UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 7
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KANSAS CITY, KANSAS 66101

AIR PERMITTING AND
COMPLIANCE BRANCH

October 20, 2005

Kyra L. Moore, Chief
Permit Section
Air Pollution Control Program
Missouri Department of Natural Resources
Jefferson State Office Building
P.O. Box 176
Jefferson City, MO 65102-0176

Dear Ms. Moore:

Re: PSD - Buzzi Unicem, Festus, MO - proposed expansion project

We have the following comments regarding documents provided to us by the department for the above mentioned project:

Proposed Permit

Special Condition 1A: The condition addresses 39 existing units/operations proposed to be shutdown (i.e., rendered inoperable before the end of the new kiln system's shakedown period) and the emission reductions of which may have been used as emissions reduction credits for exempting the proposed current project from PSD applicability and review regarding various pollutants. If so, then non-applicability of the PSD regulation regarding that proposed project and regarding pollutants other than CO remains valid as long as those shutdowns and resulting emission reductions are permanent and enforceable. If the owner/operator later decides to retain and operate any of the units proposed to be shutdown, as the condition as written would allow, the condition requires the department's approval (via a "permit" or a "no permit required" determination) before operation of the unit(s). The condition is silent regarding the resulting effect, of said retention of units, on the proposed project at hand (i.e., the project that benefited by the proposed shutdowns). A company should not be allowed to proposed removals or shutdowns, take emission reduction credit, avoid PSD review for various pollutants, and then after receiving a permit, change its mind, and then simply obtain a permit (or a no permit required determination) for the retained unit(s). Doing so may constitute circumvention if the underlying original permitting action (in this case, the current project being reviewed) is not also reopened for re-assessment of the emissions netting. The condition should be revised to also require a reopening of the original permitting action for reconsideration of PSD applicability regarding pollutants other than CO. If a reopening occurs, it should be remembered that an emission reduction, to be creditable, must be obtained and made federally enforceable within the

endpoints (one of which is the actual commence operation date of the approved modification project) of the project's contemporaneous period. For example, once the commence operation date for the approved modification has occurred, an emission reduction after that date would not be creditable, regarding that approved modification, in that the reduction will not be made federally enforceable before the commence operation date for the modification in question. This basically limits any subsequent re-netting proposals if/when re-netting is needed. These matters should be addressed in the permit to minimize future misunderstandings.

To minimize future problems, the question as to what action/change the department will accept as meeting the rendering inoperable intent of the condition should be addressed at this time to both party's satisfaction. For each affected unit/process/activity, the company should explain what will be done to render the unit/process/activity inoperable for the department's consideration at this time. Since the meaning of "shall render inoperable" lacks specificity and is open for as many interpretations as may exist, the provision also may not be enforceable from a practical standpoint. Without specificity and prior agreement, the owner might do something which the department decides is not enough to render a unit inoperable and it may be too late to perform additional changes before the imposed deadline. We also suggest that a physical change be the basis for rendering a unit/process/activity inoperable (e.g., and regarding the waste dust storage tank, that the supply line be removed rather than a damper plate in the supply line simply being turned to cut off flow) and that the physical change(s) needed to satisfy the condition's intent should be specified in the permit.

As you may know, EPA policy/guidance states, in part, that a unit that has been inoperative longer than 2 years must be considered a new unit if/when the owner proposes to again operate the unit. See EPA guidance regarding reactivation for other criteria or considerations.

Special Condition 1B3. The condition should be revised to clearly apply the notification requirement on a per unit basis (or a per "group of units" basis if the grouped units have the same rendered inoperable date).

Also, since emissions netting addressed prior to the time of permitting must rely on assumed commence construction and commence operation dates [assuming MO's PSD rule uses those dates per the federal rule], the netting must be re-opened once the actual commence construction date occurs to verify that assumed creditable emission reductions have not moved out of the project's contemporaneous period window [e.g., Table B1, Appendix B, of the Dept's Review of Application notes emission reductions associated with Project 2001-11-077 which we assume applies to an action in 2001] and that the non-applicability decisions for pollutants other than CO remain valid. Ditto: the actual commence operation date -- to verify that there are no additional emission increases at the source which must be included in the emissions netting for the current project being reviewed. See discussion in EPA's NSR Workshop Manual regarding a shifting of the contemporaneous period window.

Special Condition 3A. The condition requires the use of "good combustion practices" at all times in order to meet BACT. If the intent regarding this requirement applies to periods during which the BACT-related requirements are not being met but operations continue (and any other operating period for that matter), we suggest the department's intent regarding the meaning of

"good combustion practice" should be explained/defined; otherwise, the owner/operator may interpret the meaning of good combustion practice differently from the department's interpretation; the end result may be a provision not enforceable by the department from a practical standpoint if the condition or the department's rules lack specificity regarding the meaning of good combustion practices.

Special Condition 3. Emissions during periods of startup and shutdown are not addressed. BACT emission standards must also be set forth in the permit for those type periods. Non-emission limit BACT standards may be set forth only after it has been determined that emission limit type standards (e.g., lb/MMBTU of heat input, lb/hr) are not feasible or practical; see the definition of BACT. Each proposed BACT emission limit and the associated BACT analysis must be subjected to public review and comment before permit issuance. It appears that the permit excuses emissions during startup/shutdown periods from compliance verification testing, etc.; we see no basis for that. If BACT emission standards for startup/shutdown periods different from those set for other normal operating periods will be needed, those standards must be proposed for public participation before permit issuance. Guidance regarding BACT and startup/shutdown periods can be found in EPA's Environmental Appeals Board's website; a decision that comes to mind is the Rock-gen decision. If the proposed 30-day averaging period prevails, we see no reason why emissions during startup/shutdown periods should be excluded regarding the emission limitations or for compliance testing verification purposes. EPA considers periods of startup/shutdown to be "normal operations" for which BACT standards must be set forth and compliance verified.

Also, emissions during startup/shutdown periods must be accounted for in applicability/non-applicability determinations, in that those emissions are due to normal operations, especially if emissions during such periods will be higher than assumed, other operating period, emission rates. The documents provided to us do not indicate that the department included/quantified emissions during startup/shutdown periods regarding the PSD non-applicability determinations. If needed to avoid PSD applicability, the number of allowed startup/shutdown periods and those periods' durations should also be restricted by the permit.

Special Condition 3B. We have reviewed the permit application and the department's review summary document and conclude that the proposed emission limit of 2.73 lbs of CO/ton of clinker produced has not been adequately explained and justified. The amount appears to be the amount proposed by the company without explanation or supporting documentation/justification; also, there is no indication in the documents provided to us that the department challenged the proposed limit or researched available sources of information to compare the proposed limit to limits established for other similar units. EPA's BACT/LAER Clearinghouse lists many kilns with CO emission limits ranging from 1.2 to 2.5 lbs/ton, without the use of add-on emission control; e.g., one limit is 2 lbs/ton, 1 hour average. It does not appear that the department pursued information regarding those (or other existing) determinations; we assume the limits we found in our limited search are for PH/PC-type kiln systems. The proposed limit is questionable in our opinion. See other comments we have regarding the overall BACT analysis.

Special Condition 3C. The proposed emission limit of 691.29 lbs of CO/hour is not explained from a derivation standpoint and has not been justified from a BACT analysis standpoint, as far as we can tell, in the documents sent to us for review. The proposed limit is questionable in our opinion in that it has not been adequately explained to us and the public. *NOTE: On the plus side, Conditions 3B and 3C in combination set forth an emission limit which varies with load (Condition 3B) and a limit which caps emissions (Condition 3C) per EPA policy/guidance; as such, both type limits should be retained. Since BACT-level emission control must be achieved at all levels of operation, a lb/hr emission limit, alone, based on a unit's capacity would not represent BACT at lower operating levels. A limit that varies with load, alone, does not cap emissions. As such, both type limits are needed for BACT purposes on a per unit/process basis. See EPA's guidance regarding effective permit writing.*

Special Conditions 3B and 3C. The proposed 30-day averaging periods have not been justified from a need standpoint. EPA guidance requires the use of short-termed limits (e.g., 3-hour average); longer-termed averages must be justified by demonstrating that emissions will have high variability such that short-termed limits would not be practical. Neither the permit application nor department documents given to us provide convincing information which would justify a 30-day emission rate averaging. As mentioned above, a limit we found for a unit appears to be a 1-hour average limit. If emissions data for the unit is not available at this time, we suggest that the default should be a short-term emissions averaging [e.g., 3 hour averaging] with adjustment later, if/when justified, when adequate data becomes available and after prior public participation.

Special Condition 3D. The proposed BACT limit of 2.88 lbs of CO/hour for the furnace appears to be nothing more than a limit with an AP-42 emission factor (EF) as its basis (84 lbs/MM cubic feet of natural gas). The limit also lacks an averaging period, making the limit unenforceable from a practical standpoint if the department's rules do not resolve the lack of specification. It appears that the department has not proposed for public comment the stringency of the proposed BACT limit; stringency, we suggest, relies on the emission rate limit and that limit's averaging period. The department has not justified that an AP42 EF-derived emission limit represents the application of BACT. If that were the case, then there probably would never be a need to ever do BACT decisionmaking for an uncontrolled process addressed by AP-42. AP-42 EFs, even the best rated, are nothing more than averaged emission rates over a number of emission units; meaning that some units emission tested for AP-42 purposes had an emission rate less than the average rate and other units had an emission rate greater than the average rate. BACT decisionmaking involves the determination of what a particular unit's lowest emissions will be and then setting a limit based on that information (rather than a rate/limit based on emission rates for many units). The department has not justified the AF-42 EF-derived emission limit as representing the lowest emission rate for the particular unit being addressed for permitting. The proposed emission limit is questionable; the proposed limit has not been BACT justified.

Special Condition 3D. Practices and procedures that may be recommended by a manufacturer for operation of a unit may be for reasons other than the minimization of emissions. Since the main objective of BACT is the minimization of the target pollutant, we suggest that emission

minimization of the target pollutant should be the goal of the subject operation/maintenance manual. If the company has already ordered the proposed unit, we see no reason why the practices and procedures can't be addressed and proposed prior to permitting. If a deadline for development of the manual has not been set forth in the permit, a deadline should be clearly imposed such as imposing the requirement that finalization of the manual be no later than commencement of initial startup of the unit. The provision also does not require that the department must be given an opportunity to review and approve the manual prior to its use. If such a manual will be needed to help ensure continuing compliance with the BACT limit, we suggest review and approval of the manual should be a department desire and that such review be done long before the unit's startup date in case revisions are needed. What will happen if the owner follows the practices and procedures set forth in the manual (not prior reviewed by the department) but fails to meet the emission limit and if the department's review of the manual at that point indicates that those practices and procedures are clearly inadequate to ensure compliance with the BACT emission limit? Will the department enforce against an inadequate manual? If no, then why require the manual?

Special Condition 7A-C. The conditions do not impose an averaging period for each of the PM10 emission limits. We don't recall other conditions of the permit which eliminate these deficiencies. If so, the limits are not enforceable from a practical standpoint and the department has not provided adequate explanation for why averaging periods can not be set forth at this time as part of the permit. Since the limits are stack test based, we suppose the intended averaging periods are short-termed; nonetheless, each limit must have a clearly stated averaging period. Regarding those emission limits and regarding the testing/measurement requirements of the permit for SO2, NOx and VOC, the permit also lacks specificity regarding the measurement method(s) which must be used by the owner. For an imposed emission limit, it only makes sense that a measurement method be specified, along with an averaging period, if a given method may produce an emission measurement different than what another method would produce; in this type of case, specification of the pollutant's emission limit, the limit's averaging period and the required measurement method would fully establish the emission limitation intended by the permitting agency. The department has not shown that these important elements regarding emissions can not be established before permit issuance; the permit appears to leave averaging periods and measurement methods to a future test plan.

Special Condition 7D. The provision requires the performance testing of at least 10% of the baghouses affected by the requirements of Conditions 7A and 2A; the number of baghouses listed is about 50 units. The department's rationale for selection of the 10% requirement has not be explained or justified. Under the NSPS regulation, as an example, EPA determinations have allowed for performance testing of several of many units only if the processes/units are identical and if similar emission characteristics would be present. We see no similar qualifying rationale regarding the units addressed by the condition. We suggest that each unit's emissions must be compliance verified by emissions measurement [or re: efficiency verification, if applicable]. Doing so will also help establish emission rates which may prove useable in place of generalized AP-42 EFs. It has not been shown that testing 10% of the units will provide convincing evidence that the untested units' emissions will be in compliance with their respective emission standards.

The burden of verifying compliance should generally be considered a cost of doing business and, if applied to all sources, the burden should not result in placing a source at an economic disadvantage. Criteria similar to those used for NSPS purposes should be used regarding this condition.

Other parts of the proposed permit. Unfortunately, we were not able to review other parts of the permit due to time constraints. The unreviewed sections of the permit may contain provisions which eliminate or reduce the concerns set forth in this letter or may contain provisions raising additional concerns.

Review of Application

Review Summary. Where ever the term PM10 is addressed in the document or the permit, it's not clear as to whether the meaning is "total PM10" -- i.e., filterable PM10 (e.g., as measured by Method 201A of 40 CFR Part 51) **and** condensible particulates (e.g., as measured by Method 202, ditto). If condensibles are not included, why not? PM10 emission estimating, PM10 applicability/non-applicability determinations as well as PM10 emission limits must be addressed in terms of total PM10. The department's review and the proposed permit need explanation regarding these matters. If, e.g., condensibles have not been included, the PM10 emission estimate/determination/limit is/are deficient.

Emission/Controls and Evaluation, Table 3. The emission change summary is different from that set forth in the permit application. It appears that the department has used 2004 EIQ data to calculate actual emission changes instead of calculating the average annual emissions over the most recent 2 year operating period. If so, the net emission changes for the project are questionable. Also, see comments below regarding Table B-5.

BACT Analysis, Evaluation of Regenerative Thermal Oxidation (RTO). The department states that a RTO system may generate SO3 [from SO2 entering the RTO] which may subsequently react with other pollutants and which may produce a detached plume with an opacity which may need to be reduced by using a wet scrubber to reduce the amount of SO2 entering the RTO. The cost impact for the CO BACT/RTO analysis is then based on a "RTO + wet scrubber" installation scenario. The BACT analysis is flawed and not acceptable in that air quality related impacts [opacity, plume] are considered when such considerations may not be so considered regarding BACT decisionmaking. Air quality concerns/impacts are addressed separately as part of the air quality impact analysis. Ditto: a unit's visibility impacts and the "additional impact analyses" section of the regulation. BACT analyses may take into consideration only economic, energy and "non-air" related environmental impacts as well as North County Remand related considerations. The department has not shown that, e.g., the suggested plume will cause unacceptable/unreasonable non-air environment impacts. What will be the environmental harm of the suggested plume formation from a non-air related standpoint and why would such harm be unreasonable?

There may be a resulting need to install a scrubber for air quality related reasons [e.g., to reduce the suggested plume's opacity, to reduce adverse visibility impact] but that need or concern is a separate matter addressed by the PSD regulation and the scrubber's cost and use may not be

factored into the CO BACT analysis (or any BACT analysis) because air quality related needs/ concerns/benefits may not be considered for BACT analysis purposes. EPA guidance exists tying BACT decisionmaking to non-air environmental impacts.

It also appears the department has not applied the requirements of the North County Remand; search the NSR guidance database for relevant guidance. A RTO may be better than GCP in reducing toxic emissions.

Generalized statements that the installation of add-on control will place the company at a competitive disadvantage must be proven; the disadvantage benchmark must be justified. Simple generalized statements may not be used to eliminate a control alternative; justification and substantiation is needed which may be very difficult for those type arguments.

The BACT analysis must be re-done without consideration of the suggested need for a wet scrubber; also, the North County Remand must be considered and applied if toxic emissions are a possibility. The current BACT analysis, including the cost impact estimate, is not acceptable.

Selection of BACT CO Control Technology for the Finish Mill System. As stated elsewhere in this letter, the proposed BACT emission limit is based on an AP-42 EF which has not been justified as BACT for the particular unit.

Appendix B, Table B-5. The average 2 year average emissions appear to be based on thru-puts for 2000 and 2003. The years used for actual emission purposes must be two consecutive years and generally must be for the most recent period of operation. Why wasn't 2003 and 2004 information used? The department's actual emissions estimates appear questionable, in part, for this reason. We commented elsewhere in this document regarding other concerns such as the apparent use of unjustified AP-42 EFs.

Regarding the 3rd section of the table (i.e., the one based on project 2003-05-118), it's not clear how the given emissions were calculated; we could not derive the given emissions.

The VOC emission estimates, for which the application indicates an increase slightly below 40 TPY, are questionable in that the EFs factors used by the department have not been justified. They were apparently provided by the application without verification of adequacy/ representativeness by the department.

Permit Application

The applicant argues against the use of a RTO based on suggested operational problems regarding a RTO installed and operating at a TXI cement plant in Texas. We're discussed the situation with someone with the Texas Commission on Environmental Quality and it appears any technical problems that may exist are now considered reasonable/acceptable by the owner and the state agency. The owner has agreed to continue operation of the RTO; we understand that the RTO has not been and will not need to be re-designed. TCEQ's most recent review analysis provided us states "... TXI will be able to reduce the operating temperature of the RTO enough to meaningfully reduce natural gas usage, electric consumption, and kiln limitations created by

exceeding system pressure drop safe operating margins." As such and regarding the proposed Buzzi project, we currently see no basis for rejecting the use of a RTO from a technical or operational standpoint. Control levels less than a control technique's most effective level of control may be considered as a BACT alternative; see section IV.C.2 (including Note 1) of the NSR Workshop Manual. A lower level of RTO operation at the TXI plant apparently will result in less cost impact and acceptable system operations making the RTO acceptable to the company involved.

Please contact me or Dan Rodriguez of my staff at 913/551-7020 if you have questions pertaining to this letter.

Sincerely,

JoAnn M. Heiman
Chief
Air Permitting and Compliance Branch