

CITY OF PHILADELPHIA
Department of Public Health
Public Health Services
Air Management Services

MEMO

TO Kassahun Sellassie, Program Director

FROM Maryjoy Ulatowski, Chief of Source Registration



THRU N/A

DATE November 3, 2023

RE PES – Tank Farm
Title V Operating Permit No. OP21-000064
Philadelphia, Philadelphia County

Procedural History

As part of the RACT regulations codified at 25 Pa. Code §§ 129.111—129.115 (relating to additional RACT requirements for major sources of NO_x and VOCs for the 2015 ozone NAAQS) (RACT III), PA DEP has established a method under § 129.114(i) (relating to alternative RACT proposal and petition for alternative compliance schedule) for an applicant to demonstrate that the alternative RACT compliance requirements incorporated under § 129.99 (relating to alternative RACT proposal and petition for alternative compliance schedule) (RACT II) that are currently in force in the applicable operating permit continue to be RACT under RACT III.

The procedures to demonstrate that RACT II equals RACT III are specified in § 129.114(i)(1)(i), 129.114(i)(1)(ii) and 129.114(i)(2), that is, subsection (i), paragraphs (1) and (2). An applicant may submit an analysis, certified by the responsible official, that the RACT II permit requirements remain RACT for RACT III by following the procedures established under subsection (i), paragraphs (1) and (2). Paragraph (1) establishes cost-effectiveness thresholds of \$7,500 per ton of NO_x emissions reduced and \$12,000 per ton of VOC emissions reduced as “screening level values” to determine the amount of analysis and due diligence that the applicant shall perform if there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis. Paragraph (1) has two subparagraphs.

Subparagraph (i) under paragraph (1) specifies that the applicant that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department (or appropriate approved local air pollution control

agency) under § 129.99(e) had a cost effectiveness equal to or greater than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

- A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.
- A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously evaluated under RACT II.
- A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique in the previous bullet and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II.
- A statement that an evaluation of each economic feasibility analysis summarized in the previous bullet demonstrates that the cost effectiveness remains equal to or greater than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced.

Subparagraph (ii) under paragraph (1) specifies that the applicant that evaluates and determines that there is no new pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis and that each technically feasible air cleaning device, air pollution control technology or technique evaluated for the alternative RACT requirement or RACT emission limitation approved by the Department (or appropriate approved local air pollution control agency) under § 129.99(e) had a cost effectiveness less than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced shall include the following information in the analysis:

- A statement that explains how the owner or operator determined that there is no new pollutant specific air cleaning device, air pollution control technology or technique available.
- A list of the technically feasible air cleaning devices, air pollution control technologies or techniques previously evaluated under RACT II.
- A summary of the economic feasibility analysis performed for each technically feasible air cleaning device, air pollution control technology or technique in the previous bullet and the cost effectiveness of each technically feasible air cleaning device, air pollution control technology or technique as submitted previously under RACT II.
- A statement that an evaluation of each economic feasibility analysis summarized in the previous bullet demonstrates that the cost effectiveness remains less than \$7,500 per ton of NO_x emissions reduced or \$12,000 per ton of VOC emissions reduced.
- A new economic feasibility analysis for each technically feasible air cleaning device, air pollution control technology or technique.

Paragraph (2) establishes the procedures that the applicant that evaluates and determines that there is a new or upgraded pollutant specific air cleaning device, air pollution control technology or technique available at the time of submittal of the analysis shall follow.

- Perform a technical feasibility analysis and an economic feasibility analysis in accordance with § 129.92(b) (relating to RACT proposal requirements).
- Submit that analysis to the Department (or appropriate approved local air pollution control agency) for review and approval.

The applicant shall also provide additional information requested by the Department (or appropriate approved local air pollution control agency) that may be necessary for the evaluation of the analysis submitted under § 129.114(i).

- A brief description of the facility and the sources being evaluated under § 129.114(i)(1)(i), 129.114(i)(1)(ii) and 129.114(i)(2). Mention which source is being evaluated under which provision.
- The date the applicant submitted the RACT II equals RACT III proposal.
- Whether the facility is major for NO_x and/or VOC.
- Mention the last date the facility received a full compliance evaluation.
- Describe here any violations present at the facility.

Facility Information

Philadelphia Energy Solutions Refining and Marketing LLC (PES) Schuylkill River Tank Farm (SRTF) is part of a former petroleum refinery at 3144 Passyunk Avenue, Philadelphia, PA 19145. The refining processes were shut down and demolished after an explosion in 2019. PES – Tank Farm is not currently operating, although PES is continuing to maintain the Title V operating permit for the facility. While the Refinery and Tank Farm have always had a different AMS Plant IDs and Title V operating permits, they were historically considered one facility for NSR/PSD and Title V applicability as well as previous versions of RACT. Since the shutdown of the refining processes at the Former Refinery and a change to its SIC Code, they are no longer considered the same facility for NSR/PSD and Title V and are considered separate facilities for RACT III.

PES submitted the RACT II equals RACT III proposal on December 16, 2022, as part of their RACT III notification.

The facility is a major source for VOC, a minor source for NO_x.

The most recent full compliance evaluation for the facility was on September 7, 2021. There are currently no outstanding violations.

RACT III Analysis for NO_x and VOC applicability

Source ID	Source Name	New source or change to existing source?	NO _x (tpy)	VOC (tpy)
P-130 (GP)	Barge Loading – Girard Point Wharf	No	0	13.9 (non-gasoline)
P-636 (PB)	Barge Loading – Point Breeze Wharf	No	0	25.99

TOTAL FACILITY PTE	38	>50
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Summary of RACT requirements for each source

The following conditions were 2008 VOC RACT for Marine Loading Operations:

- Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of 4 psi or greater shall vent to a Thermal Oxidizer with a VOC destruction efficiency of at least 98% or control to an outlet of 20 ppmv VOC or less. The Thermal Oxidizer shall have a continuous temperature monitor and recorder. VOC emissions from Girard Point Barge Loading of VOC materials with a Reid Vapor Pressure of less than 4 psi shall not exceed 13.9 tons per rolling 12-month period.
- Point Breeze Marine Barge Loading shall not load any VOC materials with a Reid Vapor Pressure of 4 psi or greater. VOC emissions from Point Breeze Marine Barge Loading shall not exceed 25.99 tons per rolling 12-month period.

RACT II continues to be RACT for RACT III and therefore these requirements are not changing.

RACT II as RACT III

- Searches of the RACT/BACT/LAER Clearinghouse by PES and AMS did not locate any new control options.

Source ID	Source Name	Control	NOx (\$/Ton)	VOC (\$/Ton)
P-130 (GP)	Barge Loading – Girard Point Wharf	Thermal Oxidizer ^a	N/A	\$80,699
P-130 (GP)	Barge Loading – Girard Point Wharf	Flare	N/A	\$46,491
P-130 (GP)	Barge Loading – Girard Point Wharf	Adsorption	N/A	\$41,340
P-636 (PB)	Barge Loading – Point Breeze Wharf	Thermal Oxidizer	N/A	\$16,666
P-636 (PB)	Barge Loading – Point Breeze Wharf	Flare	N/A	\$13,834
P-636 (PB)	Barge Loading – Point Breeze Wharf	Adsorption	N/A	\$10,692
P-636 (PB)	Barge Loading – Point Breeze Wharf	Condenser	N/A	\$29,069

^aBarge Loading – Girard Point Wharf has a Thermal Oxidizer that controls VOC emissions from the loading of materials with a RVP of greater than 4.0. The evaluation is for using the Thermal Oxidizer to control the loading of materials with a RVP of less than 4.0.

- o If the provisions of § 129.114(i)(2) are being used, please incorporate the case by case analysis template from the RACT III review memo template.

Source ID	Source Name	Control	NOx (\$/Ton)	VOC (\$/Ton)
P-636 (PB)	Barge Loading – Point Breeze Wharf	Adsorption	N/A	\$13,595

Adsorption is still economically unreasonable for P-636

AMS has reviewed source information, control technologies or measures evaluated by PES, and cost analysis performed by PES. AMS also performed an independent analysis which included, AMS’s continuous review of permit applications since the applicability date of RACT II, internet searches, BACT/RACT/LAER Clearinghouse search, knowledge gained from the AMS permitting staff participating in technical presentations by several vendors and manufacturers of pollution control technology, and a review of EPA and MARAMA’s documents. Based on our review of these documents, along with training and the expertise of the reviewing staff, AMS concludes that there are no new or updated air pollution control technologies available for the sources found at PES – Tank Farm and determines that RACT II requirements for source P-103 and P-636 at PES Tank Farm listed in the table assure compliance with requirement for RACT III for the § 129.111 - § 129.115.

Comparison between RACT II and RACT III requirements

Because RACT II requirements are being certified as continuing to be RACT, RACT III requirements are identical to RACT II and therefore are as stringent as RACT II.

Public discussion

AMS requested a more cost effectiveness update from the facility for Barge Loading – Point Breeze Wharf for Adsorption. The facility submitted an update for all control options for the unit.