REGION 4
ATLANTA, GA 30303

July 2, 2024

Mr. Steve Willis P.E.
Director Environment and Sustainability
Corporate Environmental Health and Safety Affairs
Dal-Tile
7834 CF Hawn Freeway
Dallas, Texas 75217-0130

Dear Ms. Willis:

This is in response to your letter dated December 8, 2023, to the U.S. Environmental Protection Agency (EPA) requesting an applicability determination (AD) for Title 40, Code of Federal Regulation (C.F.R.), Part 60, Subpart OOO — Standards of Performance for Nonmetallic Mineral Processing Plants, as it may apply to Dal-Tile's Monarch Ceramic Tile manufacturing plant (Plant) located at Florence Alabama. Based on the information provided by you and research conducted by the EPA, Subpart OOO applies to the ball mill and other affected facilities presented in the request. The details of our AD are explained in the remainder of this letter.

Overview of the Plant's Tile Manufacturing Process

The Plant manufactures porcelain and ceramic tiles using nonmetallic minerals: clay, feldspars, and sand. The raw materials are unloaded by rail car and conveyed to a raw material storage area. Emissions from the railcar unloading station are controlled by a baghouse. A front-end loader operation transfers the raw materials from the storage area to seven feed hoppers, where the discharge of the hoppers is conveyed to continuous operation ball mills which crush nonmetallic minerals in a 35 percent (%) water slurry. Milling slurry discharge (Slip) is pumped, rather than conveyed, into an underground slurry storage tank. Slip from the storage tank is pumped into spray dryers, dried, and then conveyed to storage bins by conveying systems. Material from the storage bin is conveyed by a conveying system to the tile presses, which presses the tiles into shape. The tiles are dried and then fired in kilns. All AD-subject equipment commenced construction, modification, or reconstruction on or after April 22, 2008.

Dal-Tile's Specific Questions Regarding Applicability of Subpart OOO

1. Because the ball mills are not connected by the named conveying systems, and there is no other crushing, is anything after the ball mill subject to OOO?

2. If there is, because the spray dryers produce a product, spray body, that we have sold separately, is anything after the spray dryers subject to OOO?
3. Because the only crushing is in the ball mill, which meets the definition of wet material processing, are any of the storage bins or conveyors before the ball mill subject to OOO?
4. Because the only crushing is in the ball mill, which meets the definition of wet material processing, is anything at the plant subject to OOO?

The EPA's Review of Subpart OOO

Under 40 C.F.R. § 60.670(a)(1), except as provided in paragraphs (a)(2), (b), (c), and (d) of 40 C.F.R. § 60.670, each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck loading station, or railcar loading station are affected facilities. Under 40 C.F.R. § 60.670(a)(2), the provisions of Subpart OOO do not apply to wet material processing operations (as defined in 40 C.F.R. § 60.671).

Under 40 C.F.R. § 60.671, *wet material processing operations* means any of the following:

(1) Wet screening operations (as defined in 40 C.F.R. § 60.671) and subsequent screening operations, bucket elevators and belt conveyors in the production line that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line; or

(2) Screening operations, bucket elevators and belt conveyors in the production line downstream of wet mining operations (as defined in 40 C.F.R. § 60.671) that process saturated materials (as defined in 40 C.F.R. § 60.671) up to the first crusher, grinding mill or storage bin in the production line.

Also, under 40 C.F.R. § 60.671:

- Wet screening operation means "… a screening operation at a nonmetallic mineral processing plant which removes unwanted material, or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water."
- Grinding mill means "… a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: Hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used."
- Saturated material means "… mineral material with sufficient surface moisture such that particulate matter emissions are not generated from processing of the material through screening operations, bucket elevators and belt conveyors."
- Belt conveyor means "… a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end."
- Capture system means "… the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more affected facilities to a control device."
- Control device means "… the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities at a nonmetallic

mineral processing plant."

- Conveying system means "… a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems."
- Production line means "… all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected by a conveying system.
- Transfer point means "… a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile."
- Vent means "… an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities."

Under 40 C.F.R. § 60.670(e), an affected facility under 40 C.F.R. § 60.670(a) that commences construction, modification, or reconstruction after August 31, 1983, is subject to the requirements of this part. Additionally, Subpart OOO (*i.e.* Tables 2 and 3) specifies unique emission standards for affected facilities for which:

1) Construction, modification, or reconstruction was commenced after August 31, 1983, but before April 22, 2008; and
2) Construction, modification, or reconstruction was commenced on or after April 22, 2008.

Under 40 C.F.R. § 60.672(a), affected facilities must meet the stack emission limits and compliance requirements in Table 2 to Subpart OOO within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under 40 C.F.R. § 60.8. The requirements in Table 2 to Subpart OOO apply for affected facilities with capture systems used to capture and transport particulate matter to a control device. Under Table 2 to Subpart OOO, affected facilities (as defined in 40 C.F.R. §§ 60.670 and 60.671) that commenced construction, modification, or reconstruction on or after April 22, 2008, must meet a PM limit of 0.032 grain per dry standard cubic meter (g/dscm) [0.014 grain per dry standard cubic foot (gr/dscf)]. Table 2 to Subpart OOO also specifies an opacity limit of 7 % for *individual enclosed storage bins using dry control devices*.

Under 40 C.F.R. § 60.672(b), affected facilities must meet the fugitive emission limits and compliance requirements in Table 3 to Subpart OOO within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under 40 C.F.R. § 60.11. The requirements in Table 3 to Subpar OOO apply for fugitive emissions from affected facilities without capture systems and for fugitive emissions escaping capture systems. Affected facilities (grinding mills, screening operations, bucket elevators, transfer points on belt conveyors, bagging operations, storage bins, enclosed truck or railcar loading stations or from any other affected facility) that commenced construction, modification, or reconstruction on or after April 22, 2008, are required are required to meet a 7 % opacity emission limitation. Under Table 3, to Subpart OOO for crushers at which a capture system is not used, the emission standard is 12 % opacity.

Under 40 C.F.R. § 60.672(e), if any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a) and (b) of 40 C.F.R. § 60.672, or the building enclosing the affected facility or facilities must comply with the following emission limits:
(1) Fugitive emissions from the building openings (except for vents as defined in 40 C.F.R. § 60.671) must not exceed 7 % opacity; and
(2) Vents (as defined in 40 C.F.R. § 60.671) in the building must meet the applicable stack emission limits and compliance requirements in Table 2 to Subpart OOO. Under Table 2, affected facilities (as defined in 40 C.F.R. §§ 60.670 and 60.671) that commence construction, modification, or reconstruction on or after April 22, 2008, are required to meet a PM limit of 0.032 g/dscm (0.014 gr/dscf). Enclosed storage bins using a dry control device must meet a 7% opacity emission limitation.

Under 40 C.F.R. § 60.672(f), any baghouse that controls emissions from only an individual, enclosed storage bin is exempt from the applicable stack PM concentration limit (and associated performance testing) in Table 2 to Subpart OOO but must meet the applicable stack opacity limit and compliance requirements in Table 2 to Subpart OOO. This exemption from the stack PM concentration limit does not apply for multiple storage bins with combined stack emissions.

<u>The EPA's Applicability Determination</u>

Based on the supporting information, the EPA has concluded that the ball mill, pre-ball mill operation storage bins, belt conveyors, transfer points, screening operations, and the post ball mill underground storage tank are affected facilities under Subpart OOO.

The basis of the EPA's determination is as follows:

i) The definition of "wet material processing operations" specifically exempts *screening operations*, *bucket elevators* and *belt conveyors* in the production line, but the exemption does not include the "*first mill*."
ii) The definition of "grinding mill" includes wet and dry mills, which infers no difference between the wet and dry milling emission limit standard. The EPA understands that crushing within the ball mill operation produces gases which are entrained in the slip, emitted, and vented or captured and controlled. As a result, the ball mill is an affected facility.
iii) By virtue of continued degasification of entrained gases in the slip in the underground storage tank, *immediately* following the ball mill operation, the underground storage tank vent or its associated control device controlling emissions from the underground storage tank is also an affected facility, subject to an emissions standard.
iv) The pre-ball mill post-unloading operations (*i.e. transfer equipment, hoppers, conveyors, elevators, screens, etc. or their associated control devices)* are affected facilities since these operations do not process saturated material as claimed for the ball mill.
v) Building vent emissions, which are either directly vented from a building due to emissions resulting from building-enclosed affected facilities, or an associated control device, are subject to Subpart OOO standards.
vi) The spray dryer and downstream equipment are not affected facilities subject to Subpart OOO.

This AD was coordinated with the EPA's Office of Enforcement and Compliance Assurance (OECA) and Office of Air Quality Planning and Standards (OAQPS). If you have any questions about this AD, please contact Tracy Watson at (404) 562-8998 or by email at watson.marion@epa.gov.

Sincerely,

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Denisse D. Diaz
Director
Air and Radiation Division

cc: Sara Ayres, EPA OECA
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