**Frequently Asked Questions**

**for Air Management Regulation VI Amendment**

**July 2022**

## 1)What is AMR VI?

Air Management Regulation (AMR) VI, titled Control of Emissions of Toxic Air Contaminants, is an air pollution control regulation promulgated by the Philadelphia Air Pollution Control Board (APCB). It focuses on control of a category of air pollutants called Toxic Air Contaminants (TACs), also known as Air Toxics, or Hazardous Air Pollutants (HAPs). These pollutants can be emitted into the air by various air pollution sources.

## 2)Why is the 2022 AMR VI amendment necessary?

The existing version of AMR VI was established in 1981 and has never been updated. It can be found here online. In the past 40 years, many things have changed: science has advanced significantly in understanding and determining harmful health effects that toxic air contaminants cause in humans; the US Environmental Protection Agency (EPA) has issued guidelines and rules regarding control of HAPs under the 1990 Clean Air Act Amendments; the usage of toxic chemical compounds and pollutant emission patterns from industries have changed; and the public has had further demand and expectations for air pollution control. Therefore, amendments to the 1981 Air Management Regulation VI, including cancer and non-cancer risk assessment, are very much needed.

## 3)How can I submit comments regarding the proposed amendments?

The APCB is accepting both written and oral comments on the proposed regulation amendments. Please submit written comments via email to Benjamin.hartung@phila.gov. The deadline for submitting written comments is August 9, 2022 at 12:00 p.m.

To submit oral comments at the virtual Zoom meeting being held on August 10, 2022 at 6:00 p.m., it is highly encouraged that you pre-register in advance using this link: https://pdph-phila-gov.zoom.us/webinar/register/WN_QqXTLAFYT5O0XOFK0EXAwg. Those who have pre-registered will be called upon first to submit oral comments during the public hearing. Those who register at the time of the hearing will follow if time allows

The Zoom link above can be used to register for the meeting at any time, including while the meeting is occurring on August 10, 2022. The meeting can be joined by computer via video, and by phone. Instructions for joining by either method are available upon registering at the above Zoom link. The dial-in numbers are: +1 646 931 3860 or +1 301 715 8592 or +1 312 626 6799 or +1 646 558 8656 or +1 564 217 2000; Webinar ID 881 4046 9905.

Oral testimony will be limited to 5 minutes per speaker for those who have pre-registered. The APCB requests that each organization or facility providing oral testimony limit themselves to

one designated speaker, so that the Board may accommodate as many speakers as efficiently as possible

**4)What impacts do TACs (HAPs) have on public health?**

These chemical compounds can harm health in different ways, including causing cancer, non-cancer effects (such as damage to lungs, brain, heart and other organs), birth defects, and exacerbation of existing health conditions. More information can be found here.

**5)What TACs (HAPs) are targeted in this AMR VI amendment for emission control?**

The toxic air contaminants (or HAPs) to be regulated under this AMR VI amendment include 217 chemical compounds and compound groups. This list covers nearly all HAPs[1] listed by EPA under the Clean Air Act. Two compound groups are in the EPA HAP list but not included in AMR VI: Radionuclides and Fine Mineral Fibers; this is because: 1) no reference data were found available to establish their reporting thresholds; 2) no ambient air emission sources currently exist in Philadelphia. Note that "Fine Mineral Fibers" here is separate from Asbestos, which is included in AMR VI. Philadelphia also has an asbestos control regulation. Additional chemical compounds and compound groups beyond the EPA list were included because: 1) some of the compounds are considered "likely to cause cancer" (such as Total Dioxin and Furans); 2) some have shown developmental and reproductive toxicities; 3) some are part of an EPA-listed compound group, but added in AMR VI individually for more specific information (such as Nickel Oxide and Nickel Carbonyl, part of EPA listed "Nickel Compounds").

**6)What entity in Philadelphia promulgates air management regulations?**

Pursuant to the Philadelphia Home Rule, Chapter 3, Section 5-302, the Air Pollution Control Board reviews and approves Philadelphia air management regulations.

The public hearing was requested and is being held pursuant to Section 8-407(c) of the Philadelphia Home Rule Charter.

**7)What are the differences between the 1981 AMR VI and the 2022 AMR VI amendment?**

The major differences include: 1) The number of regulated TACs increased from 99 to 217 chemical compounds and compound groups; 2) In the 2022 amendment, each of the TACs is associated with a Reporting Threshold. This is an emission amount (pounds per year) of the particular pollutant from a source, above which the Philadelphia Department of Public Health has determined that a health risk assessment is necessary when an entity applies for an air emission permit.

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**8)If an entity releases more than 1 type of TAC are the risks added together in the risk analysis?**

The AMR VI Technical Guidelines (Exhibit A) indicate that risk assessment will be performed for one TAC or HAP at a time[2]. The TAC/HAP with the highest risk value will be used to determine the overall result of the risk assessment. There are scientific uncertainties with simple additions of risk values from different HAPs. As science advances with more definitive findings, the Department will take them into consideration in the future. However, cancer risks for entities that release more than 1 type of TAC/HAP will be added individually with the background TACs/HAPs and evaluated as a part of risk analysis. Please see below for more details.

**9)Will applicants have to estimate cancer risk and how will the risk be evaluated ?**

Applicants for all new plan approvals or Title V operating permits (initial and renewal) will have to estimate cancer and non-cancer risks to the surrounding community using standardized health risk assessment tools. Any applicant whose emissions will exceed a risk of one per million based on the screening spread sheet or SCREEN3 or similar modeling tools will have to submit: refined risk assessment (more detailed, requires accounting for weather and sensitive populations nearby); risk mitigation plan; and PDPH will conduct case by case review and may deny permits or require additional risk mitigation

**10)Does an analysis of an entity's HAP emissions take into account whether there are other entities in close proximity that also emit HAPs?**

For certain types of applications that are used for larger-emitting projects and facilities, the risk assessment will be required to account for the "background cancer risk" of nearby census tracts where the facility is located, based on EPA data. This background includes emissions from other entities, long range air transport, and others. For more information, see the AMR VI Technical Guidelines (Exhibit A).

**11)Where can I find the latest documents of the AMR VI amendment?**

The amended regulation and related documents (Exhibits A, B, and C) are posted on the Philadelphia Records Department website on May 2, 2022 at http://regulations.phila-records.com/ .

**12)How were the reporting thresholds established?**

For each of TACs or HAPs, several categories of factors and data were analyzed to establish the reporting threshold: 1) the most recent scientific findings in toxicology data (cancer and non-

[2] For Title V facilities all release points of each TAC (HAP) within a facility will be considered together for the risk assessment.

cancer risk factors) of the pollutant; 2) Philadelphia meteorological data in recent years (because weather conditions impact pollutant transport in the air); 3) air quality modeling (computer simulations) using EPA's latest computer model; 4) various pollutant release scenarios in Philadelphia (stack heights and other parameters, distances from the stack to the facility property line, etc.). From these, most conservative estimates were determined where a maximum emission rate could be allowed and the cancer risk guideline (1 in a million) and the non-cancer risk guideline (Hazard Quotient = 1) would not be exceeded. For more information, see the AMR VI amendment Exhibits A and B.

**13)The process preceding the passage and implementation of AMR VI amendment:**

Air Management Services (AMS), a division of the Philadelphia Department of Public Health, started research for the AMR VI amendment in 2018. Drafts of the amendment were presented at Air Pollution Control Board meetings in multiple rounds of discussions. After each round, feedback from the public and the Board members was taken into consideration for revising the draft amendment. On April 28, 2022, The Air Pollution Control Board approved the current version of the 2022 AMR VI amendment and Exhibits A, B, and C. The approved documents have been posted on the Records Department website for public review and comments. A public hearing on this amendment was scheduled to take place at 6 PM on August 10, 2022. After the hearing, the Department will create a document to address all comments and questions. This comment response document will be presented to APCB for approval. The Board will also decide whether further revisions to this amendment are needed based on the public comments. If revisions are needed, AMS will provide proposed changes for APCB approval, following the regulatory process again. AMS will start implementing the AMR VI amendment after it takes effect.

**14)How will the public benefit from this regulation amendment?**

Once implemented, this AMR VI amendment will effectively reduce emissions of TACs/HAPs from stationary sources in Philadelphia - this includes many industrial and commercial facilities. Emission reductions of TACs/HAPs will help reduce cancers, hospital admissions, long-term health care burdens, doctor visits, absences from work and school, and respiratory illnesses in children and sensitive populations. Many historically disadvantaged communities, including minorities and low-income populations, live near industrial facilities and air pollution sources. These communities are expected to benefit significantly.

**15)What entities are affected, and how, by this regulation amendment?**

When an entity in Philadelphia applies for a permit to operate a device that will emit air pollutants, it is required to report the estimated maximum emission qualities (pounds per year) of any TAC/HAP in the permit application. If the facility, or an emission source within the facility, has the potential to emit more than the Reporting Threshold of any TAC under AMR VI, the applicant is required to perform an air toxics health risk assessment. Depending on the assessment results, the applicant may be required to implement emission control measures to reduce pollutant emissions before the permit application can be approved.

Facilities that submit permit applications to install or modify equipment that will potentially increase the emissions of a TAC above a set threshold will need to conduct a risk assessment for the project. If the risk level is too high, the facility will need to modify the application to reduce the risk to an approvable level. This can be done by a variety of methods, such as decreasing the emission rate, reducing operations, increasing the stack height, or increasing the distance to the property line. AMS has created spreadsheets that help facilities to calculate the risk level and determine how they can best lower risk.

Additionally, major-emitting facilities must conduct a risk analysis of the entire facility when they submit an application for their "Title V" operating permit, which allows them to operate. If the risk is too high, the facility will need to make modifications to reduce the risk to an approvable level.

The Department may create a Risk Management Team who will evaluate alternatives and consider social, economic, scientific, and engineering information to recommend best course of action.

**16)What are the considerations for economic impacts of this AMR VI amendment?**

The economic impact will vary widely, depending on the application. Facilities may need to submit potential TAC emissions with permit applications that did not require them in the past. This should not typically add a lot to the time and cost. AMS intends to create spreadsheets that automatically perform these calculations for certain common sources like boilers and emergency generators, which will make it easier for facilities. Facilities may need to hire consultants to help them with more complicated projects or for Title V operating permit applications.

Some facilities will find they need to modify their application in order for it to be approvable. AMS expects that in many cases they will be able to resolve this by installing a higher stack than originally planned, moving the project further from the property line, or implementing restrictions on operation that are easy to live with (most processes don't operate 8,760 hours per year). In these instances, the cost should be low.

It is possible that a facility may need to install a control device to have an approvable application. The cost to install and operate control devices for air toxics will vary between facilities and industries, and depending on the specific HAPs. The EPA has a webpage and a model dedicated to helping facilities estimate the cost of various control devices as accurately as possible. This webpage also includes spreadsheets that will calculate a cost estimate for installation and operation based on different input variables. The spreadsheets and guides can be found here. Take VOC reduction from flares as an example: if a flare has a gas flowrate of 3000 scfm, operates 100 hours per year, with a goal of 98% VOC reduction; the total investment cost for control technology is approximately $189,200 and the annual operation cost is about $66,400. It costs about $904 to remove 1 ton of VOC.

The EPA also has a cost analysis tool titled CoST (EPA's Control Strategy Tool). This tool is a free downloadable software that can model emission reductions and operating costs for control devices and strategies.

In some cases, reducing air toxics emissions can save money for the industry. In a study of furniture industry, for example, changing the design and manufacturing process reduced the use of materials emitting formaldehyde, resulting in lower emissions as well as lower cost of the materials.

**17)When is a facility-wide health risk assessment required with a Title V operating permit application?**

Both initial and renewal Title V operating permit applications will be required to include a facility-wide health risk assessment. This requirement will begin with applications received after the date the amendments become final.