

NARRATIVE

TO: Hamid Yavari

FROM: Mohamed Abdalla (M. A.)

DATE: April 18, 2022

Facility Name: **Owens Corning Roofing and Asphalt, LLC**
AIRS No.: 05100054
Location: Savannah, Georgia (Chatham County)
Application #: 28293
Date of Application: February 3, 2022

Background Information

Owens Corning Roofing and Asphalt, LLC (OCRA) owns and operates this asphalt roofing manufacturing plant under Synthetic Minor Operating Permit No. **2952-051-0054-S-02-0** issued on September 10, 2008.

Purpose of Application

Application No. 28293 is for the installation of a Surface Reclaim System (SRS) controlled by Dust Collector (SRS DC). The Surface Reclaim System (SRS) will be equipped with a 2,500 acfm Dust Collector (SRS DC) to control particulate matter (PM) emissions and is estimated to have three (3) material transfer points. In addition, the system's 0.5 MMBtu/hr, natural gas fired, dryer heater will emit nitrogen oxides (NOX), carbon monoxide (CO), sulfur dioxide (SO₂), Volatile Organic Compounds (VOC) and PM. A portion of Application No. 28293 reads as: *"At the Savannah Plant, during the manufacturing of shingles, the shingles are coated with asphalt and sand/granules are applied. The shingles are then sent through the cooling section, where the shingles are sprayed with water. The cooling section lowers the temperature of the shingles, and also knocks a small portion of the sand/granules off of the surface of the shingles. Water containing sand/granules is then sent through a cyclonic separator to remove the sand/granules. These wet sand/granules are then sent offsite for disposal. OCRA is proposing to enhance the current system by installing a surface reclaim system. The purpose of the reclaim system is to increase the reuse of sand/granular waste products and minimize waste and cleaning costs associated with the current system. The wet sand/granules mixture that exits the cyclonic separator, collected via a hopper, will be forklifted to the surface reclaim system's receiving tank and fed into a fluidized bed dryer. The dryer will utilize a 0.5 million British thermal units per hour (MMBtu/hr) natural gas heater and will also be controlled by a 2,500 actual cubic feet per minute (acfm) dust collector. A dried granules and sand mixture will exit the dryer and be further separated via a sand separator and transferred to a collection bin, which will allow OCRA to collect the material for reuse in the bulk granule handling system and mineral application system. OCRA will also collect the fine material collected by the dust collector for reuse by periodically transferring the fine material into a "fines" collection bin. The proposed surface reclaim system will be performed entirely indoors, except for the exhaust point of the system, which will vent outside of the building (the heater and dryer will share the same exhaust point)."*

Also, the company wishes to incorporate projects deferred from permitting under Georgia Rule 391-3-1-.03(10)(b)6.(i)(3), *Cumulative Modifications*. Namely:

Project	Application No. & Date
Installation of a Pneumatic transfer system	18579 November 18, 2008
upgrading the heating system for sealant Tank No. 7 and Laminator Storage tank No. 6.	19916 September 13, 2010
Install a shingle marking printing system to allow the plant to track production	21958 June 6, 2013
Limestone Filler Silo Replacement	26279 October 31, 2017
Ductwork Replacement to Dust Collector	26522 April 20, 2018
Asphalt Coater-Ductwork Replacement	26522 April 20, 2018
Replacement of the Fiber Bed Filter (1018C) with new Fiber Bed Filter (1035C).	26521 April 20, 2018
Polycarbonate Panel Installation in Asphalt Coater Area	26522 April 20, 2018
New dust collector to control emissions from Filler Tank No. 5 (1006)	26816 May 1, 2018
Line Paint Applicator	27547 May 28, 2020
IR Heaters	27670 August 10, 2020

Emissions Summary

The proposed Surface Reclaim System (SRS) will be entirely indoors, except for the exhaust point of the system, which will vent outside of the building. However, to conservatively calculate the emissions increase associated with the project, Owens Corning Roofing and Asphalt, LLC (OCRA) assumed all emission points emit to the atmosphere.

According to U.S. EPA Air Pollution Control Technology Fact Sheet (EPA-452/F-03-025), well designed and operated baghouses (dust collectors) have been shown to reduce emissions to less than 0.01 gr/dscf. OCRA assumed its new baghouse will conservatively emit 0.02 gr/dscf of filterable particulate. Also, OCRA utilized AP-42 emission factors for natural gas (Section 1.4 [7/98]) external combustion processes. Table 2 of Application No. 28293 estimates the annual emissions of the Surface Reclaim System (SRS) to be:

Table 2. Potential Annual Emissions										
Emission source	Potential Emissions (tpy)									
	NO _x	CO	PM	PM ₁₀	PM _{2.5}	SO ₂	VOC	Lead	Hexane	Total HAP
Surface Reclaim Dust Collector	--	--	1.61	1.80	1.80	--	--	--	--	8.04E-03
Surface Reclaim Mat Transfer	--	--	1.02E-02	3.75E-03	3.75E-03	--	--	--	--	5.11E-05
Surface Reclaim Dryer	0.21	0.18	0.00	0.02	0.02	1.29E-03	1.18E-02	1.07E-06	3.86E-03	4.1E-03
Total:	0.21	0.18	1.62	1.82	1.82	1.3E-03	0.01	1.07E-06	3.86E-03	1.21E-02

Also, Table 3 of Application No. 28293 (revised on April 4, 2022) estimates the following changes in potential emissions after addition emissions from the Surface Reclaim System (SRS) and incorporating emissions from sources added under Georgia Rule 391-3-1-.03(10)(b)6.(i)(3), *Cumulative Modifications*:

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}	69.60	71.90	2.3			
NO _x	21.40	22.37	0.97			
SO ₂	0.60	0.60	0			
CO	34.4	35.21	0.81			
VOC	65.1	66.46	1.36			
Max. Individual HAP	0.36	0.37	0.01			
Total HAP	2.20	2.22	0.02			
Total GHG (if applicable)						

Regulatory Applicability

Owens Corning Roofing and Asphalt, LLC (OCRA) – Savannah plant has equipment that is subject to 40 CFR 60 Subpart UU, *Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacturer*, which defines Asphalt roofing plant as “a plant which produces asphalt roofing products (shingles, roll roofing, siding, or saturated felt).” 40 CFR 60 Subpart UU, defines a “mineral handling and storage facility” as:

Mineral handling and storage facility means the areas in asphalt roofing plants in which minerals are unloaded from a carrier, the conveyor transfer points between the carrier and the storage silos, and the storage silos.

The new Surface Reclaim System (SRS) project does not include the process of unloading minerals from a carrier, the transfer points between the carrier and storage silos, or the operation of storage silos. Therefore, the proposed project is not subject to the requirements of NSPS Subpart UU.

OCRA said it believes that the facility may meet the definition of a mineral processing plant, as the facility will be processing sand and roofing granules. As such, OCRA believes the proposed dryer is subject to the requirements of 40 CFR 60 Subpart UUU, *Standards of Performance for Calciners and Dryers in Mineral Industries*. This is because the proposed project includes a fluid bed dryer that will be operated to remove free water from the sand/granule mixture byproduct of the cooling section. When the coated roofing shingles are sprayed with water in the cooling section, excess sand and roofing granules are knocked off and are collected in a receiving tank for the proposed fluid bed dryer. The reclaimed sand and roofing granules will then be reused in the roofing manufacturing line for the same intended purpose. OCRA consultant took the

position that “40 CFR 60.2 states affected facility means, with reference to a stationary source, any apparatus to which a standard is applicable.as any apparatus to which a standard is applicable. As such, the “facility” is this case would be the mineral processing operation (apparatus) at the Savannah plant rather than the Savannah plant as a whole. The material being processed through the dryer would predominantly be roofing granules with a small amount of industrial sand. Both roofing granules and industrial sand are minerals that are covered by the definition of “mineral processing plant”. Therefore, 100% of the material being dried is a covered mineral. Shingles are not being sent through the surface reclaim dryer.” Notwithstanding, 40 CFR 60 Subpart UUU, *Standards of Performance for Calciners and Dryers in Mineral Industries*, defines mineral processing plant (**not a facility**) as:

Mineral processing plant means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

Therefore, I do not believe the aforementioned definition applies to the subject Savannah asphalt roofing plant because its facilities are neither intended to process or produce “roofing granules” nor “industrial sand” or *their concentrates or any mixture of which the majority (>50 percent)*. Accordingly, I do not believe the dryer associated with new Surface Reclaim System (SRS) will be subject to 40 CFR 60 Subpart UUU. An April 4, 2022 e-mail from the company’s consultant stated “*the facility accepts [this] assessment regarding 40 CFR 60 Subpart UUU [applicability to] the surface reclaim dryer.*”

Permit Conditions

The enclosed permit amendment does not include new or modified permit conditions.

Updated Equipment List

Attachment A, *Facility Description*, has been updated (See the enclosed permit amendment).

Summary & Recommendations

A public advisory was issued for Application No. 28293. It expired on March 25, 2022.

I recommend issuing the enclosed Air Quality Permit Amendment **No. 2952-051-0054-S-02-1** to Owens Corning Roofing and Asphalt, LLC - Savannah plant.