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May 17, 2022

**VIA EMAIL: [aqcomments@alleghenycounty.us](mailto:aqcomments@alleghenycounty.us)**

Allegheny County Health Department  
Air Quality Program  
301 39<sup>th</sup> Street – Building 7  
Pittsburgh, PA 15201-1811

**Re: Comments on proposed amendments to ACHD Coke Oven Regulations**

To Whom it Concerns:

Kindly accept for consideration the attached comments of the Group Against Smog and Pollution regarding proposed amendments to Allegheny County Health Department Rules and Regulations Article XXI, Air Pollution Controls: Coke Oven Regulations.

Very truly yours,

/s/  
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Ned Mulcahy  
Staff Attorney

*attachment*

**COMMENTS OF THE GROUP AGAINST SMOG AND POLLUTION  
REGARDING THE SECOND SET OF PROPOSED REVISIONS TO SECTION 2105.21  
OF ARTICLE XXI OF THE RULES AND REGULATIONS OF THE  
ALLEGHENY COUNTY HEALTH DEPARTMENT**

**I. COKE OVEN EMISSIONS FROM THE CLAIRTON PLANT REGULARLY  
CONTRIBUTE TO EXCEEDANCES OF THE AMBIENT AIR QUALITY  
STANDARD FOR HYDROGEN SULFIDE; THE DEPARTMENT MUST  
DEMONSTRATE THE PROPOSED REGULATORY CHANGES WILL REDUCE  
EXPOSURE TO THESE EMISSIONS**

The United States Environmental Protection Agency (“EPA”) announced its listing of coke oven emissions as a hazardous air pollutant (“HAP”) under Section 112(b) of the Clean Air Act on September 18, 1984.<sup>1</sup> This decision was “based on the Administrator's findings that coke oven emissions pose a significant risk to the public.”<sup>2</sup> An EPA Fact Sheet summarizing the 1993 National Emissions Standards for Hazardous Air Pollutants (NESHAP) from coke oven batteries was more blunt in its assessment: “[c]oke oven emissions are among the most toxic of all air pollutants.”<sup>3</sup>

As part of its research into quantifying these risks, the EPA determined, “[h]uman exposure to coke oven emissions occurs as a result of emissions released during the charging, coking (door, topside port, and offtake system leaks), and pushing operations. During these operations, large quantities of sulfur dioxide, organic vapors, particulates, and coal tar pitch volatiles, adsorbed to particulates, can be emitted to the atmosphere.”<sup>4</sup> Other components of

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<sup>1</sup> National Emission Standards for Hazardous Air Pollutants; Addition of Coke Oven Emissions to List of Hazardous Air Pollutants, 49 Fed. Reg 36,560 (Sept. 18, 1984).

<sup>2</sup> *Id.*

<sup>3</sup> U.S. Env'tl. Prot. Agency, Fact Sheet: Coke Oven NESHAP (Nov. 1993), <https://www.epa.gov/stationary-sources-air-pollution/fact-sheet-coke-ovens-batteries-national-emissions-standards>.

<sup>4</sup> Office of Health and Env'tl. Assessment, U.S. Env'tl. Prot. Agency, EPA-600/6-82-003F, Carcinogen Assessment of Coke Oven Emissions, at 9 (Feb. 1984).

coke oven emissions include “toxic gases, such as hydrogen sulfide and carbon monoxide, and metals (arsenic, beryllium, cadmium, chromium, lead, and nickel).”<sup>5</sup>

Accurately assessing the health impact of exposure to coke oven emissions is made complicated by the harmful chemical constituents taking the form of both particulate and gaseous emissions.<sup>6</sup> This means additional chemical reactions and transformations of those compounds as well as atmospheric dispersion will not affect all constituents equally or uniformly.<sup>7</sup> Thus, evidence of one component of coke oven emissions being detected at one location does not establish that all coke oven emissions constituents will also be present at that location and / or in predictable concentrations. But even considering these limitations, the frequency and consistency of elevated levels of hydrogen sulfide (“H<sub>2</sub>S”) in the ambient air at the Department’s monitoring site in Liberty strongly suggests the public is being exposed to multiple coke oven gas constituents.

As for H<sub>2</sub>S specifically serving as that indicator, the Health Department’s 2020 Air Quality Annual Report shows that for the years 2000 through 2020, ambient air concentrations of H<sub>2</sub>S at the Liberty monitor site exceeded the state’s 24-hour H<sub>2</sub>S standard<sup>8</sup> between 25 and 87 times per year; over 70% of those years saw 40 or more such exceedances.<sup>9</sup> In addition, the

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<sup>5</sup> National Emission Standards for Hazardous Air Pollutants for Source Categories; Coke Oven Batteries, 57 Fed. Reg. 57,534, 57,535 (December 4, 1992).

<sup>6</sup> *See generally*, William R. Mabey, Stanford Research Institute, Identity and Chemical and Physical Properties of Compounds in Coke-Oven Emissions (Sept. 1977), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2003-0051-0048>. (Part of EPA Rulemaking Docket EPA-HQ-OAR-2003-0051: National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Coke Oven Batteries - Residual Risk)

<sup>7</sup> *Id.*

<sup>8</sup> Concentrations of H<sub>2</sub>S must not exceed 0.005 parts per million (“ppm”) averaged over twenty-four hours and 0.1 ppm averaged over one hour. 25 Pa. Code § 131.3. Article XXI incorporates the Pennsylvania H<sub>2</sub>S standards by reference, and the standards thus apply in Allegheny County. Art. XXI, § 2101.10.a.

<sup>9</sup> Air Quality Program, Allegheny Cty. Health Dept., 2020 Air Quality Annual Report, at 23, [https://www.alleghenycounty.us/uploadedFiles/Allegheny\\_Home/Health\\_Department/Resources/Data\\_and\\_Reportimg/Air\\_Quality\\_Reports/2020-Air-Quality-Annual-Report.pdf](https://www.alleghenycounty.us/uploadedFiles/Allegheny_Home/Health_Department/Resources/Data_and_Reportimg/Air_Quality_Reports/2020-Air-Quality-Annual-Report.pdf).

Department recently confirmed that these high levels of H<sub>2</sub>S at the Liberty monitor “can be attributed entirely to emissions originating at U.S. Steel’s Clairton coking facility.”<sup>10</sup>

The Department has the authority and duty to reduce the impact of coke oven emissions on ambient air quality.<sup>11</sup> The proposed regulatory changes could very well result in some improvements, but the lack of documentation supporting that conclusion is concerning.

Ultimately, demonstrating the proposed revisions result in a reduction in H<sub>2</sub>S concentrations at the Liberty monitor site might be legally necessary to defend the revisions, but irrespective of – or perhaps in addition to – that matter, the Department must present the public with clear plan to improve air quality around the Clairton Plant and limit the public’s exposure to hazardous coke oven gas emissions.

## **II. THE PROPOSED REVISIONS SHOULD INCLUDE ALL APPLICABLE FEDERAL EMISSION STANDARDS THAT ARE AT LEAST AS STRINGENT AS ARTICLE XXI STANDARDS**

### **A. Article XXI’s Standards for Particulate Matter Emissions from Pushing Emission Control Devices for Certain Batteries at the Clairton Plant are not as Stringent as the Standard Established by 40 C.F.R. Part 63 Subpart CCCCC**

Section 7290(a) of 40 C.F.R. Part 63 Subpart CCCCC establishes limits on emissions of particulate matter from pushing emission control devices associated with coke oven batteries, as follows:

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<sup>10</sup> Air Quality Program, Allegheny Cty. Health Dept., Analysis and Attribution of Hydrogen Sulfide (H<sub>2</sub>S) Exceedances at the Liberty Monitoring Site from January 1, 2020 through March 1, 2022 (March 3, 2022), at 1, [https://www.alleghenycounty.us/uploadedFiles/Allegheny\\_Home/Health\\_Department/Programs/Air\\_Quality/H2S\\_Report\\_03032022.pdf](https://www.alleghenycounty.us/uploadedFiles/Allegheny_Home/Health_Department/Programs/Air_Quality/H2S_Report_03032022.pdf).

<sup>11</sup> “No person shall willfully, negligently, or through the failure to provide and operate necessary control equipment or to take necessary precautions, operate any source of air contaminants in such manner that emissions from such source . . . [c]ause an exceedance of the ambient air quality standards established by §2101.10 of this Article; or . . . [m]ay reasonably be anticipated to endanger the public health, safety, or welfare.” Article XXI 2101.11.a.2-3.

- (1) 0.01 grain per dry standard cubic foot (gr/dscf) if a cokeside shed is used to capture emissions;
- (2) 0.02 pound per ton (lb/ton) of coke if a moveable hood vented to a stationary control device is used to capture emissions;
- (3) If a mobile scrubber car that does not capture emissions during travel is used:
  - (i) 0.03 lb/ton of coke for a control device applied to pushing emissions from a short battery, or
  - (ii) 0.01 lb/ton of coke for a control device applied to pushing emissions from a tall battery; and
- (4) 0.04 lb/ton of coke if a mobile control device that captures emissions during travel is used.<sup>12</sup>

The proposed revisions to section 2105.21 establish limits of 0.040 lb/ton of coke for the pushing emission control device associated with Battery B at the Clairton Plant<sup>13</sup> and limits of 0.010 grains/dscf for the pushing emission control devices associated with Batteries 1, 2, 3, and 19.<sup>14</sup> For the pushing emission control devices associated with the Clairton Plant's other batteries, however, the proposed revisions would permit emissions as high as 0.020 grains/dscf.<sup>15</sup>

Notably, section 7290 does not permit emissions of 0.020 grains/dscf from a pushing emission control device; emission limits for such devices are either expressed in terms of pounds per ton of coal produced or limited to 0.010 grains/dscf. Because regulations in Article XXI must be at least as stringent as corresponding regulations promulgated under the Clean Air Act,<sup>16</sup> section 2105.21.e.1 must be revised so that emissions from the pushing emission control devices associated with Batteries 13, 14, 15, 19, 20, and C at the Clairton Plant are either limited to the

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<sup>12</sup> 40 C.F.R. § 63.7290(a).

<sup>13</sup> Proposed § 2105.21.e.3.

<sup>14</sup> Proposed § 2105.21.e.2

<sup>15</sup> *See* Proposed § 2105.21.e.1.

<sup>16</sup> *See* 35 P.S. § 4012(a).

0.010 grains/dscf required by 40 C.F.R. § 7290(a)(1) or to the appropriate measure of pounds per ton of coke produced as required by 40 C.F.R. § 7290(a)(2) – (4). Alternatively, the Department must demonstrate that the 0.020 grains/dscf limit in section 2105.21.e.1 is at least as stringent as the appropriate limit established by 40 C.F.R. § 7290(a)(2) – (4).

**B. The Department Should Demonstrate that Section 2105.21’s Limits on Emissions of Particulate Matter from Coke Oven Battery Combustion Stacks are at Least as Stringent as the Limits in 40 C.F.R. Part 63 Subpart CCCCC**

Section 7296 of Subpart CCCCC limits visible emissions from combustion stacks associated with coke oven batteries to a 15 % daily average opacity during normal coking cycles, or a 20 % daily average opacity during extended coking cycles. Section 2105.21 also limits the opacity of visible emissions from such stacks, although on a different basis than section 7296: under section 2105.21, the opacity of such emissions is limited to “20 % for a period or periods aggregating in excess of three (3) minutes in any 60-minute period,”<sup>17</sup> and may not exceed 60 % at any time.<sup>18</sup>

Because sections 7296 and 2105.21.f use different bases to limit the opacity of visible emissions from combustion stacks, it is not clear that the limits established by Section 2105.21.f are at least as stringent as those established by section 7296. Because regulations in Article XXI must be at least as stringent as corresponding regulations promulgated under the Clean Air Act,<sup>19</sup> the Department should either revise section 2105.21.f.5 and 6 so that they are at least as stringent as section 7296 or demonstrate that the limits in Section 2105.21.f.5 and 6 are already at least as stringent as the limits in section 7296.

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<sup>17</sup> Proposed § 2105.21.f.5.

<sup>18</sup> Proposed § 2105.21.f.6.

<sup>19</sup> See 35 P.S. § 4012(a).

**C. The Department Should Demonstrate that Section 2105.21’s Limits on Emissions from Leaking Doors, Leaking Topside Port Lids, Leaking Offtake Systems, and Visible Emissions per Charge are at Least as Stringent as Such Limits in 40 C.F.R. Part 63 Subpart L**

40 C.F.R. Part 63 Subpart L establishes emission standards for by-product coke oven batteries, including the batteries at the Clairton Plant. These standards include emission limits on leaking doors, leaking topside port lids, and leaking offtake systems at each battery.<sup>20</sup>

Compliance with each of these limits is to be determined using a 30-day rolling average of performance test results.<sup>21</sup>

Subpart L also limits visible emissions during charging operations on a per charge basis. Compliance with that limit is to be determined using a “logarithmic 30-day rolling average of the seconds of visible emissions per charge for each battery.”<sup>22</sup>

Section 2105.21 also imposes limits on emissions from leaking doors, leaking topside port lids, leaking offtake systems, and charging operations. Compliance with section 2105.21’s limits is not based on 30-day rolling averages, but rather is determined on a performance test-by-performance test basis. Notably, the numerical limits imposed by section 2105.21 are in many instances higher than those imposed by Subpart L:

	Subpart L (% Leaking)	Section 2105.21 (% Leaking)
Doors (Tall)	< 4.0 % (tall); <sup>23</sup> < 3.3. % (short) <sup>24</sup>	< 3.0 % (Battery C); < 5.0 % (battery installed, replaced, reconstructed, or modified on

<sup>20</sup> See 40 C.F.R. §§ 63.302(a)(3); 63.302(d); and 63.304(b)(4).

<sup>21</sup> See 40 C.F.R. §§ 63.302(a)(3)(referring to the procedure for determining a 30-day rolling average described by § 63.309(d)(1)); 63.302(d) (same); and 63.304(b)(4)(same).

<sup>22</sup> See 40 C.F.R. §§ 63.302(a)(3)(v) (referring to the procedure for determining a 30-day rolling average described by § 63.309(d)(2)); 63.302(d)(5)(same); 63.304(b)(4)(iv) (same).

<sup>23</sup> 40 C.F.R. §§ 63.302(a)(3)(i); 63.302(d)(1); and 63.304(b)(4)(1)(A).

<sup>24</sup> 40 C.F.R. §§ 63.302(a)(3)(ii); 63.302(d)(2); and 63.304(b)(4)(1)(B).

		or after 1/1/1978); < 8.0 % (all other batteries) <sup>25</sup>
Charging Ports	< 0.4 % <sup>26</sup>	< 0.6 % (Battery C); < 1.0 % (battery installed, replaced, reconstructed, or modified on or after 1/1/1978); < 2.0 % (all other batteries) <sup>27</sup>
Offtake Piping	< 2.5 % <sup>28</sup>	< 3.0 % (Battery C); < 4.0 % (battery installed, replaced, reconstructed, or modified on or after 1/1/1978); < 5.0 % (all other batteries) <sup>29</sup>
Visible Emissions During Charging (Battery Installed, Replaced, Reconstructed, or Modified on or after 1/1/1978)	< 12 seconds <sup>30</sup>	< 55 seconds during any 5 or fewer consecutive valid charges (battery installed, replaced, reconstructed, or modified on or after 1/1/1978); <sup>31</sup> < 75 seconds during any 4 or fewer consecutive valid charges (all other batteries) <sup>32</sup>

Because compliance with section 2105.21’s limits is not determined on the same bases as compliance with Subpart L’s limits, it is not self-evident that that the limits in section 2105.21 are at least as stringent as their counterparts in Subpart L. The Department should demonstrate that they are.

<sup>25</sup> Art. XXI, §§ 2105.21.b.1, 2105.21.b.2, and 2105.21.b.3.

<sup>26</sup> 40 C.F.R. §§ 63.302(a)(3)(iii); 63.302(d)(4); 63.304(b)(4)(ii).

<sup>27</sup> Art. XXI, §§ 2105.21.c.1, 2105.21.c.2, and 2105.21.c.4.

<sup>28</sup> 40 C.F.R. §§ 63.302(a)(3)(iv); 63.302(d)(3); and 63.304(b)(4)(iii).

<sup>29</sup> Art. XXI, §§ 2105.21.d.1, 2105.21.d.2, and 2105.21.d.4.

<sup>30</sup> 40 C.F.R. §§ 63.302(a)(3)(v); 63.302(d)(5); 63.304(b)(4)(iv).

<sup>31</sup> Art. XXI, § 2105.21.a.1.

<sup>32</sup> Art. XXI, § 2105.21.a.2.



### **III. ARTICLE XXI SHOULD DEFINE THE TERM “VALID CHARGE”**

The term “valid charge” is used repeatedly in revised section 2105.21.a, but not defined. EPA Method 303 does not define “valid charge”, but it includes references to “valid observations,” which only further confuses potential interpretations.<sup>33</sup> Further, what constitutes a “valid charge” is not immediately clear from the term itself or from the context in which it is used in section 2105.21. Accordingly, to avoid ambiguity and confusion, Article XXI should define what constitutes a “valid charge.”

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<sup>33</sup> See 40 C.F.R. Part 63 App. A, Method 303 § 11.0 Procedure.