


MEMO

TO James D. Rebarchak  8/21/23
Regional Manager
Air Quality

FROM Robert A. Postell *RP* 5/8/2023
Permit Reviewer
Air Quality

THRU Janine Tulloch-Reid, PE JET 8/10/2023
Chief, Facilities Permitting Section
Air Quality

DATE May 8, 2023

RE Superior Tube Co Inc
Title V Operating Permit No. 46-00020
Lower Providence Township,
Montgomery 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). 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.

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 25 Pa. Code § 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 § 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.

Superior Tube Company Inc. (STCI) manufactures small-diameter, high-quality, fabricated metal tubing. The sources being evaluated under § 129.114(i) include: Flush/Blowout Booths (source IDs: 101 and 102), lubrication Spray Booths (Source IDs: 103 and 124) and Cleaning (Source IDs: 117, 125, 141 and 143) operations. The Facility operates under Title V Operating Permit (TVOP) No. 46-00020. All these sources are being evaluated under 25 Pa. Code § 129.114(i). Superior Tube submitted their RACT II equals RACT III proposal on December 20, 2022. The facility is major for VOC (sitewide permit limit 96.2 tpy) but is not major for NO_x (sitewide permit limit 79.2 tpy). The date the facility received its last full compliance evaluation was on December 2, 2020. As of May 8, 2023, there were no open violations at this facility.

The following is an explanation of the applicable RACT III regulation requirements:

In accordance with 25 Pa. Code 129.114(i)(1)(A):

Superior Tube reviewed entries in the Reasonably Available Control Technology/Best Available Control Technology/Lowest Achievable Emissions Rate (RACT/BACT/LAER) Clearinghouse (RBLC) to determine if new technologies were applicable to these sources. No new technically feasible technologies were discovered.

In accordance with 25 Pa. Code 129.114(i)(1)(B):

Under RACT II Superior Tube evaluated the following technically feasible air cleaning devices or techniques for Source IDs 101, 102, 103 and 125:

- 1) Regenerative Thermal Oxidizer (RTO) with an Acid Gas Scrubber and
- 2) Good Operating Practices.

For Sources IDs 117, 124, 141 and 142 only *Good Operating Practices* were evaluated.

In accordance with 25 Pa. Code 129.114(i)(1)(C & D):

Superior Tube stated that the economic feasibility for the RTO was \$27,381/ton of VOC removed. This is the same value presented in Superior Tube's RACT II application. This analysis assumes that a combined system would capture and collect multiple emissions from Sources: 101, 102, 103 and 125.

Superior Tube stated that the RTO, for Sources 101, 102, 103, and 125, had [remains equal to] a cost effectiveness greater than \$12,000 per ton of VOC removed.

No analysis was performed for *Good Operating Practices* because it is the technique already being employed for Sources 117, 124, 141 and 142.

RACT III Analysis for NO_x and VOC applicability

The following table is a copy from the RACT II review memo showing the facility's VOC Potential to Emit (PTE). STCI submitted the significant operating permit application to address the Alternate VOC RACT analysis as per 25 Pa. Code § 129.99 for the Sources in Table 1. The air contamination sources in question were in operation prior to October 24, 2016 and have not been modified or changed since October 24, 2016.

Table 1. Sources Subject to Case-by-Case Analysis

Source #	Source Name	RACT I Limits (TPY)	Potential to emit ²	2015 Actual emissions	2016 Actual emissions
101	FLUSH/BLOWOUT BOOTH #1603	7.2	11.2	7.5	
102	FLUSH/BLOWOUT BOOTH 1960	4.1	6.1	0.2	
103	LUBRIC. SPRAY BOOTH #6779	5.7	15	3.3	
117	SOLVENT CLEANER TANK #6836	2.9	6.6	2.9	
124	LUBRICATION SPRAY BOOTH #1976		6.9	0.3	
125	GENERAL SOURCE FUG EMIS ¹	13.9	13.8	4.8	
141	SOLVENT CLEANER TANK #6172 ¹			2.54	
142	SOLVENT CLEANING TANK #6169 ¹			0.4	

¹ The limit includes the sources 125, 141, and 142. Source 125 consists of SuperKote #1678, Lab use, General Use nPb, IPA tanks (Sources 141 and 142)

² These are emission limits in the current permit.

Summary of RACT requirements for each source

The following are the RACT II requirements from the RACT II review memo:

- In accordance with 25 Pa. Code § 129.100(d), STCI shall monitor and record the amount of solvent used.
- In accordance with 25 Pa. Code § 127.444, STCI shall conduct good operating practices through proper handling, storage, and disposal of the solvent.
- Respective conditions have been established in the permit at the respective sources.

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

RACT II as RACT III

The Department has reviewed source information, control technologies or measures evaluated by Superior Tube Co Inc. 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 Superior Tube Co Inc and determines that RACT II requirements for sources IDs: 101, 102, 103, 117, 124, 125, 141, and 142 at Superior Tube Co Inc listed in the table 1 assure compliance with requirement for RACT III for the § 129.111 - § 129.115.

The Department believes the analysis is sufficient.

STCI conducted the RACT II economic feasibility evaluation assuming an RTO with Acid Gas Scrubber would capture and collect emissions from the following sources: 101, 102, 103, and 125. A cost analysis was not performed for “Good Operating Practices”. A Summary of the RACT II economic analysis is given in Table 2.

Table 2. Summary of RACT II Economic Analysis

Source ID	Source Name	Control	NOx (\$/Ton)	VOC (\$/Ton)
101	FLUSH/BLOWOUT BOOTH #1603	RTO & Scrubber	NA	27,381
102	FLUSH/BLOWOUT BOOTH 1960			
103	LUBRIC. SPRAY BOOTH #6779			
125	GENERAL SOURCE FUG EMIS1			
101	FLUSH/BLOWOUT BOOTH #1603	Good operating practices	NA	NA
102	FLUSH/BLOWOUT BOOTH 1960			
103	LUBRIC. SPRAY BOOTH #6779			
117	SOLVENT CLEANER TANK #6836			
124	LUBRICATION SPRAY BOOTH #1976			
125	GENERAL SOURCE FUG EMIS1			
141	SOLVENT CLEANER TANK #6172			
142	SOLVENT CLEANING TANK #6169			

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.

RACT 2 equals R3 Review memo
Superior Tube Company Inc.

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: SERO, 46-00020
XXXXXX District