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

Title V Operation Permit (TVOP) OP22-000013

Constellation Energy Generation, LLC
Southwark Generating Station
2501 S. Delaware Avenue, Philadelphia, PA 19148

AMS Response Document to Written Comments Received on the Draft TVOP OP22-000013

Prepared By:

AMS
7801 Essington Avenue
Philadelphia, PA 19153

7/12/2024

PART I: PROJECT BACKGROUND

Constellation Energy Generation, LLC submitted renewal TVOP application (OP22-000013) on February 21, 2022. The application was deemed administrative complete on March 16, 2022.

The Title V facility's air emissions sources include four (4) 233 million British thermal unit per hour combustion turbines firing No. 2 fuel oil or kerosene.

A notice of intent to issue the draft TVOP was published in the Pennsylvania Bulletin on June 17, 2023. (See 53 Pa. B 3204.) The 30-day public comment period on the draft TVOP began to run from the publication date. During the 30-day public comment period, AMS received written comments from the public. The list of commenters is provided in Attachment A of this response document. AMS did not receive any requests for a public hearing during the 30-day comment period.

PART II: SUMMARIES OF COMMENTS AND AMS RESPONSE TO COMMENTS MADE DURING THE 30-DAY COMMENT PERIOD

Note: AMS received written comments during the 30-day public comment period. The written comments 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 copy of all written comments that were received from Commenters in Attachment A and considered by AMS can also be found at https://www.phila.gov/departments/air-pollution-control-board/air-management-notices/.

Comment 1: Fifty-four (54) commenters expressed concern about nitrogen oxide (NOx) emissions, due to the potential for NOx to form ground-level ozone and the facility's location in an environmental justice area. Commenters noted that the draft TVOP only requires that one turbine be tested for NOx emissions every five (5) years, with each turbine being tested at most every twenty (20) years. Commenters specifically stated that the testing requirements do not meet federal standards in 40 CFR §63.7540 and requested that each turbine be inspected for NOx emissions every five (5) years.

AMS Response to Comment 1:
AMS shares the commenters' concerns about minimizing NOx emissions from the facility. The combustion turbines are subject to a 5% capacity factor limit, which means that each turbine is permitted to operate for at most 438 hours per year. In the previous five (5) years, no turbine at the facility has operated for more than fifty (50) hours in a single year, and the average turbine has operated for less than seventeen (17) hours per year. A typical performance test (also known as a stack test) for measurement of NOx emissions requires a turbine to operate for five (5) to twelve (12) hours. Therefore, the introduction of additional testing requirements could cause additional emissions comparable to an entire year's worth of emissions from the turbine being tested. The four (4) turbines are identical, and the Permittee operates identical turbines at other generating stations. The table below list recent stack tests results from AMS's database for other

combustion turbines located at other Constellation's facilities in Philadelphia. The data shows minimal variations in NOx emissions over time and between turbines of the same model.

Site	Source Description	Date of Stack Test	Fuel Type During Testing	NOx Emission Factor
Constellation, Richmond	CU-91, Combustion Turbine, GE, 838 MMBTU/hr	5/23/2023	No. 2 Oil	0.56 lbs/MMBTU
Constellation, Richmond	CU-92,Combustion Turbine, 838 MMBTU/hr	5/23/2023	No. 2 Oil	0.58 lbs/MMBTU
Constellation, Richmond	CU-91, Combustion Turbine, 838 MMBTU/hr	12/12/2018	No. 2 Oil	0.55 lbs/MMBTU
Constellation, Richmond	CU-92, Combustion Turbine, 838 MMBTU/hr	12/13/2018	No. 2 Oil	0.61 lbs/MMBTU
Constellation, Delaware	CU-09, Combustion Turbine, Pratt Whitney 284 MMBTU/hr	8/21/2019	No. 2 Oil	0.64 lbs/MMBTU
Constellation, Delaware	CU-12, Combustion Turbine, Pratt Whitney, 233 MMBTU/hr	8/22/2019	No. 2 Oil	0.60 lbs/MMBTU

Section VII.2 of EPA's Stack Testing Guidance (2009)[1] states that stack test waivers may be appropriate on a case-by-case basis when various criteria are met. The criteria include the following:

(1) the units are located at the same facility;
(2) the units are produced by the same manufacturer, have the same model number or other manufacturer's designation in common, and have the same rated capacity and operating specifications;
(3) the units are operated and maintained in a similar manner; and
(4) the delegated agency, based on documentation submitted by the facility, (a) determines that the margin of compliance for the identical units tested is significant and can be maintained on an on-going basis; or (b) determines based on a review of sufficient emissions data that, though the margin of compliance is not substantial, other factors allow for the determination that the variability of emissions for identical tested units is low enough for confidence that the untested unit will be in compliance.

AMS believes that the Permittee meets the EPA criteria for granting a waiver of the 5-year testing requirement. However, to address public concerns, AMS has updated the initial testing requirements in the TVOP to require that each turbine be tested once prior to 2030 to establish

[1] www.epa.gov/sites/default/files/2013-09/documents/stacktesting_1.pdf

baseline emission rates. Following the initial tests, AMS will require the Permittee to test one turbine every five years, alternating turbines such that each turbine is tested within the required timeframe. AMS deems this testing requirement an appropriate balance between the need for accurate NOx emission data and the need to minimize operating time. This testing requirement is also in accordance with EPA's Stack Testing Guidance for Stack Waivers laid out above.

Finally, 40 CFR §63.7540 does not apply to combustion turbines. Combustion turbines are not considered boilers or process heaters; therefore, the turbines are not applicable to the testing requirements of 40 CFR 63 Subpart DDDDD. The testing schedule established by AMS complies with all applicable state and federal regulations.

Comment 2: Fifty-four (54) commenters expressed concerns that the facility turbines operate when staff are not onsite and requested that personnel be present whenever the plant is operating.

AMS Response to Comment 2:
Regarding the concern about unattended operation, the Permittee provided additional information about its remote monitoring procedures. Whenever the turbines at Southwark Generating Station are operating, on-site operators at other locations monitor data from the Southwark turbines, including the fuel flow rate, the power produced, and the temperature differential across multiple locations in the exhaust stream to ensure proper combustion. If any parameters are found to be outside of an acceptable range, an alarm sounds, operators evaluate corrective actions, and the turbines can be remotely shut down if needed. If certain parameters are outside of safe operating ranges, then the turbines will be shut down automatically. AMS believes that this operating procedure is sufficient to carry out the monitoring requirements applicable to the facility and that on-site personnel are not necessary to meaningfully protect the public health and the environment.

Comment 3: One (1) commenter objected to the burning of diesel fuel to generate electricity and requested that the government pass laws forbidding this practice and provide money to support the installation of solar and wind generating units.

AMS Response to Comment 3: For clarification, the turbines burn No. 2 oil or kerosene. The turbines do not burn diesel fuel. The passage of new laws regarding fuel sources and the distribution of funds for new installations are outside the scope of this TVOP review. Currently there are no federal, state, or local air regulations that prohibit burning diesel fuel to generate electricity. The commenter is encouraged to bring their concerns to the Philadelphia Air Pollution Control Board, whose meetings are open to the public. Further information is available at https://www.phila.gov/departments/air-pollution-control-board/.

ATTACHMENT A: LIST OF COMMENTERS

Commenter No.	Commenter Name /Organization	* Contact Info	City, State and Zip code
1	Russell Zerbo	[redacted]	Philadelphia, PA 19103
2	Joanna Ward	[redacted]	Philadelphia, PA 19106
3	Logan Welde	[redacted]	Philadelphia, PA 19122
4	Anna Tangi	[redacted]	Philadelphia, PA 19148
5	Rozalyn Landisburg	[redacted]	Philadelphia, PA 19147
6	Fern Hagedorn	[redacted]	Philadelphia, PA 19145
7	Jill Turco	[redacted]	Philadelphia, PA 19146
8	Peter Furcht	[redacted]	Philadelphia, PA 19107
9	Margaret Zhang	[redacted]	Philadelphia, PA 19147
10	Paul Hagedorn	[redacted]	Philadelphia, PA 19145
11	Susan Saltzman	[redacted]	Philadelphia, PA 19102
12	Jo C	[redacted]	Philadelphia, PA 19145
13	Susan Babbitt	[redacted]	Philadelphia, PA 19107
14	Megan LeCluyse	[redacted]	Philadelphia, PA 19147
15	Bill Weigle	[redacted]	Philadelphia, PA 19107
16	Amy Braden	[redacted]	Philadelphia, PA 19103
17	Anne Brennan	[redacted]	Philadelphia, PA 19103
18	Cody Cowper	[redacted]	Philadelphia, PA 19107
19	Mary Yee	[redacted]	Philadelphia, PA 19143
20	David Szczepanik	[redacted]	Philadelphia, PA 19146

21	Donald Stevens	[redacted]	Philadelphia, PA 19143
22	Loretta Dunne	[redacted]	Philadelphia, PA 19103
23	Mary Ellen Didier	[redacted]	Philadelphia, PA 19130
24	Bonnie Eisenfeld	[redacted]	Philadelphia, PA 19103
25	Jeffrey Rockwell	[redacted]	Philadelphia, PA 19107
26	Carolyn Marvin	[redacted]	Philadelphia, PA 19107
27	Mark Henry	[redacted]	Philadelphia, PA 19130
28	Felicia Lewis	[redacted]	Philadelphia, PA 19103
29	Mary Ann Leitch	[redacted]	Philadelphia, PA 19147
30	Carla Puppin	[redacted]	Philadelphia, PA 19147
31	Claudia Crane	[redacted]	Philadelphia, PA 19130
32	Daniel Safer	[redacted]	Philadelphia, PA 19104
33	Linda Blythe	[redacted]	Philadelphia, PA 19104
34	Irving Horton	[redacted]	Philadelphia, PA 19153
35	Elowyn Corby	[redacted]	Philadelphia, PA 19146
36	Michelle Hughes	[redacted]	Philadelphia, PA 19146
37	Peter Amato	[redacted]	Philadelphia, PA 19143
38	Carl Gershenson	[redacted]	Philadelphia, PA 19146
39	elizabeth lutes	[redacted]	Philadelphia, PA 19148
40	David Gibson	[redacted]	Philadelphia, PA 19148
41	Joanne Kundrat	[redacted]	Philadelphia, PA 19123
42	Marina Linderman	[redacted]	Philadelphia, PA 19125
43	Allison Rametta	[redacted]	

44	sid amster	[redacted]	Philadelphia, PA 19102
45	Sheila Siegl	[redacted]	Philadelphia, PA 19106
46	Roberta Camp	[redacted]	Philadelphia, PA 19147
47	Elaine Fultz	[redacted]	Philadelphia, PA 19143
48	Susanna Martin	[redacted]	Philadelphia, PA 19143
49	Nathaniel Stevens	[redacted]	Philadelphia, PA 19143
50	Vincent Prudente	[redacted]	Philadelphia, PA 19146
51	Alex Bomstein	[redacted]	Philadelphia, PA 19147
52	Amy Page	[redacted]	Philadelphia, PA 19106
53	Robert Cohen	[redacted]	Philadelphia, PA 19130
54	Spencer Koelle	[redacted]	Philadelphia, PA 19145
* Contact information has been redacted by AMS			

ATTACHMENT B: COMMENTS RECEIVED

Comment Submitted by 49 Commenters

Peter Amato, Sid Amster, Susan Babbitt, Linda Blythe, Amy Braden, Anne Brennan, Roberta Camp, Jo C, Corby Cowper, Claudia Crane, Cody Elowyn, Mary Ellen Didier, Bonnie Eisenfeld, Loretta Dunne, Elaine Fultz, Peter Furcht, Carl Gershenson, David Gibson, Fern Hagedorn, Paul Hagedorn, Mark Henry, Irving Horton, Michelle Hughes, Joanne Kundrat, Rozalyn Landisburg, Megan LeCluyse, Mary Ann Leitch, Felicia Lewis, Marina Linderman, Elizabeth Lutes, Carolyn Marvin, Susanna Martin, Carla Puppin, Vincent Prudente, Allison Rametta, Jeffrey Rockwell, Daniel Safer, Susan Sheila Siegl, Donald Stevens, Nathaniel Stevens Saltzman Szczepanik, Anna Tangi, Joanna Ward, Logan Welde, Jill Turco Bill Weigle, Mary Yee, and Margaret Zhang.

I am concerned about Constellation Energy's air pollution permit renewal application for its Southwark Generating Station at 2501 S Delaware Ave in Philadelphia. This station burns No. 2 fuel oil and kerosene during times of high electricity demand and has incredibly minimal air pollution limits.

Within 1 mile of the facility 34% of the population are people of color and 43% of residents live under the federal poverty line. These population statistics qualify this area as an Environmental Justice (EJ) area under the Pennsylvania Department of Environmental Protection's (DEP) current guidelines. The plant's four combustion engines, built in 1967 and 1968, are only required to test for nitrogen oxide (NOx) emissions every 20 years according to the proposed permit renewal, with one engine being inspected every 5 years. NOx pollution reacts in heat to form asthma-causing ground-level-ozone (smog) and Philadelphia currently fails to meet the national health standards for ozone. This is particularly concerning because extreme heat increases electricity demand. During the exact times this plant is intended to operate, high temperatures would bake the facility's NOx pollution into smog. Furthermore, only testing each engine every 20 years for NOx pollution is likely to result in decades of unintended, unmonitored air pollution. This also conflicts with federal standards (40 CFR § 63.7540) that require limited-use boilers to be inspected every five years. At the absolute bare minimum, Air Management Services (AMS) should require each boiler to be inspected for NOx emissions at least every 5 years to align with federal standards.

Additionally, Constellation claims that staff are typically not onsite when the plant is operating and are therefore unable to monitor its air pollution. This is completely inappropriate. Personnel should be required to be present when this plant is operating to ensure that all equipment is properly functioning. This plant will likely be operating on days with extreme heat where air quality is already of great concern.

Please increase inspection requirements at the Southwark Generating Station.

Boiler Plate Comment Variation 1 Submitted by one (1) Commenter

Alex Bomstein

I am a resident of South Philly who is concerned about Constellation Energy's air pollution permit renewal application for its Southwark Generating Station at 2501 S Delaware Ave in Philadelphia. This station burns No. 2 fuel oil and kerosene during times of high electricity demand and has incredibly minimal air pollution limits.

Within 1 mile of the facility 34% of the population are people of color and 43% of residents live under the federal poverty line. These population statistics qualify this area as an Environmental Justice (EJ) area under the Pennsylvania Department of Environmental Protection's (DEP) current guidelines. The plant's four combustion engines, built in 1967 and 1968, are only required to test for nitrogen oxide (NOx) emissions every 20 years according to the proposed permit renewal, with one engine being inspected every 5 years. NOx pollution reacts in heat to form asthma-causing ground-level-ozone (smog) and Philadelphia currently fails to meet the national health standards for ozone. This is particularly concerning because extreme heat increases electricity demand. During the exact times this plant is intended to operate, high temperatures would bake the facility's NOx pollution into smog. Furthermore, only testing each engine every 20 years for NOx pollution is likely to result in decades of unintended, unmonitored air pollution. This also conflicts with federal standards (40 CFR § 63.7540) that require limited-use boilers to be inspected every five years. At the absolute bare minimum, Air Management Services (AMS) should require each boiler to be inspected for NOx emissions at least every 5 years to align with federal standards.

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Please increase inspection requirements at the Southwark Generating Station.

Boiler Plate Comment Variation 2 Submitted by One (1) Commenter

Amy Page

I am concerned about Constellation Energy's air pollution permit renewal application for its Southwark Generating Station at 2501 S Delaware Ave in Philadelphia. This station burns No. 2 fuel oil and kerosene during times of high electricity demand and has incredibly minimal air pollution limits. OF COURSE CONSTELLATION ENERGY IS CONTROLLED BY WHITE MEN (I'm white) WHO WILL NEVER MAKE HUMAN SAFETY AND HEALTH A PRIORITY BECAUSE PROFIT IS THE ONLY

"VALUE" WHITE MEN HAVE!! NEVER TRUST WHITE MEN AS THEY ARE A PLAGUE, A CURSE, A SCOURGE ON PLANET EARTH!!

Within 1 mile of the facility 34% of the population are people of color and 43% of residents live under the federal poverty line. These population statistics qualify this area as an Environmental Justice (EJ) area under the Pennsylvania Department of Environmental Protection's (DEP) current guidelines. The plant's four combustion engines, built in 1967 and 1968, are only required to test for nitrogen oxide (NOx) emissions every 20 years according to the proposed permit renewal, with one engine being inspected every 5 years. NOx pollution reacts in heat to form asthma-causing ground-level-ozone (smog) and Philadelphia currently fails to meet the national health standards for ozone. This is particularly concerning because extreme heat increases electricity demand. During the exact times this plant is intended to operate, high temperatures would bake the facility's NOx pollution into smog. Furthermore, only testing each engine every 20 years for NOx pollution is likely to result in decades of unintended, unmonitored air pollution. This also conflicts with federal standards (40 CFR § 63.7540) that require limited-use boilers to be inspected every five years. At the absolute bare minimum, Air Management Services (AMS) should require each boiler to be inspected for NOx emissions at least every 5 years to align with federal standards.

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Please increase inspection requirements at the Southwark Generating Station.

Boiler Plate Comment Variation 3 Submitted by One (1) Commenter

Robert Cohen

I am concerned about Constellation Energy's air pollution permit renewal application for its Southwark Generating Station at 2501 S Delaware Ave in Philadelphia. This station burns No. 2 fuel oil and kerosene during times of high electricity demand and has incredibly minimal air pollution limits.

Within 1 mile of the facility 34% of the population are people of color and 43% of residents live under the federal poverty line. These population statistics qualify this area as an Environmental Justice (EJ) area under the Pennsylvania Department of Environmental Protection's (DEP) current guidelines. The plant's four combustion engines, built in 1967 and 1968, are only required to test for nitrogen oxide (NOx) emissions every 20 years according to the proposed permit renewal, with one engine being inspected every 5 years. NOx pollution reacts in heat to form asthma-causing ground-level-ozone (smog) and Philadelphia currently fails to meet the national health standards for ozone. This is particularly concerning because extreme heat increases electricity demand. During the exact times this plant is intended to operate, high temperatures would bake the facility's NOx pollution into smog. Furthermore, only testing each engine every 20 years for NOx pollution is likely to result in decades of unintended, unmonitored air pollution. This also conflicts with federal standards (40 CFR § 63.7540) that require limited-use boilers to be

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Additionally, Constellation claims that staff are typically not onsite when the plant is operating and are therefore unable to monitor its air pollution. This is completely inappropriate. Personnel should be required to be present when this plant is operating to ensure that all equipment is properly functioning. This plant will likely be operating on days with extreme heat swhere air quality is already of great concern. Please increase inspection requirements at the Southwark Generating Station.

MORE THAN THAT - WHY are we allowing the burning of diesel fuel to generate electricity to continue AT ALL???? In MY opinion - this is literally CRIMINAL! My wife has COPD. To say the least - I OBJECT. The ONLY way to stop this is by passing laws forbidding this kind of practice. Along with such laws, money needs to be provided by the government to greatly INCREASE the installation of clean solar and wind generating units.

Boiler Plate Comment Variation 4 Submitted by One (1) Commenter

Spencer Koelle

I am concerned about Constellation Energy’s air pollution permit renewal application for its Southwark Generating Station at 2501 S Delaware Ave in Philadelphia. This station burns No. 2 fuel oil and kerosene during times of high electricity demand and has incredibly minimal air pollution limits.

We don't want any more orange skies.

Additionally, Constellation claims that staff are typically not onsite when the plant is operating and are therefore unable to monitor its air pollution. This is completely inappropriate. Personnel should be required to be present when this plant is operating to ensure that all equipment is properly functioning. This plant will likely be operating on days with extreme heat where air quality is already of great concern.

Please increase inspection requirements at the Southwark Generating Station.