

NARRATIVE

TO: Jeng-Hon Su
FROM: Eddie Gomez
DATE: February 9, 2024

Facility Name: Tremco CPG Inc.
AIRS No.: 215-00183
Location: Columbus, GA (Muscogee County)
Application #: 28992
Date of Application: August 28, 2023

Background Information

Tremco CPG Inc. (hereinafter “facility”) is an expanded polystyrene concrete form manufacturing facility located at 4551 Cargo Drive, Columbus, Georgia 31907 (Muscogee County). Muscogee County is in attainment for all criteria pollutants. The facility was authorized to operate by synthetic minor (SM) permit No. 3086-215-0183-S-02-0, which was issued on October 8, 2009. The facility was authorized to install a new Molding Machine (M527), re-classify one of the facility’s boilers from a Superior 400 hp. boiler to a Cleaver Brooks 300 hp. boiler, and de-list four space heaters which were not initially installed by SM permit Amendment No. 3086-215-0183-S-02-1, which was issued on July 16, 2018.

The expanded polystyrene process consists of three main steps: pre-expansion, molding, and product storage. The polypropylene inserts are molded in injection molding machines. The majority of the volatile organic compound (VOC) emissions from the facility occur during the pre-expansion and molding of the polystyrene beads with pentane (used as the blowing agent) and product storage. A small amount of VOC is emitted from the polypropylene injection molding process (~1 ton per year).

Purpose of Application

On August 24, 2023, the facility submitted Application No. 28992 for the ownership change from ICForm Inc. to Tremco CPG Inc., the construction and operation of Boiler B41 and Expandable Polystyrene (EPS) Molding Press EP0.

Boiler B41 is a 12.25 MMBtu./hr. natural gas fired boiler which was constructed on March 1, 2022 and installed on August 1, 2022.

Updated Equipment List

Emission Units			Associated Control Devices	
Source Code	Description	Installation Date	Source Code	Description
PE1	Pre-expander Unit	2005	--	--
EP0	Alessio Hi Tech, PMSA EPS Molding Press	2024*	--	--
EP1	M521 Large EPS Molding Unit	2005	--	--
EP2	M522 Large EPS Molding Unit	2005	--	--
EP3	M523 Small EPS Molding Unit	2005	--	--
EP4	M524 Small EPS Molding Unit	2005	--	--
EP5	M525 Small EPS Molding Unit	2005	--	--
EP6	M526 Small EPS Molding Unit	2005	--	--
	8 – Injection Molding Unit	2005	--	--
M527	Molding Machine	2018	--	--

*Proposed within current application

Fuel Burning Equipment

Source Code	Input Heat Capacity (MMBtu/hr)	Description	Installation Date	Construction Date
B1	12.25	Cleaver Brooks 300 hp. Natural Gas fired	2005	2005
B41*	12.25	Cleaver Brooks Natural Gas fired	2022	2022

*Proposed within current application

Emissions Summary

The primary pollutant of concern emitted from the facility is VOC in the form of pentane (not a Hazardous Air Pollutant), which is used as a blowing agent in the expanded polystyrene process. A small amount of VOC is emitted from the polypropylene injection molding process (~1 ton per year). The two boilers emit up to 0.58 tons per year (tpy) VOC. The facility does not use any Hazardous Air Pollutant (HAP) containing materials. The facility has requested a synthetic minor limit for VOC emissions. Actual emissions were taken from actual 2023 facility emissions at the facility. Actual emissions were calculated based on the material throughput and a VOC (pentane) content of 5.5% (0% retention = 100% emitted).

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions			Actual Emissions		
	Before Mod.	After Mod.	Emissions Change	Before Mod.	After Mod.	Emissions Change
PM/PM ₁₀ /PM _{2.5}	0.4/0.4/0.4	0.8/0.8/0.8	0.4/0.4/0.4	0.4/0.4/0.4	0.8/0.8/0.8	0.4/0.4/0.4
NO _x	5.25	10.5	5.25	5.25	10.5	5.25
SO ₂	0.05	0.1	0.05	0.05	0.1	0.05
CO	4.4	8.8	4.4	4.4	8.8	4.4
VOC	<100	<100	0	58.6	59.2	0.6
Max. Individual HAP	0.1	0.2	0.1	0.1	0.2	0.1
Total HAP	0.1	0.2	0.1	0.1	0.2	0.1
Total GHG (if applicable)	6,280	12,600	6,320	6,280	12,600	6,320

Regulatory Applicability

Federal Rules:

40 CFR 60 Subpart A - *General Provisions*

Per 40 CFR 60.1(a), 40 CFR 60 Subpart A applies to any facility which is subject to another standard within 40 CFR 60. Because the facility is subject to a standard within 40 CFR 60, Subpart A applies.

40 CFR 60 Subpart Dc - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

Per 40 CFR 60.40(c)a, steam generating units which have been constructed, modified, or reconstructed after June 19, 1989 and have a heat input rating of less than 100 MMBtu/hr. but more than 10 MMBtu/hr. are subject to 40 CFR 60 Subpart Dc. Boiler B1 was constructed in 2005 and it has a heat input rating of 12.25 MMBtu/hr.; therefore, it is subject to this rule. As a boiler which only fires natural gas, boiler B1 is only subject to 40 CFR 60.48c(g)(2), which specifies the fuel consumption recordkeeping requirements. Boiler B41 was constructed in 2022 and it has a heat input rating of 12.25 MMBtu/hr.; therefore, it is subject to this rule. As a boiler which only fires natural gas, boiler B41 is also only subject to 40 CFR 60.48c(g)(2), which specifies the fuel consumption recordkeeping requirements.

40 CFR 63 Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants (NESHAP) for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

40 CFR 63 Subpart DDDDD applies to facilities which are a major source of HAP emissions. Because the facility is an area source of HAP emissions, this rule does not apply.

40 CFR 63 Subpart JJJJJ - NESHAP for Industrial, Commercial, and Institutional Boilers Area Sources

40 CFR 63 Subpart JJJJJ applies to facilities which are an area source of HAP emissions. Boilers B1 and B41 fire exclusively on natural gas; therefore, they meet the definition of a gas-fired boiler as defined in 40 CFR 63.11237. Per 40 CFR 63.11195(e), they are not subject to 40 CFR 63 Subpart JJJJJ.

40 CFR 63 Subpart OOOOO - NESHAP for Flexible Polyurethane Foam Production and Fabrication Area Sources.

The facility produces polystyrene foam, not polyurethane foam. Therefore, the facility does not meet the definition of *flexible polyurethane foam production and fabrication area* as defined in the NESHAP. The facility is not subject to the Area Source NESHAP.

Georgia State Rules

Georgia Rules for Air Quality Control (GRAQC) 391-3-1-.02(2)(b) – Visible Emissions

The process equipment at the facility generates visible emissions. Thus, they are subject to the visible emission limit (40 percent opacity) specified in Georgia Air Quality Control Rule 391-3-1-.02(2)(b) “Visible Emissions.” Nonetheless, the nature of pre-expansion and molding operations are expected to generate a minimal amount of visible emissions; therefore, the process equipment is expected to comply with Georgia Rule (b).

GRAQC 391-3-1-.02(2)(d) – Fuel Burning Equipment

Since the primary purpose of boilers B1 and B41 is production of thermal energy from the combustion of fuel (natural gas) with heat furnished indirectly through transfer by fluids and transmission through process walls (combustion exhaust passes as a gas and transfers heat to water through piping/vessel walls), the boilers meet the definition of “fuel-burning equipment” specified in GA Rule 391-3-1-.01(cc). Thus, both boilers are subject to GA Rule (d) for the visible emission limits and particulate matter (PM) emission standards. Since they burn natural gas, and natural gas is considered a clean fuel, compliance with the GA Rule (d) limits is expected.

GRAQC 391-3-1-.02(2)(e) – Particulate Emissions from Manufacturing Processes

All the process equipment is subject to PM emission limits specified in Georgia Air Quality Rule 391-3-1-.02(2)(e) “Particulate Emission from Manufacturing Processes.” Because the equipment was constructed after July 2, 1968, its allowable PM emission rates are specified by Georgia Rule 391-3-1-.02(2)(e)1.(i), which is stated as follows:

$E = 4.1 * P^{0.67}$ for process input weight rate up to and including 30 tons per hour.

$E = 55 * P^{0.11} - 40$ for process input weight rate above 30 tons per hour.

Where E equals the allowable PM emission rate in pounds per hour and P equals process input weight rate in tons per hour.

Because the nature of pre-expansion and molding operations are expected to generate a minimal amount of PM emissions, the process equipment at this facility is expected to comply with this rule.

GRAQC 391-3-1-.02(2)(g) – Sulfur Dioxide

Boilers B1 and B41 are subject to the fuel sulfur content limit specified in GA Rule (g). Since both boilers fire exclusively on natural gas, and natural gas contains minimum amounts of sulfur, compliance with the GA Rule (g) limit is expected for boilers B1 and B41.

GRAQC 391-3-1-.02(2)(rrr) – NO_x Emissions from small Fuel Burning Equipment

Georgia Rule 391-3-1-.02(2)(rrr) applies to facilities which are in select counties, this does not include Muscogee County. Therefore Georgia Rule (rrr) does not apply.

GRAQC 391-3-1-.02(2)(qqq) – VOC Emissions from Extruded Polystyrene Products Manufacturing Utilizing a Blowing Agent

The facility is not located in a county for which this state rule is applicable. Therefore, this rule does not apply.

Permit Conditions

Condition 2.1 limits emissions of VOC to less than 99 tpy. This allows the facility to be classified as a VOC synthetic minor source under Title V of the 1990 Clean Air Act Amendments (CAAA). Note that the two 12.25 MMBtu/hr. boilers will emit up to 0.58 tpy VOC. With the 99-tpy VOC cap for the manufacturing portion and 0.58 tpy VOC potential emissions from the boilers, the facility-wide VOC emissions will continue to be capped below 100 tpy. The facility must track all VOC actual emissions from the manufacturing processes in accordance with Conditions 7.1 through 7.4.

Condition 2.2 requires the facility to comply with all applicable portions of 40 CFR 60 Subparts A and Dc.

Condition 2.3 restricts visible emissions from process equipment to no more than 40 % opacity, per Georgia Rule (b).

Condition 2.4 restricts PM and visible emissions from boilers B1 and B41 based on MMBtu/hr. weight, per GA Rule (d) thresholds.

Condition 2.5 limits PM emissions from manufacturing equipment based on process input weight rate, per Georgia Rule (e).

Condition 2.6 restricts fuel-burning equipment at the facility to natural gas to comply with GA Rule (g). The fuel requirement is also needed to avoid being subject to 40 CFR 63 Subpart JJJJJ.

Condition 5.1 contains the Division's standard requirements for monitoring systems or devices.

If 0% pentane retention is not assumed when calculating VOC emissions, Condition 6.2 requires testing to be performed to determine the average pentane content.

Condition 7.1 requires that usage records for all VOC-containing materials be kept on a monthly basis for use in calculating monthly and 12 month rolling totals in Conditions 7.2 and 7.3.

Conditions 7.2 and 7.3 require the facility to calculate monthly and 12 month rolling total VOC emissions to enforce the synthetic minor VOC limit in Condition 2.1.

Condition 7.4 presents the equation to be used if the facility chooses to not assume a 0% pentane retention in the monthly VOC emissions estimates required by Condition 7.1.

Condition 7.5 includes the New Source Performance Standards (NSPS) Subpart Dc fuel consumption recordkeeping requirements specified in 40 CFR 60.48c(g)(2).

Toxic Impact Assessment

The facility indicated that no Toxic Air Pollutants (TAPs) are emitted from this facility. Therefore, a Toxic Impact Assessment (TIA) is not required.

Although emissions of TAPs from natural gas fired boilers are expected, the main TAPs have potential emissions below the associated minimum emission rates. Therefore, the Division agrees that no TIA is needed.

Summary & Recommendations

I recommend that Permit No. 3086-215-0183-S-03-0 be issued to Tremco CPG Inc. for the ownership change from ICForm Inc. to Tremco CPG Inc. and the construction and operation of Boiler B41 and EPS Molding Press EP0. A Public Advisory was not required for this application because potential emission increases due to the modification are lower than the associated cumulative modification permit exemption thresholds in GA Rule 391-3-1-.03(6)(i)3. The Stationary Source Compliance Program (SSCP) will remain responsible for compliance and inspection of the facility.

Addendum to Narrative

The 30-day public review started on month day, year and ended on month day, year. Comments were/were not received by the Division.

//If comments were received, state the commenter, the date the comments were received in the above paragraph. All explanations of any changes should be addressed below.//