Illinois Environmental Protection Agency
Bureau of Air
Permit Section

June 2013

Responsiveness Summary for Public Questions and Comments on the PSD Permit Extension Request from Universal Cement LLC for Its Construction Permit for a Portland Cement Manufacturing Plant in Chicago, Illinois

Source Identification No.: 031600GVX
Permit No.: 08120011

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DECISION

On June 19, 2013, the Illinois Environmental Protection Agency (Illinois EPA) issued a revised air pollution control construction permit to Universal Cement for a new portland cement manufacturing plant in Chicago. The revised permit merely extends the date by which construction on this new plant must commence under this permit by 18 months. The permit is identical to the draft of the revised construction permit that the Illinois EPA made available for the public comment period except that it includes the date that it was issued, i.e., June 19, 2013.

Copies of the revised permit can be obtained from the contact listed at the end of this document. The permit and additional copies of this document can also be obtained from the Illinois EPA website www.epa.state.il.us/public-notices/.

BACKGROUND

On December 20, 2011, the Illinois EPA, Bureau of Air, issued an air pollution control permit to Universal Cement LLC, to construct a portland cement manufacturing plant in Chicago. The new plant would produce cement for Ozinga, an existing concrete supply company in the Chicago, northern Indiana and southwest Michigan areas. The emission units at the plant would include a cement kiln, clinker cooler, a gas-fired finish mill, fuel and material handling operations, and various ancillary and support operations.

This construction permit identifies the applicable rules governing emissions from the proposed kiln and other emission units that are part of the plant, and establishes enforceable limits on their emissions. The permit also establishes appropriate compliance procedures, including requirements for emissions testing, continuous emission monitoring, recordkeeping and reporting. Universal Cement will be required to carry out these procedures on an ongoing basis to demonstrate that the proposed plant is operating within the limits established by the permit and that emissions are being properly controlled.

On February 7, 2013, Universal Cement requested an 18-month extension of the “deadline” for commencement of construction of this new plant under the original permit. Universal Cement’s request describes a number of pre-construction activities that it has undertaken for the plant since the permit was issued and a number of additional tasks that will need to be completed before construction can commence. Based on the activities that Universal Cement has undertaken to date for this new plant and the nature of the tasks that must still be completed before construction can commence, the Illinois EPA found that the requested 18-month extension of the permit is justified.

Universal Cement also included technical information in its request for extension of the permit. It provided a reevaluation of Best Available Control Technology (BACT) that confirmed that the original determination of BACT made for the plant under the federal rules for Prevention of Significant Deterioration of Air Quality (PSD), 40 CFR 52.21, is still current. It also provided a reevaluation of Lowest Achievable Emission Rate (LAER) that confirmed that the original LAER determination for the plant is still current. Universal Cement also addressed the other aspects of PSD review in its request, including the air quality analyses that were performed to address the impacts of this new plant. It showed that the original analyses conducted for the plant are still protective of ambient air quality.

PUBLIC COMMENT PERIOD

The Illinois EPA Bureau of Air administers permit programs for sources of emissions. Following its initial review of Universal Cement's request for extension of its construction permit, the Illinois EPA, Bureau of Air made a preliminary determination that the request met the applicable requirements for an extension.

To provide an opportunity for public review and comment on the requested extension of the construction permit for this new plant, the Illinois EPA prepared a draft of a revised permit that would provide the requested extension. The public comment period for the proposed extension of the construction permit began with the publication of notice in the Southtown Star on March 25, 2013. Notices were published in both English and Spanish. The comment period closed on April 25, 2013.

AVAILABILITY OF DOCUMENTS

The revised construction permit that has now been issued to Universal Cement and this responsiveness summary are available at the Illinois EPA's internet site at http://www.epa.state.il.us/public-notices/.[1] Copies of these documents may also be obtained by contacting the Illinois EPA at the telephone numbers listed at the end of this document.

APPEAL PROVISIONS

The revised construction permit for this plant extends approval to construct pursuant to the federal PSD rules. Individuals who submitted comments on the draft of the revised construction permit for the plant may petition the United States Environmental Protection Agency (USEPA) to review the PSD provisions of the revised permit that has been issued.[2]

In addition, because comments were submitted on the draft of the revised permit for the plant, the revised permit that has now been issued will not become effective until after the period for filing of an appeal has passed. The procedures governing appeals are contained in the Code of Federal Regulations, "Appeal of RCRA, UIC and PSD permits," 40 CFR 124.19. If an appeal request will be submitted to USEPA by a means other than regular mail, refer to the website of the Environmental Appeals Board (EAB) for instructions (http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf). If an appeal will be sent by regular mail, it should be sent on a timely basis to the following address:

[1] If necessary arrangements can be made with USEPA, this information may also be available on the Illinois Permit Database at http://www.epa.gov/reg5oair/permits/ilonline.html.

[2] As previously indicated, no changes were made between the draft of revised permit and the revised permit that has now been issued except to include the date that the revised permit was issued.

Clerk of the Board
United States Environmental Protection Agency
Environmental Appeals Board
1200 Pennsylvania Avenue, N.W.
Mail Code 1103M
Washington, D.C. 20460-0001

Telephone: 202/233-0122

QUESTIONS AND COMMENTS WITH RESPONSES BY THE AGENCY

1. A permit extension is not intended to be a hedge allowing a speculative enterprise to lock in emission limits and PSD increments for a project that may not occur. According to the relevant guidance, a permittee seeking an extension must adequately show a number of things, including an "assur[ance] that construction will be initiated during the extension period and that construction will be continuous." *See* Memorandum, September 8, 1988, from Wayne Blackard, USEPA Region IX, Re: EPA Region IX Policy on PSD Permit Extensions (Blackard Memo). *See also* Letter, June 10, 2002, from Steven C. Riva, USEPA, to Hector M. Alejandro, Puerto Rico Electric And Power Authority, Re: PREPA San Juan Repowering Project (Riva Letter).[3] According to the Project Summary, page 3, Universal Cement has not started construction of the plant due to "the magnitude of the project and the configuration of the property on which the plant would be located" and the fact that it cannot compete with other projects in the international market for engineering firms. Universal Cement does not even have an engineering and site plan, which is a prerequisite to yet another needed preconstruction hurdle—approval by zoning local authorities.

   Universal Cement has adequately justified its need for an extension of the construction permit originally issued for the proposed plant. It has indicated that it has undertaken substantial "preconstruction activity" in preparation for commencement of construction. It has identified a key factor, i.e., lack of responsiveness by engineering contractors, which could not reasonably have been anticipated, that has impeded its development of a detailed site plan for the plant. This site plan is needed to obtain approval for the plant from the City of Chicago as a Planned Development, which is required prior to commencement of construction. The City of Chicago webpage indicates that the approval process for a Planned Development requires at least six months and may require more time if unanticipated issues or delays arise during the review process. In this regard, 40 CFR 52.21(r)(2) merely provides that the permitting authority "… may extend the 18-month construction period upon a satisfactory showing that an extension is justified." As related to the need for additional time to commence construction, Universal Cement's request for a permit extension has met the relevant regulatory requirement for receiving an extension.

   This comment did not demonstrate that the justification for requesting an extension is insufficient. In particular, this comment did not show, as it implied, that this project is "a speculative enterprise," i.e., a

[3] Available respectively at www.epa.gov/region07/air/nsr/nsrmemos/extension.pdf and www.epa.gov/region07/air/nsr/nsrmemos/20020610.pdf.

project to which Universal Cement is no longer committed and that is unlikely to proceed. Rather, the factual observations made by this comment confirm that this project is a substantial undertaking. As such, it is not unreasonable that Universal Cement has been unable to commence construction within the term of the initial permit.[4]

As this comment claims that Universal Cement's justification for requesting an extension is inadequate when compared to certain "guidance" from USEPA, the comment overstates the nature of that guidance. It also places undue reliance on the cited guidance, particularly as that guidance did not even originate from USEPA Headquarters, but from USEPA's Regional Offices.[5] In this regard, 40 CFR 52.21(r)(2) addresses when a permit will expire or cease to be valid. With respect to extension of a permit, it merely provides that the Administrator (in this case the Illinois EPA) "may extend the 18-month period upon a satisfactory showing that an extension is justified."

In addition, USEPA's draft *Guidance Document for Prevention of Significant Deterioration Permit Modifications*, released by USEPA's Office of Air Quality Planning and Standards in June 11, 1991 (1991 USEPA Draft Guidance), is a more appropriate source of guidance on permit extensions than the documents cited in this comment. With respect to need for and timing of an extension, the 1991 USEPA Draft Guidance suggests that "Extensions shall be granted to virtually all good faith applications for extensions to which the affected States do not object. A *good faith effort* shall include a certified statement that the applicant currently plans to commence construction by a specific date that falls within the requested extension period." 1991 USEPA Draft Guidance, p. 7-2. Universal Cement's request for extension of the permit has satisfied this guidance.

2. Universal Cement has not shown that if an extension is granted, it will initiate construction within the extension period or that construction will be continuous. It must provide "assurance that construction will be initiated during the extension period and that construction will be continuous." *See* guidance from USEPA Region IX in the Blackard Memorandum and from USEPA Region II in the Riva Letter.

As a factual matter, assurance that Universal Cement can commence construction of the proposed plant within the 18 month extension period is provided by the information provided in its extension request. The request lists the preconstruction activities that have been undertaken to date. The request also explains why the construction has not commenced as originally scheduled and provides a description of pre-construction activities that remain to be completed. The principal remaining preconstruction hurdle for Universal Cement is obtaining City of Chicago

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[4] This comment also did not demonstrate that the extension of the permit would inappropriately prevent other proposed major projects from proceeding as it would inappropriately reserve the available air quality resource for Universal Cement. In this regard, applications are currently not pending with the Illinois EPA for other proposed major projects in the area in which the proposed plant would be located.

[5] This comment also does not consider that guidance in this matter is not entitled to the same deference as the regulatory requirement of 40 CFR 52.21(r)(2). In this regard, the USEPA's Environmental Appeals Board (EAB) has questioned the applicability of the Blackard Memorandum, which originated in USEPA Region IX, outside of Region IX. *In re, Sumas Energy 2 Generation Facility*, PSD Appeal No. 05-03, slip opinion at 20, footnote 19 (EAB, May 27, 2005).

approval of the project as a Planned Development. The City of Chicago's webpage indicates that the various steps required for approval of a Planned Development can be accomplished, in a "best case" scenario, within 6 months, if no unanticipated issues or delays arise during the review process. The 18-month extension reasonably provides time for completion of that process, considering the possibility of some delay, the time required to complete the detailed site plans and other prerequisites for initiating the Planned Development process, and the time required to subsequently obtain a City of Chicago Building Permit.

Based on information in Universal Cement's extension request, it is reasonable to expect that construction now can commence within 18-months.[6] This comment has not offered information that indicates that Universal Cement cannot "commence" construction within the 18-month extension period. It would also not be reasonable to presume that construction activity thereafter would not be continuous.

As discussed, the regulatory requirement for an extension of a PSD permit, as provided by 40 CFR 52.21(r)(2), is "a satisfactory showing that an extension is justified." Universal Cement's extension request has met this requirement. The Riva Letter cited in this comment as "USEPA guidance" does not show that this is not the case. In that letter, USEPA only indicates that the permittee must "demonstrate that there is a reasonable likelihood that the project will go forward and construction will commence in the next 18 months." The facts in this case show a "reasonable likelihood" that construction of the proposed plant will go forward within 18 months.

3. Universal Cement has made no showing it can achieve all of the steps, much less do so and enter into a contract to commence construction within the extension period.[7] The Project Summary asserts that Universal Cement certifies that the remaining pre-construction activities can be completed within 18 months. Universal Cement's certification is meaningless and self-serving. There is no factual record to support Universal Cement's certification. In fact, Universal Cement apparently does not even have an engineering firm lined-up. For this reason alone, Illinois EPA is required to deny the requested extension of the permit.

The showing that Universal Cement has made in its extension request with respect to the timing of commencement of construction with the requested 18-month extension is sufficient. As discussed in this comment, Universal Cement has provided a certification that the remaining pre-construction activities can be completed within the 18 month extension period.[8, 9]

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[6] The 18 month permit extension that has now been issued allows for completion of preparation of application material that must be submitted to the City of Chicago, review and processing of that material by the City, and time to finalize the contractual arrangements for construction of the plant after action by the City of Chicago.

[7] This comment incorrectly suggested that the extension of the permit cannot exceed 12 months. As is discussed later in response to Comment 26, a permit extension of up to 18 months is allowed by 40 CFR 52.21(r)(2). Indeed, 18-month extensions of PSD permits are commonly provided by both USEPA and by states with SIP-approved PSD programs.

[8] Universal Cement certified to the accuracy and truthfulness of its entire Extension Request, including its plans for construction of the proposed plant, on the applicable "cover form" for an application for an air pollution control construction permit, "Construction Permit Application for a Proposed Project at a CAAPP Source," Form 199-CAAPP. Because the certification for its construction plans was made as part of the

This certification was accompanied by supporting information describing the pre-construction activities that must be completed before construction on the plant can commence.[10] Contrary to the contention in this comment that a certification is "meaningless," certifications are routinely relied upon to confirm the accuracy and truthfulness of information provided in permit applications, thereby avoiding the need to include detailed documentation for each piece of information and statement included in an application.

Incidentally, the claim in this comment that Universal Cement does not have an engineering firm is not correct. The extension request states that Universal Cement has employed two engineering firms to work on preconstruction activities.[11]

4. There is no basis in the Project Summary for the necessary finding that Universal Cement will complete construction within a reasonable period and that construction will be continuous. For this reason too, the Illinois EPA must deny the extension request.

This comment improperly presumes that a requirement identified in the Blackard Memorandum is applicable and necessary for the extension of the permit for the proposed plant. This is not the case. The extension of the permit that has been issued will only extend the deadline for commencement of construction under 40 CFR 52.21(r)(2) and will not affect the requirement that actual construction of the plant thereafter be continuous.

As explained, the extension request discusses problems that Universal Cement has encountered and tasks that remain to be completed before construction can "commence" of the proposed plant under the PSD rules. This is an acceptable justification why construction was not commenced under the original permit issued for the plant. Moreover, neither the extension request nor this comment identifies any issue which would cause construction to not be completed in a reasonable time or to not proceed in a continuous fashion. Indeed, this comment offers no information which would suggest otherwise. The extended permit that has been issued explicitly requires that construction must be commenced by the end of the 18-month extension to maintain the validity of the permit.[12] Thereafter, as provided by 40 CFR 52.21(r)(2), if Universal Cement fails to complete construction within a reasonable period of time or if construction is discontinued for a period of greater than 18 months, the construction permit would no longer be valid.

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certification provided in the Extension Request, it is subject to the applicable provisions in federal and Illinois law that pertain to the accuracy of permit applications.

[9] In this case, it would be improper for the Illinois EPA to construe the 1991 USEPA Draft Guidance to demand that Universal Cement certify that it "currently plans to commence construction by a specific date…" This is because Universal Cement's legal ability to commence construction is dependent upon future actions by the City of Chicago, a governmental entity other than the Illinois EPA. Moreover, if the City of Chicago denies Universal Cement's application for approval as a Planned Development, construction of the proposed plant would not commence.

[10] PSD Permit Extension Request Application, Universal Cement, initially submitted February 7, 2013, updated March 8, 2013 (Extension Request), Form 199-CAAPP.

[11] Extension Request, Section 2.1.1.

[12] Illinois EPA, Revised Construction Permit/PSD Approval No. 08120011, Condition 1.3.

5. The new BACT analysis submitted by Universal Cement is not sufficient. A technical prerequisite of a permit extension is a new BACT analysis.

The process used for the reevaluation of BACT, as well as LAER, was appropriate. As explained in the extension request, Universal Cement consulted USEPA's *RACT/BACT/LAER Clearinghouse* (RBLC) and identified any relevant entries in the RBLC that were not included in the previous submittals or in the Illinois EPA record supporting the December 20, 2011 BACT and LAER determinations. Universal Cement also reviewed regional USEPA and state permit databases and applied industry knowledge to determine if any other post-December 20, 2011 portland cement facility expansion projects or new permitted portland cement facilities required PSD review. Universal Cement also reviewed state agency websites for other permits to assess whether any new technologies and/or more stringent emission limits were established that were more stringent than those included in the original Universal Cement permit. While four relevant BACT determinations from after December 20, 2011 were identified, neither new state-of-the-art technologies nor any more stringent emission limits were revealed. The comment has not provided information on any additional advancements in emissions control technology or more stringent BACT/LAER limits.

The BACT reevaluation process was consistent with the relevant USEPA guidance for extensions of PSD permits.[13] The process was also consistent with guidance provided by USEPA Region II and PSD permit extension determinations made in other states.[14, 15, 16] The BACT

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[13] The 1991 USEPA Draft Guidance, while "draft," is the most comprehensive USEPA discussion available concerning extensions of PSD permits. While not controlling or governing the extension of PSD permits, it is a useful overview of the pertinent considerations for an extension of a permit. Among other things, it addresses the reevaluation of BACT that should accompany the extension of a PSD permit. This guidance indicates that "The original BACT determination can be assumed to remain appropriate, even if construction has not commenced if no significant state-of-the-art advancement in BACT is noted from the applicant's review, or from the subsequent public comment period, and not more than three years has elapsed from the time of the original BACT determination." 1991 USEPA Draft Guidance, pp. 7-4 and 7-5.

[14] In a letter, June 10, 2002, Steven C. Riva, USEPA Region II, to Hector M. Alejandro, Puerto Rico Electric & Power Authority (PREPA), Re: PREPA San Juan Repowering Project (PREPA Letter), USEPA explains that "The permit extension application should reevaluate BACT for VOC and CO to determine if it remains appropriate. If no advancement of control technology has occurred, based on reference to the BACT/LAER clearinghouse and other sources, the original BACT determination would still apply."

[15] *See also*, Proposed Extension of the Air Quality Permit and Water Supply Conditions for the Proposed Catoctin Power Project – Supplemental Environmental Review Document, Maryland Department of Natural Resources, DNR Publication 12-7172007-227. (July 2007).

[16] The South Dakota Department of Environment and Natural Resources (DENR) discussed the appropriate methodology for a re-analysis of BACT when extending the permit for the proposed Hyperion refinery:

> **DENR reviewed Hyperion's re-analysis by focusing on new information not previously reviewed or discussed prior to and during the contested case hearing in front of the Board of Minerals and Environment that may change the previous BACT determination. DENR did not conduct a full analysis of all available options, rank those options, etc., because that was conducted during the initial determination. (Statement of Basis, Construction Deadline Extension Request for the Prevention of Significant Deterioration Permit #28.0701-PSD, Hyperion Energy Center near Elk Point, Union County, South Dakota, February, 2011, p. 5.)**

In that case, the South Dakota Board of Minerals and Environment, Circuit Court of South Dakota and the Supreme Court of South Dakota reviewed the DENR's BACT determination and methodology and found "DENR followed a proper and adequate method."

reevaluation submitted by Universal Cement and reviewed by Illinois EPA was appropriate, thorough, and followed established guidance and precedent.

6. Universal Cement's attempt to show that the original permit still represents BACT and LAER, as discussed in the Project Summary, is insufficient for $PM_{2.5}$. There is no BACT or LAER analysis for $PM_{2.5}$ emissions. Pursuant to 40 CFR 52.21(j)(2), the proposed plant must be subject to BACT for "each regulated NSR pollutant that it would have the potential to emit in significant amounts". While 40 CFR 52.21(i)(2) provides that a facility is not subject to this BACT requirement "with respect to a particular pollutant" if the facility is located in an area "designated as nonattainment under section 107" for that pollutant, Cook County is currently only designated as nonattainment for the 1997 annual $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS). Cook County is not (or not yet) designated as nonattainment for the 2006 24-hour or the 2012 annual $PM_{2.5}$ NAAQS.

The Illinois EPA interprets 40 CFR 52.21(i)(2) to exempt the proposed plant from all PSD requirements for both annual and 24-hour $PM_{2.5}$, as well as from the 2012 annual $PM_{2.5}$ NAAQS. 40 CFR 52.21(i)(2) exempts only as to the NAAQS for which an area is designated as nonattainment, here the 1997 annual $PM_{2.5}$ NAAQS. Therefore, Universal Cement should be required to comply with PSD requirements for the other NAAQS for $PM_{2.5}$. This includes an analysis of increment consumption for the 24-hour $PM_{2.5}$ PSD increment.

Because Cook County, where the proposed plant would be located, is presently designated as a nonattainment area for $PM_{2.5}$, based on the 1997 annual $PM_{2.5}$ NAAQS, PSD is not applicable to the proposed plant for its emissions of $PM_{2.5}$.[17] The fact that Cook County is not (or is not yet) designated nonattainment for the 2006 24-hr $PM_{2.5}$ NAAQS and the 2012 $PM_{2.5}$ annual NAAQS does not alter the fact that Cook County is designated nonattainment for $PM_{2.5}$ and that the proposed plant must be permitted under the Nonattainment New Source Review (NNSR) rules for $PM_{2.5}$.[18] This is because Cook County is a nonattainment area for $PM_{2.5}$ for at least one $PM_{2.5}$ NAAQS. In the relevant provisions in both the PSD and NNSR rules, 40 CFR 52.21(i)(2) and 35 IAC 203.301, the status of an area for the "regulated pollutant" is the trigger for applicability. If there are multiple NAAQS for a pollutant, for purposes of applicability of PSD and NNSR, NNSR applies for a pollutant in an area that is designated nonattainment for any of those NAAQS; PSD does not apply.[19, 20] The

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In the Matter of the Prevention of Significant Deterioration (PSD) Air Quality Permit Application of Hyperion Energy Center – Hyperion Refining LLC – Permit #28.0701 – PSD, Circuit Court of South Dakota (6th Cir.) (Feb. 9, 2012) slip opinion p. 6, Aff'd 2013 SD 10 (SD Sup. Ct. 2013).

[17] 40 CFR 81.314.

[18] Also note that while the USEPA has not made its nonattainment designations for the new 2012 annual $PM_{2.5}$ NAAQS, the new 2012 annual NAAQS is more stringent than the former 1997 annual $PM_{2.5}$ NAAQS. USEPA has already indicated that this change should not alter the status of Cook County as a nonattainment area for $PM_{2.5}$. www.epa.gov/airquality/particlepollution/2012/20092011table.pdf

[19] Per 40 CFR 52.21(i)(2), "The requirements of paragraphs (j) through (r) of this section shall not apply to a major stationary source or major modification with respect to a particular pollutant if the owner or operator demonstrates that, as to that pollutant, the source or modification is located in an area designated as nonattainment under section 107 of the Act."

emissions thresholds for PSD and NNSR, address the potential annual emissions of different pollutants from a proposed project, in tons per year, without any consideration for time periods if multiple NAAQS have been adopted for a pollutant.

The issue of possible PSD and NNSR applicability for the same pollutant was also recently addressed by USEPA in the preambles for its rulemaking for the revised 2012 annual $PM_{2.5}$ NAAQS. In the proposed rule, USEPA specifically requested comment on this point. Then, in the final rule, USEPA determined:

> **Regarding the issue of potential dual review for multiple averaging times of the $PM_{2.5}$ NAAQS, since the proposal, the EPA has determined that existing regulations resolve this issue in favor of the conclusion suggested in the proposed rule. Based on the express terms of existing regulations, only the NNSR permit requirements, and not PSD, apply for the pollutant $PM_{2.5}$ in cases where the area is designated nonattainment for at least one averaging time of the $PM_{2.5}$ NAAQS.** [21]

In this rulemaking, USEPA also explains this determination, stating that 40 CFR 52.21(i)(2) expressly excludes from PSD any pollutant for which an area is designated nonattainment, without reference to a particular averaging period, and that after closer inspection prompted by the comments on this issue, USEPA does not read these provisions to authorize application of PSD to a pollutant when an area may be designated nonattainment for a particular averaging time, while also designated attainment or unclassifiable for a different averaging time for the same pollutant.

Based on the fact that $PM_{2.5}$ is currently properly addressed in Cook County as a nonattainment pollutant, the proposed plant would be regulated under NNSR rules if it were a "major source" of $PM_{2.5}$ emissions. However, the construction permit for the plant restricts its potential emissions of $PM_{2.5}$ to less than the major source threshold of 100 tons per year. Therefore, its emissions of direct $PM_{2.5}$ are below the applicability threshold at which the requirements of the NNSR rules would be applicable. However, contrary to the implication in this comment, this does not mean that the plant's $PM_{2.5}$ emissions would not be controlled and are not addressed under the permit to assure that the emissions are not major. A variety of measures are required to be implemented to control particulate emissions of the plant as it is subject to PSD for its emissions of PM and PM_{10}. In addition, the control train on the kiln would include a circulating fluidized bed absorber (CFBA), the first to be employed on a cement kiln in the United States.

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[20] Per 35 IAC 203.201, applicability of NNSR in Illinois is on a pollutant-by-pollutant basis, "In any nonattainment area, no person shall cause or allow the construction of a new major stationary source or major modification that is major for the pollutant for which the area is designated a nonattainment area, except as in compliance with this Part for that pollutant."

[21] Final Rule National Ambient Air Quality Standards for Particulate Matter, 78 FR 3086, 3263 (January 15, 2013).

The CFBA will facilitate and enhance effective control of the kiln's emissions of $PM_{2.5}$.[22]

7. The proposed plant will be a major source for emissions of $PM_{2.5}$ and will result in a significant increase of $PM_{2.5}$ because the emissions of the $PM_{2.5}$ precursors NOx and SO_2 will be greater than 40 tons per year.

In order to be a major project for direct $PM_{2.5}$ emissions, the plant must have potential emissions of 100 tons per year or more of direct $PM_{2.5}$. This is not the case here, given the restrictions on emissions of $PM_{2.5}$ in the permit for the plant.

The fact that the plant's emissions of regulated precursors to $PM_{2.5}$, i.e., NOx and SO_2, will each be major does not have any role in the applicability of NNSR for the plant's "direct" $PM_{2.5}$ emissions.[23] Applicability of NNSR to the plant is addressed separately for each of these three regulated pollutants, i.e., direct $PM_{2.5}$, NOx and SO_2. In this regard, USEPA explicitly stated in its 2008 $PM_{2.5}$ rulemaking that the applicability thresholds apply to each pollutant individually rather than triggering NNSR requirements for all pollutants listed with $PM_{2.5}$ if one of those pollutants exceeds the threshold: "The thresholds set out in the definitions are applied to each relevant pollutant individually, that is, to direct $PM_{2.5}$ emissions and to emissions of each pollutant identified as a $PM_{2.5}$ precursor for the applicable NSR program." See, Implementation of the New Source Review Program for Particulate Matter Less than 2.5 Micrometers ($PM_{2.5}$) ("$PM_{2.5}$ NSR Rule"), 73 FR 28,321, 28,331 (May 16, 2008) (emphasis added).[24, 25]

Later in the preamble for this 2008 rulemaking, USEPA provides further confirmation that emissions of $PM_{2.5}$ and emissions of $PM_{2.5}$ precursors (i.e., NOx and SO_2) are to be addressed individually under NSR.

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[22] As described in Section 5.1.2.2.1 of Universal Cement's BACT analysis for the proposed kiln (November, 2009 submittal), "cooling of the exhaust gases in the CFBA and the presence of lime particles may induce formation of particles by providing an atmosphere for condensation and nucleation of condensable and fine particulate matter and $PM_{2.5}$. These particles will be removed by the baghouse downstream of the CFBA. Thus, condensable and $PM_{2.5}$ emissions are effectively controlled."

[23] The requirements of NNSR have been applied to the proposed plant for NOx and SO_2 as these pollutants are precursors to $PM_{2.5}$. This is because Cook County is designated nonattainment for $PM_{2.5}$ and the permitted emissions of NOx and SO_2 from the plant would each be major, i.e., 100 tons per year or more. Per the original 2011 permit, the plant's emissions of NOx and SO_2 are subject to full NNSR permitting obligations. This includes application of LAER and the provision of emission offsets.

The requirements of PSD have also been applied for SO_2. This is because SO_2 is also a "pollutant" in its own right, with its own NAAQS, and Cook County is designated attainment or unclassified for all SO_2 NAAQS. The requirements of PSD have also been applied for NOx. This is because NOx is also regulated as a precursor "pollutant" to NO_2 and Cook County is designated attainment or unclassified for all NO_2 NAAQS.

[24] USEPA's Final Rule implementing NSR for $PM_{2.5}$ also states that "[f]or direct emissions of $PM_{2.5}$, these final rules define the significant emissions rate as 10 tpy." *See*, Implementation of the New Source Review (NSR) Program for Particulate Matter Less Than 2.5 Micrometers ($PM_{2.5}$), 73 FR 28,321 (May 16, 2008).

[25] This approach is consistent with the well-established treatment of ozone precursors under the PSD program. In particular, a project that is a "major" project for its emissions of volatile organic material is not subject to PSD review for NOx unless the project is also separately qualifies as a "major project" for emissions of NOx.

As discussed in the proposal, the use of existing significant emission rates where the $PM_{2.5}$ precursor is also regulated under NSR as a separate criteria pollutant harmonizes the NSR program for $PM_{2.5}$ with the NSR programs for those other criteria pollutants. This enables a source to determine the NSR impacts of proposed modifications by reference to a single significant emissions rate for each pollutant, and enables streamlining of determinations regarding the applicable control technology and analysis of air quality impacts into a single and comprehensive decision making process for both $PM_{2.5}$ and other criteria pollutants that also cover $PM_{2.5}$ precursors.
(See, 2008 $PM_{2.5}$ NSR Rule, 73 FR at 28,334, emphasis added)

The interpretation proposed in this comment would be inconsistent with the manner in which USEPA and state authorities have conducted NSR permitting.[26]

8. The proposed plant should be required to comply with PSD for other $PM_{2.5}$ NAAQS, including the 24-hour $PM_{2.5}$ PSD increments. Otherwise, facilities subject to the 1997 annual NAAQS, could be constructed and consume the 24-hour increment, which is set separately from the annual increment by 40 CFR 52.21(c), without having to go through PSD review to assess that impact or be subject to BACT to minimize the amount of increment consumed. Significant deterioration of 24-hour $PM_{2.5}$ air quality will not be protected.

This comment is based on the flawed assumption of this commenter, as discussed above, that PSD is now applicable in Cook County for 24-hour $PM_{2.5}$ air quality and should be applied to the proposed plant. As this is not the case, the potential negative consequences that are suggested in this comment cannot occur. Moreover, as Cook County is nonattainment for $PM_{2.5}$, it is reasonable to expect that reductions in emissions of $PM_{2.5}$ will occur that will result in improvements in both annual and short-term air quality for $PM_{2.5}$.[27]

9. Exempting the proposed plant from all PSD review for $PM_{2.5}$ is an unreasonable interpretation because it has the bizarre effect of not subjecting $PM_{2.5}$ to any preconstruction requirements. Because the plant is not "major" for $PM_{2.5}$, Illinois EPA also interprets 35 IAC 203.206(b)(6) to exempt $PM_{2.5}$ from NNSR. Therefore, the plant is subject to neither PSD nor NNSR.

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[26] USEPA has consistently treated direct $PM_{2.5}$ and its precursors as separately regulated pollutants in the PSD permits it has issued. For example, in the final permit for the Eni Holy Cross Drilling Project (Permit No. OCS-EPA-R4007, issued October 27, 2011), USEPA Region IV made separate BACT determinations for new and modified emission units emitting NOx and direct $PM_{2.5}$ because the project would significantly increase emissions of these pollutants. BACT determinations were not made for SO_2 emissions from such units, even though SO_2 is a $PM_{2.5}$ precursor, because the project's SO_2 emissions increases were not significant.

[27] Indeed, if the 24-hour $PM_{2.5}$ PSD Increment could legally be applied, as sought by this comment, the likely result would be to expand the air quality resource that would be available for future projects relative to the 24-hour PSD Increment. This is because of the improvements in short-term $PM_{2.5}$ air quality that occur following the baseline date due to the reductions in emissions that will be needed to attain and maintain compliance with the new 2012 annual $PM_{2.5}$ NAAQS.

It would be bizarre to not address NNSR and PSD for the proposed plant in the manner in which they have been addressed. This is because the Illinois EPA has addressed these rules in a manner that is consistent with the actual provisions of the relevant rules and well-established guidance from USEPA on the proper implementation of these rules.

In addition, it is reasonable as a matter of environmental policy for the permitting of a proposed project to be based on an area being either attainment or nonattainment for $PM_{2.5}$. It would be bizarre to approach the permitting of the proposed plant based on being attainment for the 2012 annual $PM_{2.5}$ NAAQS and nonattainment for 2006 annual $PM_{2.5}$ NAAQS as suggested by this comment. The fact that the differing approaches to applicability in the PSD and NNSR rules result in this proposed plant not being subject to NNSR for its emissions of $PM_{2.5}$ is a logical consequence of the need for the applicability of NNSR to be applied in areas that are designated nonattainment for a particular pollutant. The status of the source must be considered individually for each pollutant for which the area is designated nonattainment.

10. For emissions of greenhouse gases (GHG), Universal Cement's attempt to show that its original permit still represents BACT is insufficient. There have been advances in technology for control of GHG emissions since the 2008 application initially submitted by the applicant.

As confirmed by Universal Cement's BACT reevaluation, the information concerning control of GHG emissions in the GHG BACT analysis supporting the 2011 permit[28] and the Illinois EPA's Original 2011 Responsiveness Summary[29] remains valid. The comment has not identified technical evidence supporting its contention that there have been advances in GHG control technology, particularly as applied to the portland cement industry.

The BACT reevaluation for GHG emissions appropriately followed the same BACT reevaluation process as already discussed above in response to Comment 5 and the same guidance and precedent established for extension of PSD permits. Universal Cement identified only one new BACT determination for GHG emissions from a portland cement plant, i.e., a 2012 determination for the GCC Rio Grande facility in Pueblo, Colorado. However, the GHG BACT limit in that permit is higher than that set for the proposed plant in the original 2011 permit. New control technologies for GHG emissions were not identified, so a new analysis of GHG BACT and GHG BACT limits is not needed.

11. The project summary for the 2011 permit asserts that carbon capture and sequestration (CCS) is "in its developmental infancy at this time" and that pipelines may not be feasible near the proposed plant site. Even if these assertions were true then, they were made several years ago and should be updated. The fact that so many people in Illinois, including some at Illinois EPA, have been promoting the use of carbon capture and sequestration and seeking federal funding for implementing it in Illinois as part of the FutureGen 2.0 project and have held up carbon capture as

[28] Universal Cement, *NSR Permit Application Supplement – GHG Applicability*, February 2011.
[29] Responsiveness Summary for Public Questions and Comments on the Construction Permit Application from Universal Cement, LLC, Illinois EPA, December, 2011 (Original 2011 Responsiveness Summary). Specifically, Comment/Response 23, on pp. 16-22, addresses GHG emissions and carbon capture and sequestration.

feasible and ready for deployment requires, at a minimum, that Illinois EPA undertake a new assessment of CCS based on current information for purposes of the this project.

This comment improperly portrays general support for the FutureGen 2.0 project,[30] which would be designed to include CCS, as a factual conclusion that CCS technology is now generally demonstrated and available for Universal Cement's proposed plant, with significant advances having occurred in CCS technology since 2011. However, the FutureGen 2.0 project, which the comment cites as proof of the development of CCS technology in Illinois, would be a "clean coal demonstration project" supported by the United States Department of Energy (USDOE).[31] The purpose of the project would be to demonstrate the feasibility of CCS, as well as oxy-combustion technology, as techniques to reduce the emissions of CO_2 and other pollutants from the use of coal to produce electricity.[32] Moreover, the FutureGen Project is still a proposed demonstration project that has not even begun construction, much less produced any information or results. In addition, the demonstration of oxy-combustion technology is also an essential aspect of the FutureGen Project. Oxy-combustion technology would facilitate capture of CO_2 emissions at the FutureGen plant as this technology would reduce the volume and raise the CO_2 concentration of the exhaust from the boiler system, thereby facilitating CCS. Finally, the proposed cement plant would be a commercial facility constructed without funding from USDOE.

Promoting a project and supporting federal funding for a project that would assist the development of CCS technology does not show that CCS technology has already been "demonstrated in practice." This is

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[30] FutureGen 2.0 is a public-private partnership, of the United States Department of Energy (USDOE) and the FutureGen Alliance, with the purpose of developing the world's first large-scale, oxy-combustion electric generation unit integrated with carbon capture and storage (CCS). One part of the project would be located at the existing Meredosia Power Station, which is located on the Illinois River in central Illinois. One of the generating units at the station would be repowered with a new oxy-combustion boiler. CO_2 sequestration would occur at a site approximately 30 miles to the east in rural Morgan County.

[31] As explained by the USDOE in its Draft Environmental Impact Statement: FutureGen 2.0 Project, DOE/EIS-0460D, April 2013 (FutureGen 2.0 Draft EIS):

> **For more than 25 years, DOE has been co-funding large-scale demonstrations of clean coal technologies to hasten their adoption into the commercial marketplace. Developing this technology is critical for reducing conventional air pollutants and CO_2 emissions, maintaining the ability to continue to use abundant domestic coal reserves, and keeping the nation's electricity supplies secure and affordable. Federal financial support is needed to help reduce the risks inherent in these first-of-a-kind projects. One of DOE's clean coal demonstration efforts, the FutureGen Initiative, is designed to demonstrate the commercial feasibility of coal-fueled energy generation with carbon capture and storage at a commercial scale. (FutureGen 2.0 Draft EIS, Volume 1, p. 1-2.)**

[32] As described by the USDOE, the purpose of the FutureGen 2.0 project would be to demonstrate both oxy-combustion and CCS technologies at a commercial scale for a coal-fired power plant:

> **A successful project would generate technical, environmental, and financial data from the design, construction, and operation of the integrated electric generation, pipeline, and injection facilities to confirm that oxy-combustion technology with CO_2 capture and permanent underground storage can be implemented at a commercial scale. The cost-shared financial assistance from DOE would reduce the risk to the Alliance in demonstrating the technology at the level of maturity needed for decisions on commercialization.**
> **(FutureGen 2.0 Draft EIS, Volume 1, p. 1-7.)**

particularly true as the FutureGen 2.0 project would be supported by USDOE to demonstrate the economic and commercial viability of CCS at a coal-fired power plant, an application that is different than the manufacture of portland cement. Illinois' support for this demonstration project does not change the fact that changes in CCS technologies have not occurred that would now make it commercially available for the proposed cement plant.[33]

12. Universal Cement's attempt to show that its original permit still represents BACT and LAER is insufficient. The analysis appears to have only considered whether more recent permits have been issued since December 2011 and whether those permit rely on new control technology that was not previously considered. The Illinois EPA has not considered emissions data from existing facilities and whether the data shows that pollution controls to be used at the proposed plant can and have achieved lower emission rates. For example, other plants have been using SNCR and baghouses and there are several additional years of emission data from existing sources that were not considered by the Illinois EPA in 2011.

As previously discussed in response to Comment 5, the process used for the reevaluation of BACT, as well as LAER, was appropriate. The BACT reevaluation process was consistent with the relevant USEPA guidance for extensions of PSD permits. Universal Cement consulted numerous sources of information and pursuant to the BACT reevaluation process found that no plant was identified with more stringent limits than those established in the 2011 permit for the proposed plant. The comment suggests that a review of actual emissions data of portland cement plants using SNCR and baghouse technology should be included in the Extension Request. This suggests that the entries for portland cement plants subject to PSD permitting in the RBLC are not of comparable quality or may not follow the well-established Top-Down BACT Process.[34] To assume this would be unreasonable and inappropriate. Moreover, the EAB has discussed the fact that performance test data from short-term or limited operating history may not be representative of emissions over the operating life of the equipment.[35] This is of particular relevance for a permit extension

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[33] Indeed, there have been only minor developments in the technology for capture of GHG emissions from portland cement plants and this technology remains in its infancy. In particular, a recent update from the Global CCS Institute, in February 2013, indicates that at most several desktop studies have been completed for CO_2 capture technologies in the cement industry and four early stage pilot projects are several years away from producing meaningful results. (http://www.globalccsinstitute.com/insights/authors/dennisvanpuyvelde/2013/02/20/update-co2-capture-cement-production)

[34] The Top-down BACT procedure is set forth by USEPA in its *New Source Review Workshop Manual*, Draft, October 1990 (NSR Manual). In particular, the NSR Manual, p. B.24, suggests that "manufacturer's data, engineering estimates and the experience of other sources provide the basis for determining achievable limits."

[35] In the PSD permit appeal for the Russell City Energy Center, the EAB stated:

> **Agency guidance and our prior decisions recognize a distinction between, on one hand, measured "emission rates," which are necessarily data obtained from a particular facility at a specific time, and on the other hand, the "emissions limitation" determined to be BACT and set forth in the permit, which the facility is required to continuously meet throughout the facility's life. Stated simply, if there is uncontrollable fluctuation or variability in the measured emission rate, then the lowest measured emission rate will necessarily be more stringent than the "emissions limitation" that is "achievable" for that pollution control method over the life of the facility.**

where the BACT reevaluation is focused on newly permitted facilities and any test data would only be a snapshot of the facility's initial performance and emissions.

In addition, as discussed in the Extension Request, USEPA undertook and completed a revision to the New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) for portland cement plants subsequent to the issuance of the original permit for the proposed plant.[36] That rulemaking was based on an extensive review of available control technologies and currently achievable emission limits for this industry. Taking into account the actual cement plant emissions data obtained during its rulemaking process, USEPA maintained and in some cases relaxed previously promulgated pollutant emission limits in this revision.[37] Significantly, the BACT limits established in the original permit continue to be as stringent and in some cases more stringent than the limits for new affected equipment as established in the revised NSPS and NESHAP.

Although Universal Cement looked beyond circulating fluidized bed absorption (CFBA) technology in the course of its BACT reevaluation, it did not identify any cement plants in the United States that had begun operation employing CFBA technology for reduction of emissions of various pollutants from a cement kiln.[38] Thus, no comparable new data is available for a kiln that would have the control technology that would be present on the kiln at the proposed plant.

13. As related to the potential use of natural gas as the fuel for the kilns, Universal Cement's attempt to show that its original permit still represents BACT and LAER, as discussed in the Project Summary, is not sufficient. The Illinois EPA's 2011 BACT analysis related to clean fuels is significantly outdated as it appears to be based on cost data from years prior to 2011.

    The 2011 BACT analysis concluded that the cost-effectiveness of using natural gas would be $96.60 per ton of CO_2. It is possible to revise the analysis with current projections for fuel costs. The United States Energy Information Administration (EIA) currently projects natural gas prices to be less than twice the cost per unit of energy compared to coal.[39]

(*In re Russell City Energy Center*, PSD Permit Appeal Nos. 10-01 through 10-05, 10-12, 10-13, slip opinion at 78-79, 15 E.A.D.__(EAB, November 18, 2010) quoting *In re Newmont Nev. Energy Inv., LLC*, 12 E.A.D. 429, at 441-42.)
***See also, In re Vulcan Construction Materials, LP,* PSD Appeal No. 10-11, slip opinion at 30-31, 15 E.A.D.__(EAB, March 2, 2011).**
***See also*, *In re Mississippi Lime*, PSD Permit No. 11-01, slip opinion at 26-27, 15 E.A.D.__(EAB, August 9, 2011).**

[36] Extension Request, Section 2.2, addresses the revisions to the Portland Cement NSPS and NESHAP finalized by USEPA on December 12, 2012 and published in the Federal Register on February 12, 2013.

[37] Particulate matter emission limits for new kilns and clinker coolers were relaxed as a result of the revisions to the NSPS and NESHAP published in February 2013.

[38] As already discussed, the control train on the kiln would include a circulating fluidized bed absorption (CFBA) unit. This would be the first application of CFBA technology on a cement kiln in the United States.

[39] The EIA's current projections for the prices of natural gas and coal are provided below.

The original BACT analysis for clean fuels must have used outdated natural gas prices because current prices, as well as current forecasts, indicate that it is very cost effective to burn natural gas to reduce greenhouse gas emissions. At a minimum, the Illinois EPA must redo the BACT analysis, provide the basis for its fuel price assumptions, and provide a new opportunity for public review and comment.

The reevaluation of BACT accompanying this request for a permit extension does not require reopening the BACT analysis for the original permit proceeding as claimed by this comment. To do so would require that key elements of the originally permitted plant be reconsidered at a point at which the source has already reasonably expended time, effort and funds in permitting and preconstruction activities for the plant.[40]

The 1991 USEPA Draft Guidance states that "consideration during a BACT reevaluation is given to the cost that would be incurred in changing plans and equipment if a different technology were employed." The guidance would restrict the scope and extent of the BACT evaluation for an initial permit extension, the underlying presumption being that, "the original BACT determination can be assumed to remain appropriate even if construction has not commenced, if no significant state of the art advancement in BACT is noted from the applicant's review, or from the subsequent public comment period …." 1991 USEPA Draft Guidance, pp. 7-3 and 7-4. Here, the comment does not point to any "significant state of the art advancement," but rather argues that the BACT analysis for alternative fuels must be reopened solely on the basis of changes in fuel prices. If this were required, the extension request would entail reanalysis of many of the elements of the permitted facility. Other energy and economic collateral impacts resulting from using natural gas include the need to replace ash from coal as part of the feed to the kiln, the lowered heat transfer efficiency that would result from the use of natural gas, and the effect on production yield, the impact on system airflow, and ultimately the need for a larger kiln to produce the same amount of cement Such reanalyses would confound the simple extension process set forth by 40 CFR 52.21(r). The original BACT analysis for alternative fuels should not be reopened on this basis.

In its extension request, Universal Cement followed the available guidance for a reevaluation of BACT. In the BACT reevaluation, no portland cement BACT determinations or portland cement plant permits were identified that required natural gas combustion to be used as a primary

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Year	Natural Gas ($/mmBtu)	Coal ($/mmBtu)
2014	3.12	2.62
2015	3.12	2.64
2020	4.13	2.77
2025	4.87	2.94
2030	5.40	3.10
2035	6.32	3.25
2040	7.83	3.42

[40] According to the Extension Request, the preconstruction activities for this proposed plant have included engineering work, plant layout, equipment specifications, and raw material analysis. Extension Request p. 2.1.1.

fuel in the kiln for purposes of BACT or as a control measure for GHG emissions.

With respect to the possible use of natural gas by the kiln, the 2011 BACT determination for the kiln was based on both the cost impact of the use of natural gas and the collateral environmental impact that would result. This commenter downplays the substantial collateral increase in actual NOx emissions (i.e., 40 percent increase) that would accompany use of natural gas in the kiln.[41, 42, 43] Given these circumstances, no additional opportunity for public review and comment is warranted.

It is also noteworthy that this comment is incorrect as it states that, "The Illinois EPA's analysis in 2011 concludes that natural gas firing rather than Illinois Basin coal results in a cost effectiveness of $96.60/ton of CO_2. That assertion from 2011 did not include citations or underlying cost assumptions, so it is not possible to review it for accuracy." In fact, the incremental cost effectiveness of switching from coal to natural gas was clearly identified in Universal Cement's original 2011 BACT analysis submittal, along with citations for the sources of information for fuel costs.[44, 45]

As this comment includes projections for the prices of natural gas and coal, it does not provide citations for this information. Regardless,

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[41] As cited in Universal Cement's February 2011 GHG BACT analysis, "Alternative Control Techniques Document Update – NO_x Emissions from New Cement Kilns," USEPA, EPA-453/R-07-006, November 2007, p. 34, "For PH/PC kiln systems, emissions of NOx range from 1.7 – 3.0 kg/ton of clinker (3.7 – 6.6 lb/ton) for kiln systems fueled by natural gas and 1.35 – 1.95 kg/ton of clinker (3.0 – 4.3 lb/ton) for kiln systems fueled by coal." This data equates to a 40 percent increase in NOx with natural gas firing. The kiln at the proposed plant would be a preheater/precalciner (PH/PC) kiln.

[42] Many of these collateral impacts of natural gas firing were described in the Project Summary for a Construction Permit Application from Universal Cement, LLC, Illinois EPA, September, 2011, pp. 20-22. The impacts of the incremental usage of natural gas on the cost per ton of clinker produced are also addressed in Comment/Response 26, in the Original 2011 Responsiveness Summary, on pp. 24-25.

[43] A key economic impact resulting from using natural gas would be the need to replace ash from coal as part of the feed to the kiln. This is because the ash in the coal will directly supply a key component for the cement clinker produced by the kiln. Other energy and economic collateral impacts would include the lowered heat transfer efficiency and the effect on production yield, the impact on system airflow, and ultimately the need to build a larger kiln to maintain the plant's design capacity.

[44] See Table 3-4, Universal Cement's *NSR Permit Application Supplement – GHG Applicability*, February, 2011.

[45] Based on the original cost-effectiveness analysis for the use of natural gas, a revised cost analysis can be readily prepared. It indicates that the cost to use natural gas in the proposed kiln, as compared to coal, would be $62.59 per ton of CO_2 emissions from the kiln that would be avoided. This cost is still excessive.

In particular, a current price for coal is available from the EIA's *Quarterly Coal Report: October – December 2012*, March 2013, Table 27. It indicates that in 2012 the average price of coal for industrial facilities in Illinois, other than coke plants, was $51.39 per ton. The resulting annual fuel cost for coal would be $8,140,176 (158,400 tons coal/year x $51.39/ton = $8,140,176).

A price for natural gas in 2012 is also available from the EIA. Per EIA data, the average "Illinois Natural Gas Industrial Price" for 2012 was $5.636 per thousand cubic feet. (See http://www.eia.gov/dnav/ng/hist/n3035il3m.htm.) The resulting annual cost for natural gas, assuming the same fuel heat input to the kiln, would be $20,148,700 (3,575,000 thousand cubic feet x $5.636 = $20,148,700).

The result is a cost-effectiveness value for the use of natural gas of $62.59/ton {($20,148,700 - $8,140,176) ÷ 191,867 tons CO_2 avoided} = $62.59/ton CO_2 avoided.

the use of natural gas price projections at the Henry Hub in Louisiana (which appears to be the basis for natural gas prices in the comment) is not the actual price of natural gas as delivered to an industrial facility in Chicago, Illinois.[46] In the 2011 BACT analysis, the delivered Illinois industrial sector natural gas cost data was appropriately used.[47]

14. EIA price projections are based on "all coal", including Powder River Basin coal. Since Powder River Basin coal typically costs significantly less than Illinois Basin coal, the difference between natural gas and Illinois Basin coal is even less than the general cost of coal provided by EIA.

Projections for the costs of fuels in the future, as cited by this comment, are not a valid means to evaluate the cost-effectiveness of using different fuels. Projected costs do not represent the actual costs for fuels but are predictions of future costs whose reliability cannot be confirmed and that are inherently subject to uncertainty. USEPA guidance indicates that current cost data should be used in cost evaluations that are made in conjunction with BACT determinations.[48, 49]

In fact, in addition to making projections for the price of "all coal," as cited by this commenter, EIA also assembles actual data for the amount and the price of coal used by industrial plants in different states. This data indicates that the price of coal for the proposed plant will be less than the projected prices cited by this comment.

Moreover, the comment makes a broad claim that Powder River Basin coal typically costs "significantly less" in Illinois without considering the

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[46] The "Henry Hub" is a distribution hub in Erath, Louisiana on the natural gas pipeline system. It interconnects with nine interstate and four intrastate pipelines. Due to its importance in distribution of natural gas in the United States, it lends its name to the pricing point for natural gas futures contracts traded on the New York Mercantile Exchange and the over-the-counter "swaps" traded on the IntercontinentalExchange.

[47] The comment's natural gas price data for 2014 and 2015 also appears factually incorrect. EIA data available at the time of the Extension Request showed a projection of the 2014 price of natural gas at the Henry Hub to be $3.90 per mmBtu, not $3.12 per mmBtu. United States Energy Information Administration (EIA), *Short-term Energy Outlook*, January 8, 2013.

[48] As described by USEPA, Office of Air Quality Planning and Standards, in the *EPA Air Pollution Control Cost Manual*, evaluations of the cost of alternative emission control technologies should be made using currently available data for actual costs, including current data for costs of raw materials, rather than projections for future costs. This is specifically discussed in a sample cost-analysis in Section 2.6 of this manual:

> **You will notice that the cost for O&M and the revenues from selling the gypsum by-product are constant over time. That is because we have ignored any inflation rate change in prices and have created our cash flow analysis in real terms. This is the preferred way to approach this kind of analysis, since it relies on the most accurate information available (current prices) and does not try to extrapolate those prices into the future.**
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> **(*EPA Air Pollution Control Cost Manual*, 6th ed., 2002, EPA 452-B-02-001, p. 2-36)**

Incidentally, USEPA has never completed the planned chapter in this manual that would specifically address cost evaluations for Fuel Substitution.

[49] In particular, the EIA's *Quarterly Coal Report: October – December 2012*, March 2013, in Table 27, indicates that in 2012 the average price of coal for industrial facilities in Illinois, other than coke plants, was $51.39 per ton. This is equivalent to a heat-input based price of $2.28/mmBtu. ($51.39 ÷ 22.5 mmBtu/ton = $2.28/mmBtu)

transportation and other logistical costs. This is a key element for the cost of coal for industrial facilities, like the proposed plant, that use relatively small amounts of coal, which is below the level needed to support direct receipt of Powder River Basin coal by unit train, as is typically the case for electric power plants in Illinois that use Powder River Basin Coal.

15. It is likely to cost less to use natural gas than to use Illinois Basin coal on a $/ton CO_2 basis.

This claim is not explained. As a practical matter, coal is the baseline fuel for the kiln at the plant. The cost of natural gas, in dollars per Btu heat input, is significantly more than the cost of coal. Use of natural gas, a more expensive fuel, cannot have a cost that is less than that of using the less expensive, baseline fuel for the plant.[50, 51]

16. Because natural gas has about half of the carbon content of coal, it should be expected that use of natural gas would result in half the CO_2 emissions of use of coal. The 2011 Project Summary for the original permit asserts that use of natural gas would reduce emissions of greenhouse gases by 40 percent instead of 50 percent. However, there is no basis provided for that assertion, which appears to be based on an unsupported claim by Universal Cement.

The observation made in this comment is not correct. It does not consider the chemical process by which portland cement is made. In the portland cement manufacturing process, only a fraction of the CO_2 emissions from the kiln are from the combustion of fuel. The majority of the CO_2 emissions are due to the calcination of limestone in the kiln. Accordingly, even though the carbon content of natural gas is about half

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[50] If the intended meaning of this comment is that current data for fuel costs now makes natural gas a cost effective means of reducing CO_2 emissions from the proposed plant, this is also not correct. First, it appears that the cost projections for natural gas do not represent actual costs of natural gas for the plant but data for the price of natural gas as would be traded at the Henry Hub in Louisiana. (The specific source of this data was not provided.) As such, these projections would significantly understate the actual delivered cost of natural gas as sold to the plant in Illinois. The specific source of the price projections for coal is also not provided. Second, even the cost projections provided by this commenter continue to show a substantial cost differential between natural gas and coal, with natural gas having more than double the cost of coal by 2040.

[51] Moreover, even though the cost of using natural gas for CO_2 reduction may now be less than calculated in 2011, the differences in fuel costs, as confirmed by the price projections provided with this comment, still results in a substantial difference in the overall economics of the proposed plant. The increased costs that would result from the use of natural gas in the kiln at the proposed plant would also certainly result in this project being terminated. This is because portland cement would continue to be purchased from existing plants with kilns fired with coal, likely located overseas. This imported cement would be less expensive than the cement produced by the proposed plant even after the additional transportation costs. Accordingly, as the proposed plant would be more energy efficient and would be located in the region that it would serve, if considered on a global basis, the development of the proposed plant should be expected to result in lower GHG emissions than if the plant were not developed.

that of coal, use of natural gas in the kilns would not lower the plant's emissions of greenhouse gases by 50 percent.[52]

In addition, as noted in the record for the 2011 permit, use of natural gas in the kiln would require more fuel heat input to the kiln to produce a ton of cement clinker, as compared to use of coal. This is because of the lower heat transfer efficiency provided by combustion of natural gas in a kiln.[53] In the GHG BACT analysis for a project by Lafarge at a portland cement plant in Ravena, New York, Lafarge indicated that the use of natural gas in that kiln, compared to use of coal, would reduce its thermal efficiency by 12 percent.[54]

17. The use of natural gas for the kiln would reduce waste disposal costs, material handling costs (both capital costs for equipment and operations and maintenance costs) and labor costs for the kiln. These cost savings from the use of natural gas, which would offset the higher cost of natural gas, should be included in the cost-effectiveness analysis for natural gas.

As an initial matter, this comment has not provided any information showing that there is any new technology that has become available that would support reopening the BACT analysis for fuels in this permit extension. Concerning the Original 2011 BACT analysis, one of the key elements in the rejection of natural gas as BACT was the collateral increase in NOx emissions from the kiln. The cost effectiveness analysis for the 2011 BACT analysis appropriately addressed the potential use of natural gas in the kiln considering the differences in the costs of natural gas and coal, which are the primary factor in this evaluation.

To the extent that this comment suggests that consideration of secondary items is pertinent, this comment is challenging the original permit and not the permit extension. There would be no savings on waste disposal costs from the use of natural gas because all "ash" from the coal becomes part of the ingredients used to produce clinker in the kiln and does not become waste.[55] While there would be reduced equipment and operational costs if natural gas were used, these savings would be offset by the increased heat input and fuel required by the kiln, increased electricity usage for the larger fans needed by the kiln, and additional expenses related to control of NOx emissions, potentially including the cost of

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[52] See Universal Cement's February, 2011 *NSR Permit Application Supplement – GHG Applicability*. Table A-1.2 indicates that calcination contributes the majority of the CO_2 emissions of the kiln (610,770 out of 1,017,330 tons/year).

Table 3-4 in this submittal also shows that the use of natural gas in the kiln would reduce combustion emissions of CO_2 by about 47 percent compared to use of coal, with potential combustion emissions of 214,693 tons/year, compared to 405,560 tons/year.

[53] Firing of natural gas in kilns is specifically addressed in Comment/Response 26 in the Original 2011 Responsiveness Summary, pp. 24-25, footnote 54.

[54] Table A-10 of the Extension Request notes that the Illinois EPA identified and reviewed in its analysis for the Original Permit, the BACT demonstration in the application from Lafarge Building Materials, Inc., for a portland cement project at a plant in Ravena, New York (Application/Permit No. 0124-00001-00112, eventually issued on July 19, 2011). In the BACT demonstration for that project, Lafarge indicates that "… 12 percent more natural gas fuel heat input would be required than coal to produce each ton of clinker."

[55] The ash from the combustion of coal contains mineral material, notably silica, that becomes one of the ingredients in the cement clinker produced by the kiln.

additional emission offsets for NOx.[56, 57, 58, 59]

18. Even if firing natural gas had a higher cost per ton of CO_2 avoided, Illinois EPA must show that the cost is disproportionate for the proposed plant compared to other facilities that use natural gas to reduce emissions of greenhouse gas.

The Illinois EPA is not aware of any portland cement plants operating in the United States that use natural gas as their primary fuel, i.e., for purposes other than startup or as a backup fuel. This was confirmed by Universal Cement based on its general knowledge of the portland cement industry and its specific review of state permit databases. As natural gas is not being used as a primary fuel at other portland cement plants, there are no other similar plants against which to assess, as suggested by the comment, whether the cost-effectiveness of using natural gas at the proposed plant would be "disproportionate" as compared to the use of natural gas at other facilities.

19. To the extent that Illinois EPA asserts that any increase in NOx emissions should be a basis to reject natural gas as BACT for the plant, Illinois EPA must demonstrate that increase with record evidence and further show that any such nominal increase is disproportionate to other facilities achieving greenhouse gas reductions through natural gas firing.

This impact was already addressed in the record for the original 2011 permit. The increase in NOx emissions that would accompany use of natural gas in the proposed kiln is substantial. As already explained, there are no other "similar facilities" using natural gas against which to assess whether the increases in NOx emissions from use of natural gas by the proposed plant would be disproportionate compared to other plants.[60]

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[56] Original Responsiveness Summary 2011. Specifically, Comment/Response 26, on page 25, addressed the reduced fuel efficiency of natural gas in a cement kiln compared to coal.

[57] Project Summary for Original Permit, September 2011, p 20, footnote 7, specifically addressed the need for a larger sized kiln when firing natural gas.

[58] As cited in the GHG BACT analysis submitted by Universal Cement (February 2011), "Alternative Control Techniques Document Update – NOx Emissions from New Cement Kilns," USEPA No. EPA-453/R-07-006, November 2007, page 34: "For PH/PC kiln systems, emissions of NOx range from 1.7 – 3.0 kg/ton of clinker (3.7 - 6.6 lbs/ton) for kiln systems fueled by natural gas and 1.35 - 1.95 kg/ton of clinker (3.0 - 4.3 lbs/ton) for kiln fueled by coal." This equates to a 40 percent increase in NOx emissions with use of natural gas.

[59] Even if one generously assumes that the cost of handling and processing coal is 20 percent of the base cost of the coal or $10 per ton and ignored the additional fuel, equipment and operational costs associated with use of natural gas, the adjusted cost-effectiveness of the use of natural gas would still be excessive.

The theoretical savings in costs are $1,584,000 per year. (158,400 tons coal/yr x $10/ton = $1,584,000/yr)

The estimated improvement in the cost-effectiveness of use of natural gas is only $8.30/ton of CO_2 avoided. ($1,584,000/yr ÷ 190,867 tons CO_2 avoided/yr = $8.30/ton CO_2 avoided)

[60] USEPA indicates in its "Alternative Control Techniques Document Update – NO_x Emissions from New Cement Kilns," USEPA, EPA-453/R-07-006, November 2007, p. 34 (as cited in Universal Cement's February 2011 GHG BACT analysis), that for preheater/ precalciner kiln systems, emissions of NOx range from 3.7 to 6.6 lbs per ton for kiln systems fueled by natural gas and 3.0 to 4.3 lbs per ton for kiln systems fueled by coal, which represents a 40 percent increase in NOx emissions with use of natural gas.

20. New air quality analyses have not been conducted for NAAQS and PSD Increments. Such analyses are required pursuant to the Blackard Memorandum.

"New air quality analyses" were not needed for the extension of this permit. A discussed in the 1991 USEPA Draft Guidance, the need for and extent of revised air quality analyses that are appropriate in conjunction with the extension of a permit is a matter that must be addressed on a case-by-case basis by the permitting authority. Minor source growth and other factors have not been identified that would warrant requiring new air quality analyses for this project, as generally requested by this comment.[61]

21. New air quality analyses have not been conducted for NAAQS and PSD Increments for $PM_{2.5}$. Indeed, there have been no analyses of the proposed plant's impacts on $PM_{2.5}$ air quality or PSD increments. It is unclear why Illinois EPA has not determined the plant's impacts on $PM_{2.5}$ air quality, but there is no lawful basis for neglecting to do so. Such analyses are required pursuant to the Blackard Memorandum. To the extent that Illinois EPA relies on 40 CFR 52.21(i)(2), that reliance is misplaced since that regulation only purports to waive the requirements of 40 CFR 52.21(j) through (r). The prohibition on a facility causing or contributing to a violation of the NAAQS is found in 40 CFR 52.21(d). Moreover, the appropriate interpretation of 40 CFR 52.21(j)(2) is to specific NAAQS including averaging times.

This comment is based on the same faulty interpretation of 40 CFR 52.21(i)(2) addressed in response to Comment 6.

22. There has been no assessment of the impact of the proposed plant on ozone air quality. There is no basis for failing to so. Even if 40 CFR 52.21(i)(2) exempted facilities in nonattainment areas from NAAQS demonstrations (it does not), Cook County is not designated as nonattainment for ozone. The lack of any ozone air quality analysis, alone, requires the Illinois EPA to deny the extension request.

This comment is based on a faulty premise. In fact, Cook County is designated nonattainment for ozone air quality.[62, 63] As such, Universal Cement's original application and the 2011 permit appropriately apply the provisions of NNSR to the plant's emissions of NOx, as it is regulated as a precursor to the formation of ozone in the atmosphere. Universal Cement also reevaluated LAER for NOx in the Extension Request.[64] As Universal Cement is not requesting any changes to the provisions of the original

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[61] In this regard, the relevant criterion for extension of a permit that would be set by the Blackard Memorandum, if it were applicable, would be that "the review agency is responsible for ensuring that the source requesting the extension would not cause or contribute to a PSD increment or NAAQS exceedance." Blackard Memorandum, Section II.3. This criterion has been met.

[62] See 40 CFR 81.314.

[63] The status of re-designation of the greater Chicago area, including Cook County, for ozone air quality is addressed in Section 2.2 of the Extension Request.

[64] The proposed plant is not a major project for emissions of volatile organic material (VOM), which is also regulated as a precursor to ozone. This is because the permit would restrict the plant's VOM emissions to less than 100 tons/year, below the applicable major source threshold under NNSR.

permit with the Extension Request, no further assessment is required related to ozone air quality.

23. The Project Summary notes that no quantitative analysis has been done. Rather, Illinois EPA appears to rely on the 2008 application's modeling and a qualitative conclusion that some emissions from some facilities in the greater Chicago area have decreased. The qualitative assessment that emission inventories and monitoring data show emissions have decreased, Project Summary p.5, is faulty.

Emissions from existing sources averaged over annual periods and regional (not site-specific) ambient monitoring data do not show that existing ambient air concentrations in the areas that will be affected by the proposed cement kiln have decreased. Emissions from nearby sources may have increased over short periods while decreasing over longer averages and air quality impacts from sources in the immediate vicinity may have increased even if regional concentrations at monitors decreased. Moreover, data of actual emissions and regional monitoring data are generally unhelpful for the type of NAAQS analysis required for PSD permitting purposes. NAAQS analysis for PSD permitting correctly focuses on site-specific monitored background data and modeling based on worst case permitted emission rates, so that safe air quality can be assured for the life of a facility instead of guessed upon unrepresentative regional data and recent existing source emissions that can increase in the future.

A new NAAQS modeling analysis has not been conducted that includes recent monitored ambient background concentrations from site-specific monitoring and the allowable emissions from all nearby emission sources (including those that have been permitted since the original modeling analysis was done).

Contrary to the contention in this comment, Universal Cement's extension request provided an appropriate update to the air quality analysis as needed to confirm that the proposed plant will still not cause or contribute to violations of relevant NAAQS and PSD increments.[65] Because the plant's impacts would only be significant for PM_{10} and NO_2, the update focused on these pollutants. For PM_{10}, the update included a quantitative demonstration to address the possible impact of increases in PM_{10} emissions due to "minor source growth." For NO_2, the emissions inventory showed NOx emissions have decreased.[66]

This comment is factually incorrect regarding the emission data that is the basis of the air quality analyses for the proposed plant. For short-term air quality, both the original modeling for the 2011 permit and the update to the analysis for the Extension Request were based on short term (hourly) allowable emission rates for the emission units at the proposed

[65] Extension Request. Section 4 described the impacts on increment consumption and minor source growth. In particular, Appendix B describes the quantitative assessment supporting Universal Cement's PM_{10} analysis; Appendix C describes the same for NO_2. Trends in respective data collected at nearby ambient air monitors were also provided in this submittal and showed a downward trend.

[66] "Major source growth" has not occurred in the area since December 2011. In addition, the 1991 USEPA Draft Guidance recognizes that the obligation for the performance of air quality analysis to address major source growth would fall on the sources that would be undertaking such growth. 1991 USEPA Draft Guidance, p. 7-4.

plant and for emission units in the regional emission inventory. They were not based on emission rates averaged over annual periods, as implied by the comment. The update for the Extension Request also considered hourly allowable emission rates of new and/or modified emission units since issuance of the original permit,[67] along with the unchanged allowable emissions from units at the proposed plant. For this purpose, the update conservatively assumed that all of the increased ground level concentration that is possible from minor source growth that occurred in the regional emission inventory would occur in the immediate vicinity of the proposed plant.[68]

The comment is also factually incorrect regarding the need for "site-specific" pre-application ambient monitoring data for the air quality analyses for the proposed plant. At most, such data was only needed for the air quality analyses for PM_{10}.[69] Historically, the Illinois EPA has operated two regional ambient monitoring stations in the vicinity of the site of the proposed plant, one located at Carver High School (approximately 2.5 miles from the site) and one at Washington High School (approximately 1 mile from the site).[70] Based on the proximity of these monitoring stations to the site of the proposed plant, it was appropriate to rely upon these stations to fulfill PSD requirements for pre-application ambient monitoring. 40 CFR 50.21(m)(1)(iv). Background PM_{10} data was appropriately obtained from Carver Station, which, based on prevailing winds, is upwind of the plant. This is consistent with the NSR Manual which discusses the circumstances under which regional ambient air quality data may be used.[71]

In summary, the update to the air quality analysis in the extension request was conservatively based on allowable emissions from all sources in the regional emissions inventory and the proposed plant. Ambient air quality data was obtained from an ambient monitor in the area in which the plant would be located. This quantitative analyses confirmed that

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[67] See the inventory attached to a January 24, 2013 email from Matt Will, Illinois EPA, Air Quality Planning Section, to Trinity Consultants. This was the most current inventory and included hourly allowable emission rates of units for PM_{10} and NOx.

[68] As noted in Appendix B to the Extension Request, Universal Cement applied the 9 percent minor source inventory growth factor (representing changes to the NAAQS PM_{10} inventory since the original modeling analysis supporting the 2011 permit) to the highest modeled concentrations in the original PM_{10} NAAQS analysis. These concentrations occurred in the immediate vicinity of the site of the proposed plant. Likewise, Universal Cement applied the 23 percent minor source inventory growth factor (representing additional PM_{10} increment consumed since the analysis for the 2011 permit) to the highest modeled concentrations in the original PM_{10} PSD increment analysis. These concentrations also occurred in the immediate vicinity of the site of the proposed plant.

[69] This analysis (Section 8.4 of the February, 2011 NSR Permit Application Supplement – Class II Air Quality Analysis) concluded that only background ambient monitoring data for PM_{10} was required. This was because the proposed plant's impacts for NO_2, CO and SO_2 were below the applicable "significant monitoring concentrations" at 40 CFR 52.21(i)(5) and project-specific preconstruction ambient monitoring data was therefore not required for these pollutants.

[70] Extension Request, Tables 4-1 and 4-2. The same Carver High School monitor was cited in the original modeling analysis supporting the 2011 permit. See, Section 8.2.7 of the February, 2011 NSR Permit Application Supplement – Class II Air Quality Analysis.

[71] The NSR Manual, Section C.III, references USEPA's *Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)*, USEPA 450/4-87-007, May 1987, pp. 6-8. These guidelines suggest in Section 2.4 that it is appropriate to use nearby monitoring data where an ambient monitoring station is located within 10 km of a proposed source.

minor source growth will not change the conclusions reached in the analysis that supported the 2011 permit issued for the proposed plant. Given the appropriate and even conservative nature of this update, a complete remodeling effort, as requested by this comment, is not required.

24. The NAAQS analyses for the proposed plant used unsupported and unlawful "significant impact levels" or SILs. Specifically, for 1-hour SO_2, the Illinois EPA determined that because the plant's predicted maximum hourly impact would be 5.87 µg/m^3, and the SIL is 7.85 µg/m^3, the plant cannot cause or contribute to a NAAQS violation. There is no basis for this conclusion. Illinois EPA has not made a record to demonstrate that 7.85 µg/m^3 of SO_2 on a 1-hour basis is de minimis, that is, that any analysis of impacts lower than 7.85 µg/m^3 would be pointless, futile, and not relevant to the statutory goal of preventing NAAQS violations. Illinois EPA must, at a minimum, make such a record. However, it is extremely unlikely Illinois EPA could do so, since analysis of impacts lower than 7.85 µg/m^3 are not pointless. For example, where background concentrations and contributions from other nearby facilities are 194 µg/m^3 for 1-hour SO_2, the addition of 7 µg/m^3 would cause or contribute to a violation of the hourly NAAQS, of 196 µg/m^3.

Similarly, the use of a SIL for 1-hour NOx to excuse or ignore the proposed plant's NAAQS violations simply because its contributions to such violation are lower than an arbitrarily-set 7.52 µg/m^3 is unlawful. Illinois EPA has not made a record that 7.52 µg/m^3 meets the legal requirements of the *de minimis* case law. Moreover, as USEPA noted when acquiescing to remand in *Sierra Club v. EPA*, Case No. 10-1413 (D.C. Cir. Jan. 22, 2013), a permitting authority should ensure that a facility is not causing or contributing to violations of the NAAQS or the increment even if the source's impacts are not greater than the SIL.

The SILs used for the modeling analysis that was submitted to Illinois EPA in 2011 were consistent with established USEPA guidance.[72] This guidance sets hourly SILs of 3 and 4 ppb, for SO_2 and NO_2 respectively (equivalent to 7.85 and 7.52 µg/m^3, respectively).[73] The use of these SILs was proposed in a protocol submitted to Illinois EPA and approved by both Illinois EPA and USEPA.[74, 75]

Considering actual ambient air quality as monitored in the vicinity of the proposed plant, the use of SILs is entirely appropriate in this case to determine whether the proposed plant will have "significant impacts."[76] Data from representative ambient air monitoring stations

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[72] **The use of SILs was also discussed in the Original Responsiveness Summary prepared by the Illinois EPA. *See*, Comment/Response 38 in the Original 2011 Responsiveness Summary, pp. 35-36.**

[73] **1-hour SO_2 SIL used by Universal Cement in the 2011 NSR Permit Application Supplement – Class II Air Quality Analysis, February, 2011, is consistent with USEPA's *Guidance Concerning the Implementation of the 1-Hour SO_2 NAAQS for the Prevention of Significant Deterioration Program*, dated August 23, 2010.**

[74] **December 8, 2010 letter from Trinity Consultants to Illinois EPA, related to "Class II Area Air Quality Modeling Protocol Addendum for 1-hour NO_2 and SO_2 NAAQS."**

[75] **Correspondence from Mary Portanova, USEPA Region V, to Matt Will, Illinois EPA, March 9, 2011.**

[76] **The modeling procedure used to evaluate the air quality impacts of the proposed plant, including the "Significance Analysis," is described in the Original 2011 Project Summary, p. 13.**

demonstrates a large differential between the hourly NAAQS and actual monitored concentrations of SO_2 and NO_2. The hourly SO_2 NAAQS is 75 ppb. The SO_2 monitor located at 1300 East 141st Street in Hammond, Indiana (4 miles from the site of the proposed plant) has a monitored hourly SO_2 value of 37 ppb; the SO_2 monitor located at 7801 Lawndale in Chicago has a value of 24 ppb.[77] Thus, the example provided in the comment involving a monitored ambient concentration that is very close to the SO_2 NAAQS is not applicable for the proposed plant.[78]

The circumstances are similar for NO_2 air quality and the hourly SIL. The hourly NO_2 NAAQS is 100 ppb. The 2009-2011 NO_2 hourly design value measured at the monitor at 7801 Lawndale in Chicago was 57 ppb; at the NO_2 monitor in Gary, Indiana, the value was also 57 ppb.

The 2013 decision of the District of Columbia Circuit Court cited by the comment does not address the use of SILs for SO_2 and NO_2 and is not applicable to this action. Even if it were applicable, the use of SO_2 and NO_2 SILs in the air quality analyses for the proposed plant was appropriate under the principles for use of SILs for $PM_{2.5}$ discussed in that decision and in subsequent USEPA guidance regarding that decision.[79] This is because of the large differences between the hourly SO_2 and NO_2 NAAQS and the air quality monitored in the area of the proposed plant.[80, 81]

Finally, this extension request is appropriately focused on "new PSD requirements." As there has been no change in the law or guidance regarding the SO_2 and NO_2 SILs since the original permit was issued, no additional review is warranted.

25. The Project Summary asserts "that the requested 18-month extension is justified." The Illinois EPA provides no basis for finding that 18 months, rather than some other shorter extension, is appropriate. Why not only 6-months, the amount of time that Universal Cement indicates that the local land use approval process will take?

An 18-month extension is justified in light of the nature and magnitude of the "preconstruction activities" that must be completed before Universal Cement can commence construction of the proposed plant, as discussed in the Extension Request.[82] First, certain pre-construction

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[77] This information for SO_2 and NO_2 air quality is taken from published data on Illinois EPA and Indiana Department of Environmental Management websites. The monitored values stated here reflect the design value period of 2009 through 2011.

[78] The hourly SO_2 NAAQS is set at 75 ppb, 99th percentile of 1-hour daily maximum concentrations, averaged over three years. 75 ppb SO_2 is equivalent to 196 µg/m^3.

[79] "Circuit Court Decision on $PM_{2.5}$ Significant Impact Levels and Significant Monitoring Concentration, Questions and Answers," USEPA, March 4, 2013.

[80] Sierra Club v. EPA, Case No. 10-1413 (D.C. Cir. Jan. 22, 2013), p. 14, "We agree that the parts of the EPA's rule codifying SILs in §51.165(b)(2) should remain."

[81] For NO_2, the analysis supporting the original issuance of the permit for the plant relied upon modeling performed by the applicant and repeated at USEPA's request by Illinois EPA. This analysis utilized the NO_2 SIL to show that the proposed plant would not "cause or contribute to" an exceedance of the 1-hour NO_2 NAAQS. See Comment/ Response 35 in the Original 2011 Responsiveness Summary, on pp. 31-33. This "cause or contribute to" procedure was not vacated by the January 22, 2013 court decision.

[82] Incidentally, in another comment, this commenter implied that Universal Cement could not reasonably be expected to complete all of its remaining preconstruction activities if the permit were only extended for 12 months, so the extension request should be

activities must be completed before Universal Cement can prepare the detailed plans needed to begin the land use approval process of the City of Chicago.[83] Once those plans are prepared and an application is submitted to the City of Chicago, the Planned Development approval process involves multiple steps and several different decision-makers: the initial technical review and completeness determination by the City Zoning Administrator; a public notice and public hearing before the Chicago Plan Commission; a City Council Committee hearing; and a vote of the full City Council. The best case 6-month timeframe stated on the City of Chicago's webpage assumes no new issues arise and/or no procedural delays occur in the process before the Chicago Plan Commission and the City Council. Indeed, as the City's application requirements for a Planned Development are very detailed, it is reasonable to expect that even just obtaining the initial completeness determination from the City's Zoning Administrator could be an iterative process. Then, after obtaining the Planned Development approval, Universal Cement must also obtain a Building Permit from the City of Chicago.

26. Based upon the Blackard Memorandum, the Illinois EPA must limit any extension to no more than 12 months or less. Therefore, even if the Illinois EPA had provided a basis for determining the length of the appropriate extension, it could not be more than 12 months from the original expiration date of the permit.

The Blackard Memo[84] does not limit the duration of a permit extension to 12 months. Rather, it states: "*Due to concerns of growth rights and public participation, EPA may limit an extension to 12 months, or less, from the initial date the permit was to expire*." [emphasis added] Here no such concerns exist. In this case, concerns are not present with regard to growth rights and a public comment period has provided for public participation on issues related to this extension.[85]

Moreover, per the 1991 Draft USEPA Guidance, an 18 month extension has been "the norm" for USEPA Regional Offices:[86]

> **The EPA's regulations do not state the maximum length of extension which can be granted. In practice, EPA's Regional Offices have used 18 months as the norm and, in certain**

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denied. This commenter is now arguing that an 18-month extension is too long. As discussed, the appropriate duration for the extension of the permit is 18 months.

[83] *See*, Extension Request, Section 2.1.1.

[84] The Blackard Memorandum is referenced because it is relied upon in this comment. As discussed, the authority of the Blackard Memorandum as USEPA guidance outside of Region IX is questionable. *See*, *In re Sumas Energy 2 Generation Facility,* PSD Appeal No. 05-03, slip opinion at 20 (EAB, May 27, 2005).

[85] *In re Sumas Energy 2 Generation Facility,* PSD Appeal No. 05-03, slip opinion at 23 (EAB, May 27, 2005).

[86] For specific examples of 18-month permit extensions, *see In the Matter of the Prevention of Significant Deterioration (PSD) Air Permit Application Hyperion Energy Center*, Final Decision of Board of Minerals and Environment Regarding Amended Permit #28.0701-PSD (May 2011) (Aff'd, *In the Matter of the Prevention of Significant Deterioration (PSD) Air Quality Permit Application of Hyperion Energy Center – Hyperion Refining LLC - Permit #28.0701*, (S.D. 6th Cir. 2012), Aff'd, 2013 SD 10 (S.D. Sup. Ct.2013)); *In re Sumas Energy 2 Generation Facility*, PSD Appeal No. 05-03 (EAB, May 27, 2005); *In re Brookhaven Energy LP*, New York Department of Environmental Conservation, No. 1-4722-03777/00001 (2004); *In re Astoria Energy LLC*, New York Department of Environmental Conservation, No. 2-6301-00072/00014 (2003).

instances, have allowed longer extensions. Due to the concerns of growth rights and public participation, EPA will presumptively limit extensions to durations of 18 months or less, with a maximum of two 18-month extensions per applicant (or if shorter exemptions are granted, the sum of all extensions must not exceed 36 months).
(1991 Draft USEPA Guidance, at pg. 7-5.)

27. The Illinois EPA is not authorized to extend an expired permit. Pursuant to 40 CFR 52.21(r)(2), any approval to construct expires after 18 months. Illinois EPA has no authority to extend the permit unless the permit is extended before it expires.

Because the Illinois EPA has acted on the extension request before the original expiration date of Universal Cement's permit, this comment is not relevant.[87]

In addition, the comment's interpretation of 40 CFR 52.21(r)(2) is not correct. In a case where a timely request for extension is pending, if the permitting authority were unable to act on the request within the original expiration date of the permit, this provision does not require the automatic termination of the permit. In *Sumas Energy*, the EAB rejected a petitioner's argument, based on the 1991 Draft USEPA Guidance, that a request for an extension must be filed six months before the expiration date. Both USEPA Region X, which had extended the permit, and the EAB questioned whether that "draft" guidance should properly be considered to have preclusive legal effect. The EAB went on to note that, in any event, the 1991 Draft USEPA Guidance, at page 7-3, also interprets 40 CFR 52.21(r)(2) as providing that a permit is "automatically invalid if construction does not commence or a request for extension is not received before its expiration date." [emphasis added] The EAB found that "Indeed, the statement that a permit is 'automatically invalid' if the extension request is not received before the permit's expiration date suggests that permitting agencies have discretion in how they address extension requests filed before permit expiration."[88, 89]

[87] Although the original permit for the proposed plant was issued on December 20, 2011, the permit became effective on January 23, 2012.
[88] *See*, *In re Sumas Energy 2 Generation Facility*, PSD Appeal No. 05-03, slip opinion at 12-13. (EAB, May 27, 2005).
[89] In reviewing this same question for the permitting of the Hyperion Energy Center, the South Dakota Supreme Court recently ruled that, considering the realities of environmental permitting, an automatic expiration interpretation would lead to an "absurd result." It would allow procedural delay beyond the source's and the permitting authority's control to frustrate the express authorization of 40 CFR 52.21(r)(2), i.e., an opportunity to obtain an extension of a permit after a timely request and full consideration by the permitting authority. *In the Matter of the Prevention of Significant Deterioration (PSD) Air Quality Permit Application of Hyperion Energy Center – Hyperion Refining, LLC – Permit #28.701-PSD*, 2013 S.D. 10 (SD 2013) at pp. 14-17.

FOR ADDITIONAL INFORMATION

Questions about the public comment period and permit decision should be directed to:

Bradley Frost, Community Relations Coordinator
Illinois Environmental Protection Agency
Office of Community Relations
1021 North Grand Avenue, East
P.O. Box 19506
Springfield, Illinois 62794-9506

217-782-7027 Desk line
217-782-9143 TDD
217-524-5023 Facsimile

brad.frost@illinois.gov