Initial Title V Air Operation Permit
Permit No. 0571242-013-AV

APPLICANT

The applicant for this project is New NGC, Inc. dba National Gypsum Company. The applicant's responsible official and mailing address are: John Corsi, VP of manufacturing, National Gypsum Company, 2001 Rexford Road, Charlotte, NC 28211.

FACILITY DESCRIPTION

The applicant operates the National Gypsum Company Apollo Beach, which is located at 12949 US Hwy 41 South, Tampa, FL 33605.

New NGC, Inc. is a gypsum wallboard manufacturing plant that utilizes a mixture of natural gypsum and synthetic gypsum that is produced in flue gas desulfurization scrubbers. New NGC, Inc. manufactures regular wallboard, XP wallboard containing silicone as an additive, and EXP wallboard, which also contains the silicone additive and has a fiberglass mesh as a backing. By-product gypsum (BPG) and natural gypsum is delivered to the facility via truck. The trucks unload either into a hopper in a partially enclosed area next to the 45,000 ton storage dome (EU No. 011) or unload at the 100,000 ton outdoor gypsum storage pile area (EU No. 016). The outdoor storage pile is used as an overflow storage area. When the gypsum stored in the outdoor storage pile is needed in the dome storage building, the gypsum is either loaded into a truck using a front-end loader and trucked to the dome truck unloading hopper or is directly transferred by a front-end loader to the dome truck unloading hopper.

From the hopper, material is gravity fed to a below grade conveyor belt. The material is conveyed to the top of the storage dome or sent directly to the Imp Mills using a series of fully enclosed conveyor belts (EU No. 014). If the material is directed to the top of the dome, it falls through a hole at the top of the dome onto a storage pile. When needed in production, gypsum from the pile inside the dome is loaded onto the below grade conveyor belt using front end loaders and is sent to the Imp Mills using the same conveying system described above. All transfer points on the conveyor system are fully enclosed.

Gypsum, either from the dome or the truck unloading area, is sent to a gypsum/BPG silo (EU No. 007) inside the Imp Mill Building. Particulate matter emissions from the silo are controlled by a Flex Kleen, Model No. 30/36-PXBL-49, 3,200 DSCFM baghouse which vents outside of the building. From the silo, gypsum is gravity fed onto a conveyor belt and conveyed into one of four Impact (Imp) Mill feed bins and then into one of four 33 ton/hour Imp Mills (EU Nos. 001 – 004). Each Imp Mill has a 30 MMBtu/hr burner to dry the gypsum and two 400 HP electric motor engines. The gypsum is dried, ground, and calcined in the Imp Mills to form calcium sulfate hemihydrate, also known as stucco. The stucco passes over a classifier where oversized material is returned to the Imp Mill. Each Imp Mill has an identical Flex Kleen, Model No. 20-WMC-540, 18,712 DSCFM baghouse to control particulate matter emissions. Each Imp Mill runs on natural gas or No. 2 fuel oil with a maximum sulfur content of 0.2% by weight as a backup.

A screw conveyor, bucket elevator, and air slide system conveys properly sized material into one of two storage bins (EU No. 006) where the stucco is stored before being conveyed into the production building. The transfer of material to and from the storage bins is controlled by a Flex Kleen, Model No. 120-WRTC-128, 6,600 DSCFM baghouse. Also in the Imp Mill building are two ball mills where additives and starch are crushed to produce an accelerant that is added to the wallboard mixture. Starch

is shipped to the facility in railcars and is pneumatically pumped into a 120 ton storage silo (EU No. 010) outside of the Imp Mill Building. Particulate matter emissions from the starch silo are controlled by a Flex Kleen, Model No. 58-BYBC-36, 800 DSCFM baghouse.

In the production building, paper is rolled out onto a conveyor belt designated as the board former and heated to form the bottom of the wallboard. Various additives, including stucco, starch, boric acid, potassium sulfate, silicone, fiberglass, and retardants, depending on the type of board produced, are conveyed to a mixer and mixed with water. Enclosed conveyors transport the mixture from the mixer to the board former. The mixture is spread onto the heated paper and the wallboard is conveyed to the end of the production building. As the material moves along the conveyor, a chemical reaction causes the material to harden, or set up. At this point the wallboard is considered "green", or uncured, wallboard.

At the end of the conveyor belt, the wallboard is cut and conveyed into a 750 foot, four zone, 12 row kiln (EU No. 005). The wallboard can be placed onto any of the twelve rows. The zones in the kiln are maintained at different temperatures. The temperature in Zones 1 and 2 is approximately 600°F, Zone 3 is approximately 450°F, and Zone 4 is approximately 350°F. To maintain the temperatures, Zones 1 and 2 each have one 60 MMBtu/hr burner, Zone 3 has one 30 MMBtu/hr burner, and Zone 4 has one 15 MMBtu/hr burner, for a total of 165 MMBtu/hr. Each zone has its own exhaust stack that could vent outdoors, however, most exhaust from each zone is captured and sent to the next zone through an energy optimization system. The last zone, Zone 4, vents uncontrolled to the atmosphere . The kiln is fired on natural gas and No. 2 fuel oil with a maximum sulfur content of 0.2% by weight as a backup fuel. Two 50,000 gallon storage tanks store the No. 2 fuel oil.

Finished wallboard from the kiln is conveyed to one of three Board End Trim Units (BET units). The BET units cut off ½" from each end of the wallboard. Each BET (EU Nos. 008 and 009) unit has an identical Flex Kleen, Model No. 30-PXL-84, 6,600 DSCFM baghouse to control particulate matter emissions. Using an automated system, paper is glued to the ends of the boards and the boards are stacked for storage.

Waste and reject wallboard is either sent to the waste wallboard crusher or is used as risers. The electric powered waste wallboard crusher (EU No. 012) operates inside the storage dome. The waste wallboard is wet when it is put in the crusher so there are little emissions associated with the crusher. The crushed up waste is mixed with the natural and synthetic gypsum in the storage pile and used in production. The reject wallboard is also used to make risers. Risers (or spacers) are 3"x 3" blocks of reject wallboard that are cut, glued together, and then placed in between the layers of the finished wallboard that are stacked for storage. The PM emissions that are caused by cutting the waste wallboard for risers are vented back to the Imp Mills.

Also, the facility has two (2) existing emergency Compression Ignition Internal Combustion Engine (CI ICE) generators. A diesel-fired, 166 HP Olympian, Model No. D100P1, can power the dry end of the plant in the event of a loss of electrical power. The second generator is a diesel-fired, 33 HP Olympian, Model No. D20P1, which can power the wet end of the plant. Both engines were manufactured prior to 2006. Therefore, the engines meet the definition of existing engines and are subject to 40 CFR 63 Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, which is reflected in this permit. The engines are not subject to 40 CFR

60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines because they were manufactured prior to April 1, 2006.

There are other activities that are performed at this facility, which are sources of particulate matter that vent inside the manufacturing building. These activities are considered to be insignificant activities pursuant to Rule 62-213.430(6)(b), F.A.C., and are listed under Appendix I, List of Insignificant Emissions Units and/or Activities.

The facility is subject to the PM RACT requirements of Rules 62-296.711 and 62-296.712, F.A.C., and Chapter 1-3.52, Rules of the EPC. The kiln is subject to the 0.03 gr/dscf PM allowable limitation of Rule 62-296.712, F.A.C., and the general, 20% opacity standard specified in Rule 62-296.320(4)(b)1., F.A.C. There is no control device associated with the kiln. The four Imp Mills, the gypsum/BPG silo, the waste wallboard crusher, the gypsum handling and storage, the raw material conveyor system, and the Imp Mill building are all subject to 40 CFR 60, Subpart OOO (Nonmetallic Minerals Processing Plants). However, the 5% opacity standard in Rules 62-296.711 - Materials Handling, Sizing, Screening, Crushing and Grinding Operations and 62-296.712 - Miscellaneous Manufacturing Process Operations, F.A.C., is more stringent than the opacity standards in 40 CFR 60 Subpart OOO. In addition, the facility has accepted grain loading limits that are more stringent than 40 CFR 60 Subpart OOO.

The truck unloading receiving hopper is exempt from 40 CFR 60 Subpart OOO per 40 CFR 60.672(d). Also, the facility is exempt from 40 CFR 60 Subpart UUU - Standards of Performance for Calciners and Dryers in Mineral Industries based on the applicability determination pursuant to 40 CFR 60.730(b).

The kiln (EU #005) is not subject to the Compliance Assurance Monitoring (CAM) requirement since there is no control device on the kiln.

PROJECT DESCRIPTION

The purpose of this permitting project is to issue the initial Title V permit for the above referenced facility, to incorporate Permit No. 0571242-012-AC, which authorized the increased in the allowable PM emissions from the kiln, resulting in the facility being classified as a major source, Title V facility. Due to this reclassification, the two existing emergency Compression Ignition Internal Combustion Engine (CI ICE) generators were added as emission units #017 and 018 to the Title V operating permit.

PROCESSING SCHEDULE AND RELATED DOCUMENTS

Air Construction Permit issued: December 16, 2013
Title V Air Operating Permit application received September 22, 2014

PRIMARY REGULATORY REQUIREMENTS

Title III: The facility is not identified as a major source of hazardous air pollutants (HAP).

Title V: The facility is a Title V major source of air pollution in accordance with Chapter 62-213, Florida Administrative Code (F.A.C.).

PSD: The facility is not a Prevention of Significant Deterioration (PSD)-major source of air pollution in accordance with Rule 62-212.400, F.A.C.

NSPS: The facility does not operate units subject to the New Source Performance Standards (NSPS) of 40 Code of Federal Regulations (CFR) 60.

NESHAP: The facility operates stationary reciprocating internal combustion engines which are subject to regulation under 40 CFR 63, Subpart ZZZZ - National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

CAIR: The facility is not subject to the Clean Air Interstate Rule (CAIR) set forth in Rule 62-296.470, F.A.C.

CAM: Compliance Assurance Monitoring (CAM) is not required since there is no control device on the kiln.

PROJECT REVIEW

This permit incorporates Permit No. 0571242-012-AC. The allowable PM emissions from the Kiln increased from 0.005 gr/dscf to 0.03 gr/dscf. This resulted in an increase in potential PM emissions from the kiln from 24.4 tons/year to 146.4 tons/year. Due to the increase in the allowable emissions, the facility-wide potential PM emissions is limited to 202.2 tons/year. The increase in allowable and potential emissions resulted in the facility being classified as a Title V facility.

CONCLUSION

This DRAFT/PROPOSED Title V air operation permit is being issued under the provisions of Chapter 403, Florida Statues (F.S.), and Chapters 62-4, 62-210 and 62-213, F.A.C.