
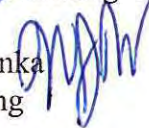


COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office
October 14, 2004

SUBJECT: Review of Application for Title V Operating Permit
United States Gypsum Company
City of Aliquippa
Beaver County

TO: Air Quality Permit File #TV-04-00702

THROUGH: Thomas Joseph 
Acting Facilities Permitting Chief

FROM: Nicholas J. Waryanka 
Facilities Permitting

BACKGROUND

United States Gypsum Company (USG) is a synthetic gypsum wallboard manufacturing facility. Raw synthetic gypsum, called landplaster or uncalcined gypsum, is unloaded from barges with a clamshell bucket and conveyed to a storage building. USG also receives landplaster by truck. The landplaster is mixed with recycled waste gypsum wallboard and conveyed to a dryer mill system to remove excess free moisture. The mixture is then conveyed to the kettle where chemically bound moisture is driven off and the landplaster is calcined into gypsum stucco, the main raw material in wallboard. Dry additives which are delivered to the plant by bulk rail, bulk truck or semi-bulk bags are combined with the stucco and conveyed to the board process mixer where they are mixed with water and wet additives. The slurry is discharged between two sheets of paper and formed into wallboard. Wallboard is conveyed, cut and distributed to a multi-deck drying kiln. The dried wallboard is finish cut and bundled for shipment. As a result of the levels of carbon monoxide (CO) emitted from this facility, USG is a major stationary source as defined in Title I, Part D of the Clean Air Act Amendments. As such, the facility is subject to the Title V permitting requirements adopted at 25 Pa. Code, Chapter 127, Subchapter G.

The facility began operations in 1999 but was not at full operating production until November 1, 2000. A Title V Operating Permit application for the facility was submitted on May 18, 2000 in accordance with 25 Pa. Code §127.505. The application was deemed timely and complete on October 26, 2000. An application shield, as described in 25 Pa. Code §127.505(e), was granted at that time.

REGULATORY ANALYSIS

USG failed to pay emission fees for calendar years 2000 and 2001 in accordance with 25 Pa. Code Section 127.705. As a result, the facility's application shield ceased to exist as soon as the emission fees were past due which in this case was September 2, 2001. USG was notified of this in a Notice of Violation on September 2, 2003. Other compliance problems at USG included failure to submit emission statements in accordance with 25 Pa. Code Section 135.21, exceedance of VOC emissions limits, fugitive dust emissions violations of 25 Pa. Code Section 123.1 and violation of Plan Approval Condition #8 by not having a certified emissions evaluators available on site.

In order to correct these violations and proceed with the process of obtaining a Title V permit, USG and PA DEP took the following corrective actions:

1. Emissions fees were paid, along with penalties and interest.
2. Emission statements were submitted.
3. Investigation of the VOC limit exceedance revealed that the excess emissions were due to the use of chain lubrication oils in the kiln. A plan approval modification application was submitted to revise the VOC emission limits.
4. The modification application also accounted for USG receiving a portion of their raw materials by truck. A dust control plan was submitted to address the fugitive dust violation.
5. The plan approval conditions covering demonstration of compliance with opacity requirements were clarified and revised accordingly.

On May 19, 2004, USG was notified that their application was reinstated provided the requirements of 127.505 continue to be met.

The USG facility was newly constructed under a single plan approval, #PA-04-702A. Most of the conditions from this plan approval were inserted in either the Site Level or Source Level Requirements sections of the Title V Operating Permit including provisions for particulate matter emission limits, monitoring, testing, recordkeeping, reporting and work practice standards.

Three conditions from the plan approval were either modified or not included in the Title V Operating Permit because they are not enforceable as a practical matter. Condition #5 imposed emission limits for every source at the facility including particulate matter pounds per hour and tons per year limits. These particulate matter mass emission limits were calculated based on a grain loading limit of 0.015 grains per dry standard cubic foot that was included in the plan approval as Condition #7. However, the majority of these sources are controlled by dust collectors rated at 4,300 standard cubic feet per minute or less. Due to the economic ramifications of requiring stack testing for a large number of small sources, a testing program to demonstrate compliance with 0.015 gr/dscf will not be required. Instead, we will hold these sources to the SIP standard of 0.04 gr/dscf specified

in 25 Pa. Code Section 123.13(c)(1)(i) and use US EPA AP-42 emission factors as the method of compliance.

The emission limits from Conditions #5 and #7 for the larger sources, specifically the Board Kiln/End Seals (EU-1,2), #1 Kettle (EU-3), #2 Kettle (EU-4), #1 Dryer Mill (EU-5) and #2 Dryer Mill (EU-6) will remain intact. Compliance will be demonstrated through stack testing.

Condition #12 required USG to provide employee training for operation of equipment, emissions limitations, monitoring, recordkeeping and maintenance. This language in this condition is too ambiguous and as stated above is not practically enforceable. As such, it was not included in the Title V operating permit.

When it was originally issued, the plan approval included applicable requirements from the New Source Performance Standards Subpart OOO for Nonmetallic Mineral Processing Plants and Subpart UUU for Calciners and Dryers in Mineral Processing Plants. Subsequently the US EPA made a federal rule interpretation that facilities processing synthetic gypsum were not subject to these regulations and so the plan approval was revised accordingly.

Otherwise, the permit contains the applicable SIP requirements normally found in most Title V Operating Permits within the Site Level Requirements section.

EMISSION INFORMATION

The Title V Permit for the site will include twenty-one (21) sources including one combustion unit. There are also twenty (20) dust collectors at this facility controlling emissions from the various processes. Besides those already acknowledged by the Department, additional trivial activities are listed in Section H of the proposed permit under Miscellaneous Text.

Potential emissions for the emission sources were based upon continuous operation (8760 hours) and calculated using test data, manufacturers data, US EPA emission factors and material balances. Actual emissions were calculated based on similar data and the hours of operation for a typical calendar year to produce hourly and annual emission rates.

Many of the process sources included in the permit have dust collectors rated at 5,000 scfm or less. Ideally, those sources would have been grouped together in the permit and represented by a single source for simplicity's sake. However, Condition #5 of Plan Approval #PA-04-702A establishes specific pounds per hour and tons per year PM10 emission limits on each source. Therefore, each of these smaller sources and its associated control device had to be created in the AIMS database and included in the Title V permit.

Although USG is a Title V facility because of its CO emissions mainly from the plant's kiln, the primary pollutant of concern is particulate matter. The facility is borderline major for particulate matter emissions at 99.5 tons per year. Other pollutants emitted in significant quantities include

NOx from combustion sources at 85.43 tons per year facility wide and VOC emissions of 31.7 tons per year from chain lubrication oils used in the kiln.

OPERATIONAL FLEXIBILITY

The Title V permit may include provisions to allow a permitted facility to make certain changes without requiring a permit revision. USG has requested the flexibility of increasing emissions by the de minimus levels specified in 25 Pa. Code §127.449(d) and the installation of the minor sources listed in 25 Pa. Code §127.449(e). These provisions will be specified in the Title V permit.

No alternate operating scenarios were proposed by USG.

USG has requested that the permit shield be granted for this permit. The permit shield has been specified in the permit special conditions.

CONCLUSIONS AND RECOMMENDATIONS

I have completed my review of USG's Title V permit application for their facility in Beaver County. USG has met the regulatory requirements associated with this application submittal. The attached proposed operating permit reflects terms and conditions as described in USG's permit application. It is my recommendation to issue a draft Title V permit for this facility.