

MEMO

TO James Rebarchak  8/18/23
Regional Manager
Air Quality

FROM Paul Barnhart *PB* 7/25/2023
Engineering Specialist
Air Quality

THROUGH Janine Tulloch-Reid, PE [JET 8/10/2023](#)
Environmental Engineer Manager
Air Quality

DATE May 15, 2023

RE Global Advanced Metals USA Inc.
TVOP No. 46-00037
Douglass Township
Montgomery County

Colebrookdale Township
Berks 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 25 Pa. Code § 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).

25 Pa. Code § 129.114(i) 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. 25 Pa. Code § 129.114(i) paragraph (1) has two subparagraphs.

25 Pa. Code § 129.114(i) 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.

25 Pa. Code § 129.114(i) 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 25 Pa. Code § 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.

25 Pa. Code § 129.114(i) 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 25 Pa. Code§ 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 25 Pa. Code § 129.114(i).

Background

The Global Advanced Metals USA Inc. (GAM) is engaged in the production of tantalum metal products for use in the manufacture of electronic capacitors, semiconductors, and specialty products for the chemical, pharmaceutical, aerospace, energy, and ballistic industries. The facility is located in Montgomery and Berks County and is not within an Environmental Justice (EJ) area according to the PA DEP's EJ viewer.

Tantalum metal is produced by digesting metal ores with hydrofluoric acid (HF), and/or deionized water. The process produces potassium tantalum fluoride (KTaF), a metal salt, for further processing on-site or shipment to other facilities. The additional on-site processing reduces KTaF to produce tantalum powder products and tantalum metal mill products. The solvent used most at the facility is methyl isobutyl ketone (MIBK), which is a VOC and a HAP.

For the purpose of RACT III, GAM is major for VOC emissions only and operates under a PAL VOC limit of 241.7 tons per 12-month rolling total. DEP conducted a full compliance evaluation on September 21, 2021. No violations resulted from this inspection. The facility has been issued two Plan approvals (46-0037AD and 46-0037AE) since 2016 – neither Plan approval is a source of NO_x or VOC.

Pursuant to 25 Pa. Code § 129.115, GAM submitted a written notification (RACT II equals RACT III proposal) on December 19, 2022. The following sources were evaluated per 25 Pa. Code §129.114(i)(1)(i):

- Source 102 - Tantalum Salts Process (Building -19)
- Source 124 - Extraction Process (Building -74)
- Source 201 - Wastewater Treatment Plant
- Miscellaneous Source - Fugitive Emissions from Ethanol Storage and Transfer Associated with Building 47/101

GAM performed a search in the Clean Air Technology Center – RACT/BACT/LAER Clearinghouse. No new technologies were found in the results that were not already considered in GAM’s RACT II analysis. GAM provided Table 3-1 within the application listing all controls that were not technically feasible. Table 3-1 also provides the costs of technically feasible controls for the Wastewater Treatment Plant (Source 201). Each technically feasible control was determined to have a cost above \$12,000 per ton VOC. There is no change to the assessments for any of these technologies for RACT III as compared to RACT II.

Conclusion

Pursuant to 25 Pa. Code 129.114(j), the Department has reviewed source information, control technologies or measures evaluated by GAM. The Department also performed an independent analysis which included, the Department’s continuous review of permit applications since the applicability date of RACT II, internet searches, BACT/RACT/LAER Clearinghouse search, knowledge gained from the Department 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, the Department concludes that there are no new or updated air pollution control technologies available for the sources found at GAM and determines that RACT II requirements for sources 102, 124 201 and the Miscellaneous Source at GAM listed below assure compliance with requirement for RACT III for the § 129.111 - § 129.115.

Source 102 - Tantalum Salts Process (Building -19)

Source 124 - Extraction Process (Building -74)

Source 201 - Wastewater Treatment Plant

Miscellaneous Source - Fugitive Emissions from Ethanol Storage & Transfer (B47/101)

Public discussion

No discussion occurred with the EPA, the company, or the public which materially impacted DEP’s decision to include one or more sources under the RACT II is RACT III umbrella.

cc: Division of Permits – Central Office (Harrisburg)

File No. TVOP 46-00037