PERMITTEE

American Cement Company, LLC
Sumterville Cement Plant
4750 E. CR 470, P.O. Box 445
Sumterville, FL 33585

PERMITTING AUTHORITY

Florida Department of Environmental Protection (Department)
Division of Air Resource Management
Office of Permitting and Compliance
2600 Blair Stone Road, MS #5505
Tallahassee, Florida 32399-2400

PROJECT

Permit No. 1190042-009-AC/PSD-FL-361F
Air Construction Permit
Alternative Fuels & Production Rate Increase at the Existing Portland Cement Manufacturing Plant

PUBLIC NOTICE

The Department distributed a draft air construction permit package on October 5, 2012. The applicant published the Public Notice in the Daily Commercial in Leesburg, Lake County, Florida on October 12, 2012. The Department received the proof of publication on October 18, 2012.

No requests for an administrative hearing or requests for an extension of time in which to file a petition for an administrative hearing were received by the Agency Clerk in the Department's Office of General Counsel.

COMMENTS

No comments on the permits were received from the public or the U.S. EPA Region 4 Office during the 14-day public comment period. Comments on the permits were received from the Applicant during the 14-day public comment period. The comments are addressed below.

All changes are emphasized with yellow highlight in this document only. Additions to the permit are indicated below by double underline. Deletions from the permit are indicated below by ~~strike through~~.

Comments submitted via e-mail from Mr. John B. Koogler, Ph.D, P.E. (Consultant for the Applicant) on October 19, 2012 {posted and available on the Department's world wide website at http://arm-permit2k.dep.state.fl.us/psd/1190042/U00000570.pdf}

Comments

1. "Comment [JK1]:" Specific Condition II.9.a. The applicant requested that the annual PM compliance test (lb PM/ton clinker) coupled with annual clinker production be used to calculate PM emissions because there is not an established relationship between PM emissions and the corresponding opacity of emissions.

***Response*:** The Department agrees with the comment that opacity from COMS has often been used as a crude surrogate of PM emissions, but it is not a quantitative surrogate. As stated in the draft Specific Condition II.9.a., the same calculation methodology for emissions before and after the completed project must be used. The applicant calculated emissions in the permit application. PM emissions were calculated using AP-42 along with maximum throughput values for Emissions Unit ID No. 008, Fugitive Dust from Storage Piles, Paved Roads, and Unpaved Roads. PM emissions from the pyroprocessing system were calculated using the permit allowables. Opacity therefore should not be used. The same calculation methodology used in the permit application for emissions before and after the completed project must be used. Therefore, the use of the COMS is irrelevant.

Specific Condition II.9.a. is corrected to read as follows:

"9. 10-Year Emissions Monitoring - PSD Avoidance Requirements:

a. Monitoring. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of 10 years following resumption of regular operations after the change. The change (proposed project under Permit No. 1190042-009-AC/PSD-FL-361F) shall not increase the design capacity of any emissions unit or its potential to emit that PSD pollutant. Emissions shall be computed in accordance with Rule 62-210.370, F.A.C.

- The Department identified the following PSD pollutants that could increase from this project: **NOx, CO**, **VOC** (surrogate for THC & indicator of CO), **SO_2**, **PM** and **Hg**.
- The permittee shall use the same calculation methodology for emissions before and after the completed project under Permit No. 1190042-009-AC/PSD-FL-361F. In summary, the CEMS shall be used for emissions of **NOx, CO**, **VOC** (surrogate for THC & indicator of CO) and **SO_2**. ~~The COMS shall be used for emissions of **PM**.~~

[Rule 62-212.300(1)(e)1., F.A.C.; and, Applicant Request.]"

2. "Comment [JK2]:" Specific Condition III.A.2.b. The applicant indicated that changes may be required to the calciner burner also, including the relocation of fuel injection ports to accommodate the burning characteristics of the various AFs.

***Response*:** The changes to the calciner burner had been described in the permit application. The Department agrees to make the requested corrections.

Specific Condition III.A.2.b. is corrected to read as follows:

"2. New Equipment: The permittee is authorized to construct and operate the following permanent equipment for firing alternative fuels (AF) in the pyroprocessing kiln system. The permittee shall submit details of the final design once complete (e.g., design heat input rates and schematics).

...

b. *Kiln and Calciner Burner, AF Handling and Firing Systems*. The permittee is authorized to replace the current kiln and/or calciner burner system with a multi-channel fuel burner(s) and/or other related feed equipment specifically designed for co-firing AF with authorized fuels in the kiln.

…"

3. "Comments [JK3 & JK4]:" Specific Condition III.A.5. The applicant offered clarifications and corrections to some of the text within this specific condition.

***Response*:** The Department agrees to make the requested clarifications and corrections.

Specific Condition III.A.5. is corrected to read as follows:

"5. AF: Subject to the AF Acceptance Criteria, the permittee is authorized to co-fire authorized fuels within any of the following AF categories.

a. *Tire-Derived Fuel (TDF)*, which includes whole and shredded tires with or without steel belt material including portions of tires such as tirefluff. The kiln is currently permitted to use whole tires using the existing tire injection mechanism system and to use chipped tires.

b. … .

c. … .

d. … .

e. … .

f. … .

g. … .

h. … .

i. … .

j. *Engineered Fuel (EF)* is engineered to have targeted, consistent fuel properties such as: calorific value, moisture, particle size, ash content, and volatility. The specific targeted properties are established based on available alternative fuel material supply and are carefully controlled through blending of non-hazardous combustible materials or through separation of non-hazardous incombustible materials from combustible materials (mixes of any alternative fuels where the blending and processing may also include the addition of on-specification used oils or other non-hazardous liquids to ensure consistent and predictable fuel properties). EF is engineered largely from the above materials and could include, but not be limited to materials such as ~~consist of~~ animal meal, automotive manufacturing byproducts, clean-up debris from natural disasters, processed municipal solid waste, dried/sanitized biosolids, paint filter cake, hospital materials (non-infectious), pharmaceuticals (expired prescriptions), cosmetics, and confiscated narcotics.

[Application No. 1190042-009-AC/PSD-FL-361F; Rule 62-210.200, *Definitions - PTE*, F.A.C.; and, Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]"

4. "Comments [JK5, JK6, JK7, JK8, JK9, JK10, JK11 & JK12]:" Specific Conditions III.A.6., 8., 12., 15., 19., 23., 24., 25. & 26. The applicant offered corrections and clarifications to some of the text within these specific conditions.

***Response*:** The Department agrees to make the requested corrections and clarifications.

The cited specific conditions are corrected and clarified to read as follows:

"6. Receiving AF: For AF received at the plant, the permittee shall comply with the following requirements.

a. … .

b. The permittee shall record the ~~amount, the~~ category/type and the amount of each AF received.

c. Each AF category ~~material~~ received shall be sampled and analyzed in a manner consistently with industry standards for quality assurance and quality control to ensure that representative data is collected. The permittee shall obtain the analytical results of a representative sample of the AF category prior to the initial delivery, quarterly for the first year, and if the analysis meets permit requirements the frequency of sampling and analysis shall be annual every January thereafter, if that material is present. All records and results of the analysis will be maintained at the facility as required for currently permitted fuels.

d. *Fuel Analyses Parameters*: The following information shall be included when reporting the analytical results for an AF: higher heating value (Btu/lb) of AF; moisture, ash, ~~volatiles, fixed carbon,~~ sulfur and chlorine content (percent by weight); ~~arsenic, beryllium, cadmium,~~ chromium, lead, and mercury contents (ppm). All concentrations are on a dry basis. Reject roofing shingles, combusted separately as item 5.c. (Roofing Materials) and if knowingly included in item 5.j. (Engineered Fuel) shall include a certification from the manufacturer to be made without asbestos.

[Application No. 1190042-009-AC/PSD-FL-361F; Rule 62-210.200, *Definitions - PTE*, F.A.C.; and, Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]

…

EQUIPMENT SHAKEDOWN AND AF CATEGORY ASSESSMENTS

8. Shakedown of Equipment and AF Assessments: The permittee shall comply with the emissions standards and terms of all valid air permits during shakedown of the equipment allowed under Specific Condition 2. and AF category assessments.

…

12. Test Procedures: The test procedures specified in the current valid Title V air operation permit, Permit No. 1190042-007-AV shall be used for the initial compliance demonstration while combusting each alternative fuel category in the kiln and calciner. [Application No. 1190042-009-AC/PSD-FL-361F; Rule 62-

4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210, *Construction Permits*, F.A.C.]

…

15. Compliance Stack Tests: The permittee shall continue to conduct stack tests in accordance with the methods and requirements in current Title V air operation permit to demonstrate compliance with the emission standards and limitations. The required stack tests for PM and dioxins/furans shall be conducted while firing an AF category that has completed the AF assessment period. [Rule 62-297.310(7)(a)4, F.A.C.]

…

19. Sampling/Analysis by Permittee: For each AF category assessment, the permittee shall obtain analytical results of the AF as required in Condition 6., the operator shall take a representative as-fired sample of the AF and have it analyzed for the parameters listed in specific condition 6.d. [Application No. 1190042-009-AC/PSD-FL-361F; and, Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]

…

23. Shakedown Notifications: Within 15 (fifteen) days of completing construction, the permittee shall notify the Compliance Authority and provide a schedule for shakedown and the initial AF category assessment. The Compliance Authority may waive this deadline. [Application No. 1190042-009-AC/PSD-FL-361F; and, Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]

24. AF Assessment Notifications: At least five days prior to firing each new ~~type~~ category of AF material listed in Specific Condition ~~4~~5., the permittee shall notify the Compliance Authority with a proposed schedule. The Compliance Authority may waive this deadline. [Application No. 1190042-009-AC/PSD-FL-361F; and, Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]

25. Records of Fuels and Heat Input: The permittee shall record the fuel-firing rate continuously. The permittee shall maintain records of the quantity and representative analysis of fuels purchased, and such records shall include the parameters listed in Specific Condition 6.d. The permittee shall make and maintain records of heat input to the pyroprocessing system on a block-hour basis, starting at the beginning of each hour, by multiplying the hourly average fuel-firing rate by the heating value representative of that fuel from the records of fuel analysis. Such records shall be completed for each block-hour~~, within 15 minutes of the end of each block-hour~~ by the end of the day following the day the fuel was fired. [Application No. 1190042-009-AC/PSD-FL-361F; and, Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.]

26. Reports for Shakedown and AF Assessments: During periods of authorized shakedowns and AF category assessments, the permittee shall document the shakedown and/or AF category assessment period. These periods may end early when the operator is confident that good operating practices have been defined for the AF category that results in steady kiln system operation. Within 90 days of completing a shakedown and/or assessment of each AF category ~~material~~ listed in Specific Condition ~~4~~5., the permittee shall provide a written report summarizing the following information collected from the shakedown and/or AF category assessment period.

a. … .

b. The AF category assessments may occur over several years. Emissions from the initial AF category assessment of a new fuel may be excluded from the report requiring a comparison of actual-to-baseline emissions (Rules 62-212.300(1)(e) and 62-210.370, F.A.C.) since operators are still establishing good operating practices and the AF will not have been available for the full calendar year. To exclude emissions data collected during an authorized shakedown and/or AF category assessment period from this report, the permittee shall submit the following information for: total clinker production; fossil fuel fired; AF fired; total CO, NOx, SO_2 and THC emissions (tons). Excluded data shall be replaced with data estimated from: the actual clinker production rate; and an emissions factor based on the average emission rates from the rest of the year (i.e., all periods except the shakedown and/or AF assessment periods).

[Application No. 1190042-009-AC/PSD-FL-361F; and, Rule 62-4.070(1)&(3), *Reasonable*

Assurance, F.A.C.]"

5. "Comment [JK13]:" Specific Condition III.B.5. The applicant requested corrections to the permitting note within this specific condition.

***Response*:** The Department agrees to make the requested corrections.

The cited specific condition is corrected as follows:

"5. E.U. ID No. 003, Pyroprocessing System: The emission standards & limitations in this specific condition replace those in Specific Condition III.C.13. of Permit No. 1190042-001-AC/PSD-FL-361 in their entirety.

…

{Permitting Note on Annual PTE: In combination with the ~~previous~~ permitted annual clinker production limitation of ~~1,095,000~~ 1,186,250 tons per year, the ~~above~~ revised BACT emissions standards effectively limit annual potential emissions from this unit to: 1,588 tons/year of CO; 1,068 tons/year of NO_X; 83.8 tons/year of PM/PM_{10} ($PMPM_{10}$ potential emissions will be 21.9 TPY with new Subpart LLL(09/09/10 FR) limit which has a compliance date of 09/09/13); 110 tons/year of SO_2; and 66 tons/year of VOC.}

[Rules 62-4.070(1)&(3); 62-204.800(11); 62-210.200 (PTE); 62-212.400 (Best Available Control Technology (BACT)), F.A.C.; NESHAP 40 CFR 63, Subpart LLL (as amended in the 12/20/06 FR, and the 09/09/10 FR); as partially established in Permit No. 1190042-001-AC/PSD-FL-361; and, Application No. 1190042-009-AC/PSD-FL-361F.] … "

6. "Comments [JK14, JK15 & JK17]:" Specific Conditions III.B.7., 8., & 9. The applicant requested clarifications as to when initial compliance demonstrations are to be completed.

***Response*:** The Department agrees to make the requested clarifications.

The cited specific conditions are clarified to read as follows:

"7. E.U. ID No. 003, Pyroprocessing System - Initial Compliance Demonstration - COMS Data: Within 90 operational days of the ~~commencement~~ completion of the project, an initial compliance demonstration at the higher production rate shall be performed for visible emissions (VE) using COMS data. The THC CEMS data shall serve as an indicator of CO emissions; no initial CO test is required. CEMS data shall be collected at the higher production rate to demonstrate compliance with the NOx, THC and SO_2 emissions standards. The periods of time in which the NOx data is collected shall be the same periods of time as when the THC and SO_2 emissions data ~~is~~ are collected. …

8. E.U. ID No. 003, Pyroprocessing System - Initial Compliance Demonstration - CEMS Data: Within 90 operational days of the ~~commencement~~ completion of the project, initial compliance demonstration at the higher production rate shall be performed for NOx, THC (surrogate for THC & indicator of CO), SO_2 and Hg using CEMS data. The THC CEMS data shall serve as an indicator of CO emissions; no initial CO test is required. CEMS data shall be collected at the higher production rate to demonstrate compliance with the NOx, THC and SO_2 emissions standards. The periods of time in which the NOx data is collected shall be the same periods of time as when the THC and SO_2 emissions data is are collected. The emissions data shall be reduced to the averaging time(s) as specified in the current valid Title V air operation permit, Permit No. 11190042-007-AV. The results shall be compared to the emission standards/limits of this permit. A summary of the emissions data from the NOx, THC, SO_2 and Hg CEMS at the higher production rate shall be submitted in a test report to the permitting and compliance authorities within 45 days of completion of the project. The permittee shall include in the report a statement whether or not the emissions unit is in compliance with the specific NOx, THC, SO_2 and Hg emission standards/limits of this permit. As an option, emission measurements, consisting of three 1-hour test runs conducted in accordance with EPA Method 29 can be used for compliance demonstration.

9. E.U. ID Nos. 001, 002 & 004 - 008: Within 90 operational days of the ~~commencement~~ completion of the project, initial compliance demonstration at the higher production rate shall be performed by E.U. ID Nos. 001, 002 & 004 - 008. … "

7. "Comment [JK16]:" Specific Condition III.B.8. The applicant requested a clarification that Hg stack testing could be used.

***Response*:** The Department agrees to make the requested clarification.

The cited specific condition is clarified to read as follows:

"8. E.U. ID No. 003, Pyroprocessing System - Initial Compliance Demonstration - CEMS Data: Within 90 operational days of the completion of the project, initial compliance demonstration at the higher production rate shall be performed for NOx, THC (surrogate for THC & indicator of CO), SO_2 and Hg using CEMS data. The THC CEMS data shall serve as an indicator of CO emissions; no initial CO test is required. CEMS data shall be collected at the higher production rate to demonstrate compliance with the NOx, THC and SO_2 emissions standards. The periods of time in which the NOx data is collected shall be the same periods of time as when the THC and SO_2 emissions data are collected. The emissions data shall be reduced to the averaging time(s) as specified in the current valid Title V air operation permit, Permit No. 11190042-007-AV. The results shall be compared to the emission standards/limits of this permit. A summary of the emissions data from the NOx, THC, SO_2 and Hg CEMS at the higher production rate shall be submitted in a test report to the permitting and compliance authorities within 45 days of completion of the project. The permittee shall include in the report a statement whether or not the emissions unit is in compliance with the specific NOx, THC, SO_2 and Hg emission standards/limits of this permit. As an option, emission measurements, consisting of three 1-hour test runs conducted in accordance with EPA Method 29 can be used for compliance demonstration.

The test report shall include the clinker production rate (TPH, tons per hour) during testing.

The ammonia injection rate during NOx testing shall be included in the test report.

[Application No. 1190042-009-AC/PSD-FL-361F; Rule 62-4.070(1)&(3), *Reasonable Assurance*, F.A.C.; Rule 62-4.030, *General Prohibition*, F.A.C.; and, Rule 62-4.210,*Construction Permits*, F.A.C.]"

CONCLUSION

The final action of the Department is to issue the permit with the administrative corrections and/or clarifications as noted above.