



**CITY OF PHILADELPHIA
DEPARTMENT OF PUBLIC HEALTH
AIR MANAGEMENT SERVICES (AMS)**

**Southeastern Pennsylvania Transportation Authority (SEPTA)
Roberts Complex**

Plan Approval IP17-000009

**Installation of a Combined Heat and Power System
Consisting of two (2) 6113 HP Reciprocating Internal Combustion Engines**

**AMS Response Document to Written Comments Received &
Public Hearing on June 27, 2017
Paniti Playground
3101 North 22nd Street
Philadelphia, PA**

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12/1/17

PART I: PROJECT BACKGROUND

On or about November 30, 2016, the Southeastern Pennsylvania Transportation Authority (SEPTA) submitted a plan approval application to the City of Philadelphia (City) Department of Public Health, Air Management Services (AMS) for the construction of a Combined Head and Power Plant (CHP) at its Midvale Bus Facility located at 4130 Wissahickon Avenue, part of the Roberts Complex (SEPTA-Roberts). The CHP will consist of two 6113 horsepower (HP) natural gas-fired generators that will provide steam and heat to the facility and base electrical load to SEPTA's regional rail operations. Each generator will be equipped with a Selective Catalytic Reduction (SCR) and Oxidation Catalyst (OC) Systems. The SCR reduces Nitrogen Oxide (NO_x) emissions and the Oxidation Catalyst reduces Carbon Monoxide (CO), Volatile Organic Compounds (VOCs) and Formaldehyde (CH₂O) emissions.

On May 20, 2017, notice of the proposed issuance of the Plan Approval for the CHP project was published in the Pennsylvania Bulletin. See 47 Pa.B. 2883. The 30 day public comment period on the proposed Plan Approval began to run from the publication date. Id. The public hearing on the proposed Plan Approval was held at the Vincent G Panati Recreation Center / Panati Playground, 3101 N. 22nd Street, Philadelphia, PA 19132 on June 27, 2017, at 6 PM.

PART II: SUMMARIES OF COMMENTS AND AMS RESPONSE TO COMMENTS MADE DURING JUNE 27, 2017 PUBLIC HEARING, AND WRITTEN COMMENTS RECEIVED DURING THE 30 DAY COMMENT PERIOD

Note: The written comments, and the testimony of commenters at the public hearing, raised identical or similar concerns. Accordingly, these comments have been summarized and condensed by AMS where possible. The summarized comments, and attendant responses, are presented below in no particular order. A transcript of the June 27, 2017 Public Hearing, with noted corrections, and a copy of all written comments that were received and considered by AMS can be found at <http://www.phila.gov/health/AirManagement/PublicMeetings.html> under the 11-30-2017 notice.

Comment 1: Alternatives to the proposed installation of the CHP, and the anticipated health impact of the CHP were not adequately considered by AMS when reviewing the Plan Approval Application. SEPTA should be required to conduct studies that evaluate the human health impacts of the CHP, and explain why other alternatives to the CHP were not pursued in light of the City's environmental and energy efficiency goals.

- **AMS Response** – Consideration of alternatives to the CHP were not required as a matter of law because the project did not emit enough air pollution to trigger New Source Review Requirements (NSR). Pennsylvania Department of Environmental Protection (PADEP) regulations, specifically 25 Pa. Code Sec. 127.1 *et. seq.*, establishes requirements for the issuance of Plan Approvals for the installation of new air pollution sources, or modification of existing air pollution sources. AMS,

as an approved local air pollution control program pursuant to 35 P.S. Sec. 4012(b), has adopted and enforces these requirements pursuant to Phila. Code Sec. 3-401 and Air Management Regulation (AMR) XIII.

PADEP Plan Approval regulations only require an analysis that demonstrates that the benefits of the proposed project “significantly outweigh[s] the environmental and societal costs . . . as a result of its location, construction or modification” only when anticipated emissions are high enough to trigger NSR requirements. See 25 Pa. Code Sec. 127.205(5). Facilities may choose to take certain emission limitations to avoid triggering NSR. See e.g. 40 C.F.R. Sec. 49.158. Such facilities, classified as Synthetic Minor Sources, are relatively small sources of air pollution, where no such analysis is necessary. Id.

As discussed in the Plan Approval Application, and the revised Technical Review Memo, the SEPTA facility has requested a NO_x emission limit so that the SEPTA-Roberts facility will remain a Synthetic Minor Source after the completion of the CHP project. Accordingly, an evaluation of alternative locations for the CHP project, consideration of other possible processes or alternative emission control techniques, and a determination that benefits of the proposed CHP project outweigh its potential costs are not prerequisites for issuance of the Plan Approval in question. See 25 Pa. Code Sec. 127.205(5).

Nonetheless, AMS in reviewing the Plan Approval Application did evaluate the emissions from the proposed CHP project. As outlined in greater detail in the revised Technical Review Memo, AMS determined that emissions from the proposed CHP project would be well within federal, state, and local requirements. This analysis was also further buttressed by additional air modeling performed separately by AMS and SEPTA which showed that the proposed CHP project will not cause ambient levels of various criteria pollutants including, but not limited to, Nitrogen Dioxide (NO₂), Carbon Monoxide (CO), Particulate Matter less than 10 Microns (PM₁₀), Particulate Matter less than 2.5 Microns (PM_{2.5}), and SO_x, to exceed federal National Ambient Air Quality Standards (NAAQSs). See 42 U.S.C. Sec. 7409(b) (NAAQSs established by EPA to protect public health and public welfare from the adverse effects of specific, criteria air pollutants with an adequate margin of safety.)

As discussed in the revised Technical Review Memo, AMS conducted an additional analysis of the anticipated Hazardous Air Pollutant (HAP) and Ultra Fine Particles (UFPs) emissions of from the CHP project. None of the anticipated HAP emissions will exceed the levels established under the City’s Toxic Air Contaminants Regulation, AMR VI. Nor were the anticipated HAP emissions associated with an unacceptable cancer risk. Emissions of UFPs, as incorporated in PM_{2.5} and PM₁₀ criteria pollutants, are not expected to be significant.

Finally, although not considered by AMS in the Plan Approval Application process, SEPTA has expended some effort in assessing green alternatives to the

CHP project, and in evaluating its anticipated environmental benefits. These efforts predated the submission of the Plan Approval Application, and have continued, in part, to address concerns raised by the public. SEPTA has stated that it is pursuing the CHP project to fulfill environmental sustainability goals, and to enhance the reliability of its regional rail operations. The CHP project is considered an “alternative energy source” under the Pennsylvania Alternative Energy Portfolio Standards Act, 73 P.S. Sec. 1648.1 *et. seq.*, and was identified as an important strategy to reduce Green House Gas (GHG) emissions in PADEP’s 2015 Climate Change Action Plan. Electricity produced by the CHP project will displace electricity that SEPTA currently obtains from public utilities, and is estimated via the EPA CHP Emissions Calculator, to lead to a reduction in GHG emissions by 41% compared to current conditions.

SEPTA also retained a consultant to evaluate the feasibility of wind, solar, or other alternative energy solutions to address the needs of the SEPTA-Roberts facility. The consultant concluded that usage of wind generated energy at the facility was infeasible, and identified significant operational limitations for the deployment of solar energy at the site.

The Plan Approval Application, revised Technical Review Memo, revised Plan Approval, the various air dispersion modeling, and other supplemental documents that were provided by SEPTA are available online at <http://www.phila.gov/health/AirManagement/PublicMeetings.html> under the 05-20-2017 and 11-30-2017 notices.

Comment 2: The proposed Plan Approval Application should be denied because SEPTA has not explained why the installation of the CHP is necessary.

- **AMS Response** - As explained in the response to Comment 1 above, an extensive analysis of the benefits and costs of the proposed CHP is not required as a matter of law because the project will not emit enough air pollution to trigger NSR.

Nonetheless, the Plan Approval Application indicated that the proposed CHP was to provide steam / heat to the nearby SEPTA Midvale Bus facility, and to provide electricity to support, and otherwise enhance the reliability of, its regional rail operations. See Plan Approval Application. Operation of the proposed CHP will effectively replace the operation of existing dual fuel (natural gas and fuel oil) fired boilers that currently provide heat and steam for the facility. Unlike the boilers in question, the CHP will burn only natural gas, and will accordingly release low amounts of SO_x, heavy metals, and PM.

Comment 3: The Plan Approval Application should be denied because the negative health and environmental effects of the CHP will disproportionately impact the residents of surrounding neighborhoods, and does not satisfy environmental justice concerns. The Civil Rights Act of 1964 that prohibits any recipient of federal funds from taking actions that have a discriminatory effect by race, color or national origin. This obligation requires the City to study and ensure in environmental permitting decisions that any impacts (to health or otherwise) will not have a discriminatory effect.

AMS Response – The U.S. Court of Appeals for the 3rd Circuit Court has held that “Congress did not intend by adoption of Title VI [of The Civil Rights Act of 1964] to create a federal right to be free from disparate impact discrimination.” South Camden Citizens in Action v. NJDEP, 274 F.3d 771, 791 (3d. Cir. 2001). Such a right cannot be inferred from environmental regulations alone. Id.

However, to ensure that no racial, ethnic, or socioeconomic group bears more than its fair share of negative economic consequences resulting from permitting of certain polluting facilities, the City of Philadelphia Department of Public Health has adopted an Environmental Justice Public Participation Policy for AMS. The City’s policy, which can be found at and is otherwise identical to the PADEP’s, provides for enhanced public participation in the Plan Approval process in the event the area around a prospective air pollution source is deemed to be an “Environmental Justice Area” and contemplated project involves the construction or modification of a “Major Source.” See Environmental Justice Public Participation Policy for Air Management Services, Philadelphia Department of Public Health (http://www.phila.gov/health/pdfs/airmanagement/Environmental_Justice_Brochure.pdf). See also PADEP Environmental Justice Public Policy, Document ID: 012-0501-002, Dated April 24, 2004 (<http://www.elibrary.dep.state.pa.us/dsweb/Get/Version-48671/012-0501-002.pdf>).

The neighborhood surrounding the proposed CHP project qualifies as an “Environmental Justice Area” pursuant to both the City’s and Commonwealth’s Environmental Justice Policy. However, the proposed CHP project does not involve the construction or modification of a “Major Source.” As noted in the Plan Approval Application, and as discussed in the greater detail in the revised Technical Review Memo, the facility will be taking emission limits that require operation below the “Major Source” threshold. Accordingly, the enhanced public participation requirements of the Environmental Justice Policy do not apply. See Environmental Justice Public Participation Policy for Air Management Services, Philadelphia Department of Public Health.

Nonetheless, AMS did take steps to enhance the public’s participation in the Plan Approval process for the proposed CHP project that went beyond the minimum requirements. See 25 Pa. Code Secs. 127.44, 127.45. These efforts included many of the same steps provided by the Environmental Justice Policy such as:

- Creation of a plain language summary of the project

- Publication of the plain language summary, the proposed Plan Approval, notice about the proposed CHP project, Technical Review Memo and other supporting documents on AMS's website (<http://www.phila.gov/health/AirManagement/PublicMeetings.html>)
- Ensuring copies of the notice, Technical Review Memo, proposed Plan Approval, plain language summary, and supporting documents were made available in hardcopy at public libraries in the vicinity of the proposed CHP project site (ie. Falls of Schuylkill and Nicetown-Tioga Branches of the Philadelphia Free Library).

Finally, as explained in the response to Comment 1 above, AMS conducted a full review of the Plan Approval Application, and supporting documents like the AERMOD Air Modeling performed by SEPTA. Following this review AMS, determined that the proposed CHP project will not endanger the public welfare or public health. Absent such a danger, issuance of the Plan Approval for the proposed CHP project will not have a discriminatory effect.

Comment 4: The Plan Approval Application should be denied because construction of the CHP will otherwise infringe on the rights of nearby residents to clean air, as guaranteed by Article I, Section 27 of the Pennsylvania Constitution.

- **AMS Response** – The right to clean air, as per Art. I of the Pa. Constitution does not mean that any facility or project that would have an impact on air quality is prohibited per se. See Center of Coalfield Justice v. PADEP, EHB Docket No. 2014-072-B, slip op. at 60 (Opinion and Order, August 15, 2017). Rather, the Pa. Constitution prohibits the government from taking actions that cause “unreasonable” degradation or deterioration of the air. Id. (discussing Pa. Environ. Def. Foundation v. Commonwealth, 161 A.3d 911 (Pa. 2017) and Robinson Township v. Commonwealth, 623 Pa. 564 (2013)).

AMS's review of the Plan Approval Application for the proposed CHP project, supporting materials submitted by SEPTA, and the subsequent approval of that application, is consistent with all applicable Federal, State, and City statutory and regulatory requirements. These legal requirements, AMS's thorough review process, application of its scientific and technical expertise in air quality management, as well as the project specific terms and conditions of the Plan Approval, satisfy Art. I, Sec. 27 of the Pa. Constitution. The Plan Approval provides reasonable protections for public health and safety, and the environment. These reasonable protections include, but are not limited to the establishment of emission limits, monitoring requirements, and recordkeeping requirements.

Specifically, AMS gave due consideration to the environmental effects of its plan approval decision in this case prior to approving it. AMS reviewed all the information submitted by SEPTA for the proposed CHP including but not limited

air modeling evaluations, and emission factors for the natural gas fired engines that will be installed. As explained in the response to Comment 1, the issuance of the Plan Approval for the proposed CHP will not cause unreasonable degradation to the air in the vicinity of the facility. The air emissions will not rise to the level of a Major Source, and are not projected to contribute significantly to localized violations of the NAAQSs. Moreover, as discussed in the response to Comment 2, the operation of the proposed CHP is projected to reduce the emissions of PM from the facility as currently configured. As a result, AMS's approval of the Plan Approval is consistent with all applicable law, including Art. I, Sec. 27 of the Pa. Constitution.

Comment 5: The Plan Approval Application should be denied because SEPTA cannot be trusted to accurately report emissions from the CHP and ensure compliance with any emission limits that would be imposed. The proposed Plan Approval does not require continuous emissions monitors (CEMs) for pollutants, the intervals of time between required stack tests are too long, and the City does not have air pollution monitors nearby.

- **AMS Response** – The proposed Plan Approval, and applicable Federal, State, and Local authorities, require the CHP project to meet emission limits for a variety of pollutants. Compliance with these emission limits is determined, in part, via regular monitoring, emissions testing, and regular recordkeeping by SEPTA, as the facility operator.

The proposed Plan Approval requires that emission tests of the proposed CHP, known as stack tests, be performed in order to show that the imposed emission limits for pollutants can be met. See Plan Approval No. IP17-000009 at Conditions 23-26. Stack tests as required by the proposed Plan Approval must comply with emission testing requirements / procedures as established by U.S. EPA and PADEP. Id. at Condition 25. Data from this test, in combination with natural gas usage, are then used to calculate the amounts of air pollutants being emitted during CHP operation on a regular basis. Id.

To be in compliance, operation of the CHP must conform to parameters observed during the stack test, and the emissions calculations must otherwise be at or below the emissions limits specified in the proposed Plan Approval. Stack tests of the CHP will be required after 8,760 hours of operation. Id. at Condition 27. Pursuant to the Plan Approval Application, SEPTA is planning to operate the CHP in excess of 8,000 hours /year. Accordingly, such stack tests will be conducted nearly every year.

Compliance with emission limits, and other requirements in the proposed Plan Approval, will not be left up to the facility operator alone. AMS is authorized by law to conduct regular inspections of air pollution sources, review emission and fuel usage records kept by facility operators, and observe stack and emissions tests as they are being performed. See i.e. Phila. Code Secs. 3-301(6)-(7), 3-304; 25 Pa. Code Sec. 139.2(1). AMS is further authorized to

require additional emissions testing should the circumstance require, direct the facility operator to take corrective action, and seek civil penalties when appropriate, when air pollution violations occur. See Phila. Code Sec. 3-305; 35 P.S. Secs. 4009.1, 4012. The proposed recordkeeping and monitoring requirements contained in the proposed Plan Approval, as enforced by AMS, are sufficient to ensure compliance with the imposed emission limits.

Comment 6: Has AMS properly accounted for the health and environmental impacts of air pollutants from the proposed CHP (i.e. like ultrafine particulate, arsenic, fluoride, lead, mercury, radionuclides, nitrogen oxides (NOx), volatile organic chemicals (VOCs), and carbon dioxide (CO2)) in light of other air pollution sources in the vicinity?

- **AMS Response** – As discussed in the responses to Comments 1, 2, 4 and 5, AMS has reviewed the Plan Approval application, and supporting materials, to determine the type and amount of pollutants that will be emitted by the proposed CHP project. The proposed Plan Approval includes emission limitations, and other applicable requirements, to ensure that the operation of the proposed CHP will not unreasonably impact air quality within Philadelphia. This analysis is discussed in greater detail in the revised Technical Review Memo.

Comment 7: What safeguards are in place in the event that there is a localized air pollution emergency, and pollution from the CHP determined to be a contributing factor?

- **AMS Response** – As noted in the response to Comment 5, the SEPTA-Roberts facility will remain a Synthetic Minor Source, as opposed to Major Source, after the installation of the CHP project. AMS will be monitoring operation of the proposed CHP for compliance with the proposed Plan Approval and other applicable air pollution requirements. In the event that an air pollution violation is determined to have been caused by the operation of the CHP, AMS has the authority to require that SEPTA, as the facility owner and operator, take action to correct such violations. Such action, may include, ordering that operation of the CHP be halted if so warranted by the circumstances. See Phila. Code Sec. 3-305.

Comment 8: The proposed Plan Approval calls for the installation and operation of Selective Catalytic Reduction (SCR) and Oxidation Catalytic (OC) Systems to control emissions from the natural gas fired generators at the proposed CHP. How will the operation of these systems be guaranteed?

- **AMS Response** - As noted in the response to Comment 5, the SEPTA-Roberts facility will remain a Synthetic Minor Source, as opposed to Major Source, after the installation of the CHP project. AMS will be monitoring operation of the proposed CHP for compliance with the proposed Plan Approval and other applicable air pollution requirements. Operation of the SCR and OC Systems are specified by the proposed Plan Approval during operation of the proposed

CHP for emissions control. See Plan Approval No. IP17-000009, Condition 21. In addition to an annual emission test to verify the effectiveness of the catalysts, regular monitoring and recording of a variety of SCR and OC operating parameters is also required. Id. at Conditions 22, 24, 29, 30, 31(n). AMS has also revised the proposed Plan Approval to include additional quarterly portable analyzer tests of the SCR and OC system to demonstrate they are working properly. See Id. at Condition 22.

AMS may take action against SEPTA in the event that these requirements are not being met. Such actions include, but are not limited to, potential fines of up to \$25,000 per day per violation, corrective orders, and revocation of the Plan Approval.

Comment 9: Operation of the proposed CHP will require the use of ammonia, a dangerous chemical. Storage of ammonia at the facility poses a danger to the surrounding community.

- **AMS Response** – In response to this concern, SEPTA has agreed to switch the SCR reactant from ammonia to urea. Urea is comparatively stable, non-explosive, non-flammable, is not stored under pressure, and, unlike ammonia, can be handled without special precautions.

Comment 10: Will construction and operation of the proposed CHP significantly impact the City's compliance with the NAAQSs?

- **AMS Response** – AMS has the responsibility to ensure that projects like the proposed CHP will not significantly impact the City's ability to comply with the NAAQSs. As noted in the response to Comment 1 and as discussed in greater detail in the revised Technical Review Memo, construction and operation of the proposed CHP pursuant to the Plan Approval will not significantly impact the City's compliance with the NAAQSs. Both the AERSCREEN air dispersion modeling performed by AMS, and the additional AERMOD air dispersion modeling performed by SEPTA, indicate that the anticipated emissions from the proposed CHP will not lead to localized violations of the NAAQSs.

Comment 11: The Plan Approval Application is sloppy and incomplete.

- **AMS Response** – Plan Approval applications are technical in nature, and are subject to subsequent technical discussions between AMS staff and the applicant. The initial Plan Approval application for the CHP Project, as received by AMS, was no worse than other Plan Approval applications that have been submitted by applicants for other similar sources.

As is AMS's practice, AMS sought clarification from SEPTA for questions that arose during the review of the Plan Approval Application, and otherwise

requested any corrections, or supplementation of the initial Plan Approval Application as necessary. All missing or incomplete portions of the Plan Approval Application, as required for AMS's review, were supplemented by SEPTA, and otherwise considered in revising the proposed Plan Approval. Complete versions of these materials can be found online at <http://www.phila.gov/health/AirManagement/PublicMeetings.html> under the 05-20-2017 and 11-30-2017 notices.