rule); July 21, 2004, 69 FR 43522 (Final Rule).

EPA Effective Date: August 20, 2004.

State Submittal Date: August 15, 2003.

Affected Areas: The following defined geographic areas in Allegheny County:

1. Hazelwood Area: The areas within a two-mile radius of the Hazelwood monitor.
2. Monongahela River Valley Area: That portion of Allegheny County within an eight-mile radius of the Duquesne Golf Association Club House in West Mifflin excluding the Hazelwood area.

Summary of the Plan: The SIP for Southwestern Pennsylvania was fully approved by EPA on October 21, 1981 (46 FR 51607), and identified existing local control strategies to bring the area into compliance. Control strategies included coke oven gas desulfurization and source-specific emission requirements. On November 15, 1990, the CAA amendments were enacted. Pursuant to section 107(d)(1)(C), the Hazelwood area in Allegheny County, Pennsylvania, was designated nonattainment and the Monongahela River Valley area in Allegheny County, Pennsylvania, was designated unclassifiable by operation of law. On August 18, 1995 (60 FR 43012), EPA approved a source-specific SIP revision for US Steel Clairton Works in Allegheny County, implementing spare desulfurization equipment to be used in the event of a breakdown of the coke oven gas desulfurization process. The August 15, 2003 submittal includes an additional revision to the areas SO₂ emission limits. This revision to the ACHD Article XXI, Revision 46, section 2104.03, pertains to allowable sulfur oxide emission limits for fuel burning equipment. Specifically, the revision mandates that equipment firing only natural gas or liquified petroleum gas (propane), or any combination thereof, will be limited to an SO₂ emission rate which is no greater than the current potential to emit (pte). In addition, the SIP revision limits processes and incinerators to the lesser of their current pte rate or 500 ppm SO₂ at any time in the effluent stack gas (volumetric basis).

Implementation of the SIP has led to decreased levels of pollutant emissions. These improvements are permanent and enforceable. Limits restricting hydrogen sulfide (H₂S) content have been imposed under Article XXI of ACHD's regulations. Shenango, Inc., is required to meet a limit of 34 grains of hydrogen sulfide content per dry hundred cubic feet of coke oven

gas, while US Steel must meet a limit of 40. The coke oven gas standard of 50 grains H₂S/100 dscf was in effect at the time of the nonattainment designation. The current limits of 34 and 40 grains H₂S/100 dscf represent a 32 percent reduction in modeled SO₂ emissions from coke oven gas usage at Shenango and a 20 percent reduction at US Steel, respectively.

Permanent shutdown of many facilities in the nonattainment and unclassifiable areas has occurred. LTV Corporation permanently ceased operations of its Hazelwood coke production facility in 1998. LTV's South Side facility closed shortly after the time of designation. Unlike currently operating facilities which were modeled at their allowable emission rates, banked emissions were used in the modeling demonstration for the LTV facilities, which represent approximately a 65 percent reduction from LTV's former allowable emissions. Emissions from the Hazelwood coke facility were the primary cause of violations in the Hazelwood area, and consequently, the designation of nonattainment. Other facilities situated outside the nonattainment area but inside the unclassifiable area, such as US Steel Duquesne, Homestead, and National Works, have also permanently ceased operations since the time of designation, with no banked emissions.

The decrease of coal and fuel oil usage has led to air quality enhancements. Numerous sources have restrictions on coal and oil, and their enforceable operating permits reflect that these sources are not capable of burning these fuels.

New allowable limits are to be implemented for boilers firing only natural gas and/or and liquefied petroleum gas (propane). These boilers will now have limits no greater than their current maximum pt values of SO₂. This revision allows for more accurately modeled plumes, as it makes a natural gas boiler and a coal boiler of the same capacity more distinguishable by emission rates. Percent reduction due to this change is given by the change in emission factors, from 1.0 to 0.006, in pounds of SO₂ per million Btu.

Emissions Inventory: Industrial facilities are the main contributors of emissions in the area. The maintenance plan includes the 1999 emission inventory used to perform the modeling demonstration of attainment and maintenance. Emission rates are based on the maximum allowable amounts of SO₂ as determined by Article XXI of the SIP that could potentially be released into the ambient air.

New Source Review: EPA guidance indicates the permitting requirements of the part D NSR program for new major sources and major modifications shall be replaced by the PSD program's permitting requirements when an area has reached attainment and has been redesignated, provided that the PSD program will be fully effective immediately upon redesignation. The ACHD was originally delegated the authority to implement and enforce the provisions of 40 CFR 52.21 on behalf of EPA, on December 14, 1983 (48 FR 55625). The ACHD adopted the PSD requirements promulgated in 40 CFR 52.21, incorporating them by reference in its regulations as provided in Article XXI, section 2102.07. On March 26, 2003, EPA renewed the

ACHD's existing delegation to implement and enforce the provisions of 40 CFR 52.21 as well as any future revisions to these regulations (68 FR 14617).

Conformity Requirements: Because the SO₂ violations had been caused by industrial sources and motor vehicles were not an important contributor to the nonattainment problem, for conformity purposes, no quantitative analysis for transportation related SO₂ impacts is required.

Contingency Measures: If an SO₂ exceedance occurs anywhere in the Hazelwood and Monongahela River Valley areas, the ACHD would first determine whether or not all of the affected sources are in compliance with their allowable SIP-approved limits. If any sources are found in violation of their allowable SIP-approved limits, the ACHD would take the appropriate action to bring any source(s) back into compliance. If all sources are found to be in compliance, the ACHD will evaluate the nature of cause of the exceedance and determine whether such an exceedance triggers the need for additional additional emission controls measures. If a violation of the NAAQS does occur, regulatory contingency measures to further reduce SO₂ will be adopted within 12 months of the violation. Those regulatory contingency measures will be implemented such that affected sources are in required to comply with their requirements within 12 months of their adoption. Possible contingency measures include: lowering the hydrogen sulfide grain loading for coke oven gas, specific plan limits for types or amounts of high sulfur fuel, and lower SO₂ emission limits.

Subsequent Maintenance Plan Revisions: The Clean Air Act requires that a new maintenance plan must be submitted to EPA, as a SIP revision, within eight years of the redesignation of the nonattainment area. This subsequent maintenance plan must provide for the maintenance of the NAAQS for SO₂ for a period of 10 years after the expiration of the initial 10-year maintenance period. The PADEP must submit an updated maintenance plan within eight years of the final redesignation of these areas.

EPA Region 3 Contact: Ellen Wentworth (3AP21), U.S. EPA Region III
1650 Arch Street, Philadelphia, PA 19103-2029
(215) 814-2034; wentworth.ellen@epa.gov