BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

IN THE MATTER OF:	)	Appeal No. PSD 10-11
VULCAN CONSTRUCTION MATERIALS, LP	)	Illinois PSD Permit No. 91806AAB

PETITIONER'S REPLY IN SUPPORT

Petitioner, Sierra Club, files this Reply in Support of its Petition for Review and Request for Oral Argument ("Pet."), together with an unopposed motion for leave to file. The permittee, Vulcan Construction Materials ("VCM") filed its response on June 14, 2010 ("VCM Br.") and the permitting authority, Illinois Environmental Protection Agency ("IEPA") filed its response on July 19, 2010 ("IEPA Br."). As explained below, none of the arguments raised by VCM or IEPA is sufficient to prevent review and remand.

I. IEPA'S CHANGE IN POSITION FROM DRAFT TO FINAL PERMIT REGARDING DIRECT CONSIDERATION OF $PM_{2.5}$ EMISSIONS REQUIRED REOPENING THE PERMIT FOR NEW COMMENT.

As set forth in the Petition, IEPA's draft permit and statement of basis for the Vulcan Construction Materials (VCM) permit used PM_{10} as an automatic "surrogate" for $PM_{2.5}$. (Pet. at 3-5 (discussing background on surrogate policy), 7-8 (discussing IEPA's change in position between draft and final permits).) In the final permit, however, IEPA made a substantial switch and for the first time attempted to justify the proposed control technology and limits as BACT for $PM_{2.5}$ (while still expressing the limits as PM and

PM_{10}) and to assess the ambient air impacts on PM2.5 concentrations from the project. (*Id.* at 6-7.) Neither IEPA nor VCM provides a sufficient reason why this substantial shift should be allowed without an opportunity for the public to review and comment.

A. IEPA Concedes This Issue By Failing To Respond.

IEPA's Response addresses the adequacy of $PM_{2.5}$ BACT and modeling that was done between the public comment period and the final proposed permit. (IEPA Resp. at 7-9.) However, IEPA provides no defense for its decision to make this substantial change from a surrogacy-by-law position to a purported $PM_{2.5}$-specific analysis without allowing the public to review and comment on IEPA's factual and legal basis for its new BACT and air impact analysis. (*Id.*)

B. VCM's Arguments Are Unpersuasive.

VCM argues that IEPA was not required to reopen comments when it substantially changed its position related to $PM_{2.5}$ surrogacy. (VCM Br. at 21-23.) The sum of VCM's response to this point is that agencies can add materials to the record after the close of comment in order to respond to comments. (*Id.* at 22-23.) This is true, as a general matter, but there is a distinction between adding to the record in response to comments to further justify the agency's initial position and a decision to deviate from the initial position entirely and use a new basis to support the final decision. VCM's Response overlooks this distinction.

In this case, the IEPA did not merely add materials to the record in response to comments. It substantially and fundamentally altered its basis for granting the permit related to $PM_{2.5}$ emissions, and especially related to $PM_{2.5}$ ambient air impacts.

Therefore, the cases cited by VCM, *In re Caribe General Electric Products, Inc.*, 8 E.A.D. 696 (EAB 2000) and *In re Ash Grove Cement Co.*, 7 E.A.D. 387 (EAB 1997), are inapposite. *Caribe General* involved a Resource Conservation and Recovery Act permit in which the permittee appealed (among other provisions) a notification requirement in its permit, arguing that EPA failed to meet the statutory prerequisite of necessity for protection of human health and the environment. 8 E.A.D. at 703 & n.17. In response to comments on this provision in the draft permit, the EPA supplemented the record to confirm that, in fact, the migrating groundwater from the permittee's facility was a health and environmental threat. *Id.* at 704-05. Thus, the additions to the record were in direct response to comment on the draft permit proposal and merely supplemented the agency's initial basis for the permit term. *Id.* at n.19. Similarly, in *Ash Grove*, the Board rejected a request for a "general reopening of the comment period" based on the petitioners' broad desire to comment on materials added to a permit record during and after the comment period. 7 E.A.D. at 431. However, in *Ash Grove*, unlike in this case, the petitioners cited no substantial change in the agency's permit basis between the draft and final permit to justify a general reopening. However, to the extent that the Board's decision in *Ash Grove* directed the Region to reopen its justification for certain emission limits, however, the Board did require a new comment period. *Id.* at 418-19 (requiring explanation for mercury and thallium limits and requiring the Region to "reopen the public comment following its decision to either revise or retain the existing limits."), 423-24 (remanding monitoring requirements for "a fuller explanation of their basis and purpose and interrelations with the underlying permit limits" and requiring the Region to reopen the

comment permit on its decision). IEPA should have done the same in this case when it changed its justifications related to $PM_{2.5}$.

This case presents facts more akin to *In re Indeck-Elwood*, 13 E.A.D. 126 (EAB 2006), *Hawaii Electric Light Company*, 8 E.A.D. 66 (EAB 1998), *Ober v. EPA*, 84 F.3d 304 (9th Cir. 1996) and *Idaho Farm Bureau Federation v. Babbitt*, 58 F.3d 1392 (9th Cir. 1995), where the agency's basis for its decision changed between draft and final. *See* Pet. at 10-11 (discussing these cases).

To the extent that VCM argues that performing a specific $PM_{2.5}$ BACT and air impact analysis was not a substantial change from IEPA's initial reliance on the PM_{10} surrogacy policy, VCM is wrong. (VCM Br. at 23 ("IEPA performed a specific PM2.5 BACT and air quality analysis… The inclusion of this information… was not a substantial addition, a fundamental change in methodology, or central to IEPA's decision…").) The change is not simply an addition of data or information as further support for IEPA's initial sole reliance on PM_{10} in the draft permit, but a fundamental change in direction to a decision to analyze $PM_{2.5}$ ambient air impacts directly and to justify PM controls as BACT for $PM_{2.5}$. This is the type of substantial change that requires a new opportunity for comment. Indeed, as noted below, the $PM_{2.5}$ ambient air impact analysis suffers fundamental flaws that the public was not given the opportunity to review and comment on. In fact, not until the responsive filings in this case was the full extent of the flaws known to the Petitioner and the rest of the public. Remand is appropriate.

II. IEPA FAILED TO MAKE A RECORD JUSTIFYING ITS DECISION NOT TO INCLUDE $PM_{2.5}$ SPECIFIC LIMITS AS BACT.

As set forth in the Petition, IEPA's final proposed permit lacks emission limits based on BACT for $PM_{2.5}$ emissions. (Pet. at 6.) Instead, IEPA decided to establish only limits on PM and PM10 and, late in the process, to assert that these limits are sufficient to constitute $PM_{2.5}$ BACT. (Pet. at 6-7; Pet. Ex. 6 at 37.) In doing so, however, IEPA failed to sufficiently justify its decision to substitute a limit for PM and PM10 for a limit on $PM_{2.5}$ emissions. (Pet. at 15.)

A. The Law of Surrogacy In Air Pollution Regulation.

Using a surrogate pollutant, rather than setting limits for the specific regulated pollutants, is only allowed if it is "reasonable" to do so. *Nat'l Lime Assoc. v. EPA*, 233 F.3d 625, 637 (D.C. Cir. 2000). Surrogacy is, in turn, "reasonable" when the surrogate pollutant and the regulated pollutant are invariably present in the exhaust stream *and* if control of the surrogate is the only way that the regulated pollutant is controlled--for example, no other inputs such as fuel or processed materials affect the regulated pollutant. *Id.* at 639; *see also Sierra Club v. EPA*, 353 F.3d 976, 985 (D.C. Cir. 2004) (same). Therefore, where the record before the court establishes a "strong direct correlation[]… between the emission of" the surrogate and the emissions of the regulated pollutant, courts have upheld the use of a surrogate. *Sierra Club*, 353 F.3d at 985. Where that evidence was not in the record before the court, however, courts have rejected the attempted use of surrogates. *Mossville Envtl. Action Now v. EPA*, 370 F.3d 1232, 1242-43 (D.C. Cir. 2004) ("While EPA may be able to know that a correlation exists between one known pollutant and some other unknown pollutants, it has not memorialized that knowledge in such a fashion that commenters, interested members of

the public, regulated entities, or most importantly, a reviewing court, can assess.").

As to using various sizes of particulates as a surrogate for other sizes, the courts have issued decisions finding surrogacy between sizes of PM, PM_{10} and $PM_{2.5}$ to depend on the facts and circumstances of individual sources and permits. *E.g., Am. Farm Bureau v. EPA*, 559 F.3d 512, 534-35 (D.C. Cir. 2009) (finding relationship between coarse and fine particulates to vary but holding EPA's determination based on this relationship non-arbitrary based on the specific record before the court); *Am. Trucking Assoc. v. EPA*, 175 F.3d 1027, 1054 (D.C. Cir. 1999) (finding EPA's use of PM_{10} as an indicator of the coarser end of the range ($PM_{10-2.5}$) arbitrary based on the record in that case). The Administrator has compared these various surrogacy decisions and concluded that they "demonstrate the need for permit applicants and permit authorities to determine whether PM_{10} is a reasonable surrogate for $PM_{2.5}$ under the facts and circumstances of the specific permit at issue, and not proceed on a general presumption that PM_{10} is always a reasonable surrogate for $PM_{2.5}$." *In re Louisville Gas and Elec. Co., Trimble County*, Petition No. IV-2008-03, Order at 44 (EPA Adm'r August 12, 2009) ("Trimble County").[1]

B. IEPA's Basis For Using a PM Surrogate Rather Than Establishing a $PM_{2.5}$-Specific BACT Limit Is Not Supported By the Record.

IEPA's Response merely restates the assertions it made in the Response to Comments that are unsupported by the record. (IEPA Resp. at 7-9.) Specifically, IEPA argues that "BACT provisions expressed in terms of PM also ensure adequate $PM_{2.5}$ controls." (*Id.* at 7.) The sole basis for this statement appears to be IEPA's conclusion

[1] http://www.epa.gov/region7/air/title5/petitiondb/petitions/lg_e_2nddecision2006.pdf.

that "[f]ilters are the 'best devices' for controlling fine particulate matter" from point sources, and that the facility's "work practices… reflect 'best practices' for emissions of PM, PM_{10} and $PM_{2.5}$." (*Id.*) IEPA's argument is not entirely clear, but it appears that IEPA is asserting that if it had done a top-down BACT analysis for $PM_{2.5}$, it would have selected the undefined "filters" and "work practices" as the top-ranked pollution control options, *see, e.g., NSR Manual* at B.25-.26, and a limit for $PM_{2.5}$ would not be any more stringent than the limit for PM because "PM and $PM_{2.5}$ are directly correlated." (IEPA Br. at 7.) The problem with this argument is that, contrary to the Administrator's decision in *Trimble County*, IEPA's conclusions lack any basis in the record (and IEPA cites to none).

As noted in the Petition, EPA's policy set forth by the Administrator in her Order objecting to the Title V permit for the Louisville Gas and Electric Trimble County plant requires permitting authorities using PM limits in lieu of $PM_{2.5}$-specific BACT limits to "establish[] in the permit record a strong statistical relationship between PM10 and PM2.5 emissions from the proposed unit, both with and without the proposed control technology in operation."[2] *Trimble County*, Order at 45. The permitting authority must also make a comparison between $PM_{2.5}$-BACT limits for the plant and the PM/PM_{10} BACT limits to "demonstrate[] that the degree of control of PM2.5 by the control technology selected in the PM_{10} BACT analysis will be at least as effective" as the technology for $PM_{2.5}$. *Id.*

Moreover, this Board's precedents require permitting authorities' decisions to be clearly based on sufficient evidence in the record. *In re Steel Dynamics*, 9 E.A.D. 165,

[2] The Order also establishes parameters for such data, including that they should not be from AP-42 emission factors or "the result of a single compliance stack test," but should give consideration to how fuel and operating conditions can affect the emission rates. *Trimble County* at 45.

224 (EAB 2000) (remanding a permit for lack of demonstration in the record for permit decision); *Caribe*, 8 E.A.D. at 712 (remanding a permit where the Region supplied only minimal data in the record to support a permit term); *see also In re Cash Creek Generation LLC*, Petition Nos. IV-2008-1, IV-2008-2, Order at 13-14 (Adm'r, Dec. 15, 2009) (objecting to Title V permit for new plant where the permitting authority failed to make a sufficient record demonstrating that PM_{10} can be used as a surrogate for $PM_{2.5}$).

The Petition points out that IEPA has failed to do the required analysis to justify use of a surrogate for $PM_{2.5}$ in establishing BACT and that its entire justification consists of conclusory statements. (Pet. at 15.) IEPA's Response to Comments and response brief make the same conclusory assertions that "PM and PM2.5 are directly correlated," that PM does not require different controls than PM2.5, and that "Illinois EPA has determined that for the for the proposed plant PM2.5 limits are most appropriately addressed in terms of PM," even though IEPA admits that "[t]his does not mean that the rates of PM, PM10 and PM2.5 are assumed to be the same." (IEPA Br. at 7-8.) Nowhere in its response, however, does IEPA identify any information in the record to support these conclusions. To the extent IEPA attempts to rely on the same conclusory statements it made in its Response to Comments as support, that attempt falls short. A baseless conclusion is not cured by asserting it twice.

Review and remand is appropriate so that IEPA can make a record to justify the use of PM and PM_{10} as a surrogate for $PM_{2.5}$, or to establish a $PM_{2.5}$-specific BACT limit. *See Mossville*, 370 F.3d at 1243.

III. IEPA AND VCM'S RESPONSES CONFIRM THAT IEPA'S $PM_{2.5}$ ANALYSIS FAILED TO INCLUDE MODELED IMPACTS FROM NEARBY SOURCES

As set forth in the Petition, IEPA's $PM_{2.5}$ ambient air impact analysis did not occur until well after the public comment period closed and accounted for only a "background" concentration and a modeled concentration from VCM. (Pet. at 18.) It did not account for the additional modeled impacts from other sources in the area, which is required by the modeling guidelines[3] and EPA guidance. (*Id.*) IEPA and VCM's responses fail to address this deficiency in the impact analysis. IEPA's Response merely states that it *did* an assessment of the plant on $PM_{2.5}$ air quality and that its assessment indicates that the plant "should not be a threat to human health or the environment." (IEPA Br. at 9.) This says nothing about *how* IEPA did the assessment, and specifically whether it included the impact of other sources in the area as required.

VCM provides slightly more detail into how IEPA did its analysis of $PM_{2.5}$ air impacts, but in doing so VCM confirms that IEPA excluded the modeled impacts of other nearby sources. (VCM Br. at 24.) VCM notes that IEPA took the results of modeling from specific VCM emission points, made adjustments to the results, and added the VCM impacts to monitored[4] background concentrations from a regional monitor. (*Id.* ("this

[3] Compliance with the Modeling Guidelines, 40 C.F.R. part 51 Appx. W, is mandatory. 40 C.F.R. § 52.21(l). Variance from the Guidelines requires specific approval from the Administrator after notice and public comment, *id.* § 52.21(l)(2), which did not occur in this case.

[4] In fact, IEPA did not even do this, since the background $PM_{2.5}$ concentration that IEPA used was fabricated. IEPA's "analysis" was not available to Petitioner at the time of the Petition, but was attached as Exhibit G to VCM's Response. That document shows that IEPA considered two regional background monitors: Braidwood and Joliet. (VCM Resp. Ex. G.) The Joliet data, when added to results of modeling only VCM emission points (excluding additional impacts from other nearby sources), showed violations of the air standards. (*Id.*) The data for the Braidwood monitoring, however, was incomplete since the Braidwood monitor did not have annual data for 2007, which IEPA notes would likely be higher than the other two years of data for that monitor. (*Id.* (stating in hand notes for Braidwood monitor that "two year average would not consider higher data likely experienced in 2007").) IEPA's apparent "fix" was to create data for 2007 based on a proportion of two year and three year data for the Joliet monitor. (*Id.*)

analysis estimated the Facility's maximum contribution… as well as existing background levels…"). At best, this analysis included two of the three components of an ambient air impact analysis—the proposed source's impacts and the monitored background. VCM sidesteps the fact that this analysis omitted the third required element of an air impact analysis—the modeled impact of other sources in the significant impact area. (*See* Pet. at 18, citing 40 C.F.R. part 51, App. W § 8.2.3 and Table 8-2; *NSR Manual* at C.32; and EPA's modeling guidance.) VCM cannot overcome this deficiency with its insistence that "IEPA did examine the cumulative impact from multiple sources," that IEPA expressed its results "in terms of micrograms per cubic meter," and that "Petitioner admits that air quality modeling was performed." (VCM Br. at 24-25.) The issue is whether lawfully adequate modeling was done and it clearly was not. Remand is appropriate.

IV. NEITHER THE RECORD NOR THE LAW SUPPORTS IEPA'S FAILURE TO CONDUCT PRECONSTRUCTION MONITORING THAT MEETS THE APPLICABLE REQUIREMENTS AND IS REPRESENTATIVE OF BACKGROUND CONCENTRATIONS AROUND VCM.

Petitioner's Issue II summarizes the applicable law for use of site-specific pre-construction monitoring--or, more accurately, the limited instances in which air quality data from regional monitors.(Pet. at 19-23.) As noted in the Petition, IEPA's permit for VCM used monitoring data from existing, non-site-specific, regional monitors. (*Id.* at 23-25.) IEPA agreed that the EPA's "Monitoring Guidelines" apply, but contends that the regional data it used met the Guidelines' requirements. The Petition seeks review because the record made by IEPA does not support a conclusion that the regional

monitoring data used meets the Guidelines' requirements. In fact, the record indicates the opposite. (*Id.* at 26-30.)

VCM and IEPA's responses can be summarized as follows: (1) regional monitoring data can be used when "circumstances warrant," as set forth in the NSR Manual and Monitoring Guidelines (IEPA Br. at 10-11; VCM Br. at 26-27); (2) the existing monitoring stations in Illinois (from which IEPA used data) meet the applicable criteria (IEPA Br. at 11; VCM Br. at 25); and (3) specific to the "location" criteria, there are no sources in the vicinity of VCM so it qualifies for the less stringent criteria (IEPA at 12; VCM at 30). VCM and IEPA are in error and, anyway, the record does not support their arugments.

A. Even If Regional Monitoring Can Be Used When "Circumstances Warrant," IEPA Has Not Followed The Criteria It Purports To Apply When Using Regional Monitoring for the VCM Permit.

Contrary to IEPA's insistence that the regional monitoring data it used meets all applicable criteria in the *Guidelines* and *NSR Manual*[5], IEPA cannot point to anything in the record—other than its similarly unsupported assertions in the Response to Comments—that this is so.

[5] VCM makes the additional argument that the Guidelines are voluntary so IEPA's failure to apply them does not matter. (VCM Br. at 28-29.) However, it is clear that IEPA purports to apply the *Monitoring Guidelines* and *NSR Manual* for determining whether use of regional monitoring data, instead of site-specific data, is appropriate. (Pet. Ex. 6 at 72-76 and n.214; IEPA Br. at 10-13.) Therefore, those documents are the measure of IEPA's decision in this case. *Ash Grove*, 7 E.A.D at 417-18 (holding that the permitting authority's decisions must follow the methods it chose to apply); *see also Motor Vehicle Mfrs. Assoc. v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 50 (1983) ("An agency's action must be upheld, if at all, on the basis articulated by the agency."). VCM's argument that the *Guidelines* are voluntarily, even if correct (which it is not), is simply irrelevant in this case.

Both VCM and IEPA make various assertions that-- if true, and if based on something in the record other than unsupported statements-- might justify the use of regional monitoring data. (IEPA Br. at 11 ("IEPA found the data from the stations to be representative, of appropriate quality and current, per USEPA requirements."), 12 (asserting that the monitoring stations meet the location criteria of the location of maximum concentration increase, maximum impact from existing sources, and location of maximum impact (presumably combined impact), *id.* (asserting that there are not a significant number of existing sources in the vicinity), 13 (asserting that the time period for data collection "meets USEPA's Ambient Monitoring Guideline standards"); VCM Br. at 29 (asserting that IEPA's regional monitoring "was current at the time of IEPA's evaluation"), 30 (asserting that the number of nearby sources "is limited and not of sufficient proximity"), 31 (asserting that the data are "current"), 34-35 (quoting IEPA's unsupported statements in the Response to Comments and statements that Illinois "is generally flat"), 37 (asserting that "data from the regional monitoring provides information regarding the background air quality surrounding the Project.").[6] However, none of these statements are based on anything in the record, none cite anything in the record other than the same baseless statements in the Response to Comments, and most are simply false.

Merely asserting that the data are representative and meet the "location," "quality," and "currentness" criteria is insufficient without a record to support such conclusions. Pet. at 26-27 (citing cases); *In re Dominion Energy Brayton Point, LLC*, 12

[6] VCM also makes numerous irrelevant assertions (which, incidentally, are also not backed up by the record) that do not connect any facts to the relevant criteria. See e.g., VCM Br. at 29 (alleging that IEPA's monitoring system is part of the state implementation plan, is used for determining compliance with NAAQS for SIP-planning), 33 (asserting that "air quality is improving"), 37-38 (contending that IEPA conducted modeling that excluded nearby sources but doubled background concentrations).

E.A.D. 490, 510 (EAB 2006) (holding that the Board generally defers to the permitting authority's decisions on technical issues, but that "[t]he [permitting authority]'s rationale for its conclusions. . . must be adequately explained *and supported* in the record." (emphasis added)), 562 (permitting authority's "rationale for its conclusions must be adequately explained *and supported* in the record" (emphasis added)); *In re Newmont Nev. Energy Inv., LLC*, 12 E.A.D. 429, 440, 442-43 (EAB 2005) (agency must base decisions on evidence in the record); *Steel Dynamics*, 9 E.A.D. at 191 n.31 (agency must document its decision making process in establishing BACT). IEPA and VCM's responses to the Petition do not cite anything in the record and, at most, do nothing more than provide the same conclusory statements IEPA made in the Response to Comments. This is insufficient to withstand review and remand. *See Indeck-Elwood*, 13 E.A.D. at 155 (reversing IEPA decision that made only cursory statements in response to comments that were not connected to supporting documents in the record); *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 175 (EAB 1999) (remanding where there were no documents in the record to support the decision and therefore upon which to "judge the adequacy of the response").

It is concerning that neither IEPA nor VCM can point to anything in the record to support IEPA's decision to use regional monitoring data, other than the Response to Comments, which itself points to nothing in the record. Review and remand are appropriate.

B. The Record That Does Exists Contradicts IEPA's Use Of Regional Monitoring.

In contrast to IEPA's conclusions purporting to support its use of regional monitoring based on the *Monitoring Guidelines*, the actual record shows that such use of monitors is inappropriate. Contrary to IEPA and VCM's insistence that the VCM site is free from ambient air impacts from other facilities, the record that IEPA has actually developed demonstrates that there are numerous other sources impacting the VCM site. *See* Pet. at 28-29; Pet. Ex. 7 (the inventory of other sources near VCM from the air modeling files in the record). IEPA and VCM do not rebut this evidence in the record, which contradicts IEPA's non-record-based conclusions. Additionally, Vulcan's Exhibit G (which was not available to the public at the time the Petition was filed) further suggests that if IEPA were to make a record, it likely would contradict IEPA's purported conclusions about data quality. VCM's Exhibit G shows that IEPA is missing data for the monitor it relies on for background concentrations of $PM_{2.5}$. (VCM Ex. G at 1 (showing missing annual data for 2007 for the Braidwood monitor).) If IEPA has made a record for the "data quality" criteria for the other monitors it relies upon, it is possible that the record would contradict IEPA's unsupported assertions in this case that the monitors meet all data quality requirements.

V. THE SIZE OF THE "SAFETY FACTORS" OR "COMPLIANCE MARGINS" THAT IEPA ADDED TO THE NO_X AND CO BACT LIMITS LACK ANY BASIS IN THE RECORD

Part III of the Petition addresses IEPA's failure to establish a basis and a record for the specific "safety factors" or "compliance margins" that it built into the NOx and CO BACT limits for the VCM kiln. (Pet. 30-35.) As noted in the Petition, IEPA's Response to Comments insists that the stack test "that is relevant to establishing NOx

BACT limits for the proposed kiln is the one that was performed on the kiln" and that the results showed an emission rate of 3.45 pounds per ton of limestone feed. (Pet. at 32, quoting Pet. Ex. 6 at 67.) IEPA also insists that the basis for its CO BACT limit for the kiln is the stack test previously conducted on the kiln, which showed emissions at the permitted kiln to be 4.76 pounds of CO per ton of limestone feed. (*Id.* at 33, citing Pet. Ex. 6 at 69 n.191.) Despite these test results *at the specific kiln at issue* showing achievable emission rates, the IEPA established BACT limits of 4.5 pounds of NOx per ton of feed on a 24-hour, 4.0 pounds of NOx per ton of feed on a 30-day basis, and 11.48 pounds per ton of CO per ton of feed. (Pet. Ex. 1 at 12-13.) IEPA claims that these limits—representing margins of 30% and 240% above the emission results for this kiln—include a "safety factor" for purposes of allowing compliance. (Pet. Ex. 6 at 66-69.) In fact, for CO, IEPA asserts that a "significant margin of compliance to address normal variability in operation" is necessary. (Pet. Ex. 6 at 69.) The basis for IEPA's leap from determining that the emission test results for this facility are the most relevant information to its decision to set limits 30% and 240% higher is unclear. A "margin" that is larger than necessary to account for uncontrollable operating variation undermines the BACT process by establishing limits disconnected from the best pollution control option.

The Petition does not contend that a permitting agency can *never* include a "safety factor." Instead, the issues in this case are that: (1) the record does not contain evidence to support IEPA's claimed rationale for adopting a compliance margin; and, (2) even if it did, and *some* margin were appropriate, the record does not provide a basis for the *specific* "margins" IEPA established here. (Pet. at 34-35.) In short, even assuming *some* margin may be appropriate, it is unclear from IEPA's explanation and the record why

IEAP determined that 4.5 pounds of NOx per ton of stone feed and 11.48 pounds of CO per ton of stone feed represented the appropriate amount of margin, especially in light of data for this facility that 3.45 pounds and 4.76 pounds. Were lower compliance margins considered? If so, why were they rejected? IEPA provides no reasoned explanation for the *amount* of safety factor included. At most, IEPA notes various factors that *might* affect emissions at a lime kiln, including variability in operation, size of burner, intensity of combustion, low excess air, and other plants' permit limits. (*See* VCM Br. at 44, quoting IEPA's Responsiveness Summary at 68-69.) But listing possible factors in the abstract followed by a conclusion that specific limits constitute BACT does not demonstrate which of the factors were relied upon, what they mean for the VCM kiln in particular, and how they influenced the final BACT limits. Remand is appropriate to require IEPA to explain how it determined the specific amount of "margin" it included in the NOx and CO BACT limits for the VCM kiln. (Pet. at 35.)

VCM and IEPA's briefs go on at length to contest a point that is not at issue in this case: that safety factors may be appropriate in certain circumstances, such as when necessary to allow compliance on a consistent basis, "if there is uncontrollable fluctuation or variability in the measured emission rate," the technology "is unproven, or where "the available data demonstrate" that a higher emission rate "will be achieved over a long term." (VCM Br. at 39-41; IEPA Br. at 14.) However, neither VCM nor IEPA point to anything in the record showing that the VCM kiln falls into any of these categories. *Newmont*, 12 E.A.D. at 440 (requiring permitting authority to "adequately explain" the rationale for including a compliance margin and to do so in a way that "must be appropriate in light of all evidence in the record"); *In re Gov't of D.C. Mun. Separate*

Sewer Sys., 10 E.A.D. 323, 342-43 (EAB 2002) ("Without an articulation by the permit writer of his [or her] analysis, we cannot properly perform any review whatsoever of that analysis and, therefore, cannot conclude that it meets the requirements of rationality."). At most, VCM contends that different kilns have different emission rates. (VCM Br. at 41-42.) But that does not mean a single kiln's emissions, much less the VCM kiln's emissions, "fluctuate" or that the specific "safety factors" applied in this case are necessary to address the VCM kiln's range of fluctuation. Despite adamant defense of the proposition that a "margin" could be defensible due to generic considerations, neither VCM nor IEPA actually locates anything in the record to show that those conditions exist at VCM and, if they do, what the basis was for the particular amount of "margin" that IEPA selected.

VCM further argues that it is Petitioner's obligation to prove a negative: "that safety factors are not warranted." (VCM Br. at 41.) However, safety factors are only appropriate in certain circumstances, and neither the record nor IEPA's analysis shows that this permit is one of those circumstances. (Pet. at 31-32, citing *Newmont Nev.*, 12 E.A.D. at 440.) Petitioner would have the burden to show errors in IEPA's basis for setting BACT limits, but it is IEPA's burden in the first instance to make a record sufficient to determine what its basis was. *Dominion*, 12 E.A.D. at 510 (requiring basis for decisions to be "adequately explained and supported in the record."), 562 (requiring the agency's "rationale… [to]be adequately explained and supported in the record"); *Newmont*, 12 E.A.D. at 440, 442-43 (agency must base "compliance margin" decisions on evidence in the record); *Ash Grove*, 7 E.A.D. at 417 (requiring agency to articulate its

thought process and the significance of the facts it relied upon in reaching its conclusions).[7]

VI. THE VCM PERMIT IS NOT FINAL AND THE 1-HOUR NO_X LIMIT IS IN EFFECT

A. Petitioner Sufficiently Preserved The Issue of NAAQS Compliance To the Extent Required By Law.

VCM and IEPA argue that Petitioner did not raise the issue of VCM's compliance with the 1-hour NOx[8] ambient air quality standard in comments. (VCM Br. at 45-51; IEPA Br. at 16.) There is no dispute that no person, including Petitioner, specifically raised the 1-hour NOx standard during comments. But that is neither surprising nor relevant. As explained in the Petition, the standard was not promulgated until five months after the comment period closed. (Pet. at 36-37.) EPA's regulations requiring comment on ascertainable issues does not require clairvoyance. *Cf. In re E. Ky. Power Coop., Hugh L. Spurlock Gen. Station*, Petition No. IV-2008-4, Order at 4-5 (Adm'r Sept. 9, 2009) (granting Title V petition pursuant to 42 U.S.C. § 7661d on issue not contained in public comments because the basis for the petition did not arise until a court decision that occurred days after the comment period closed) (available at http://www.epa.gov/region7/air/title5/petitiondb/petitions/spurlock_response2008.pdf).

To the extent it was foreseeable that EPA would promulgate *some* new ambient air quality standards that would be effective prior to the VCM permit becoming final,

[7] VCM and IEPA also spend considerable space in their responses addressing comments made by Sierra Club in the public comment period and IEPA's response to those comments, including a memo dated in 2000. (IEPA Br. at 14; VCM Br. at 43-44.) This was not raised in the Petition so it is unclear why both parties felt the need to torch this straw man.

[8] VCM raises a question about whether the ambient air standard is expressed as NOx or NO_2. (VCM Br. at 46 n.25.) To the extent this distinction is relevant to anything in this case, which it does not appear to be, it is important to note that EPA's ambient air standard is intended to protect the public from all oxides of nitrogen, and not merely NO_2. EPA expresses the standard in NO2 because it assumes that all oxides convert to NO_2.

Petitioner preserved the issue the only way possible: through a general comment that IEPA must ensure compliance with ambient air standards prior to issuing any permit. (Pet. at 36, citing Pet. Ex. 2 at 30.) This is not a situation like that in *Carlota Copper Co.*, cited by VCM, where the petitioners sought review of a lack of permit monitoring to determine if a site cleanup was successful over the long term where no comments were raised on monitoring. 11 E.A.D. 692, 722 (EAB 2004). The public comments in that case only asked general questions regarding EPA's "position" if remediation was not successful. *Id.* Unlike the vague questions in *Carlota*, which were unrelated to the issue of monitoring, Petitioner's comments were specific to the requirement to ensure compliance with ambient air standards. The public cannot be expected to comment that the permitting authority must ensure compliance with *specific* ambient air standards that do not even exist at the time of the public comment period. Moreover, the issue of post-remediation monitoring in *Carlota* did not arise due to a new rulemaking that became effective between the draft and final permits.

VCM also misreads the Petition to say that "Petitioner admitted that it evaluated the proposed [1-hour NOx] rule at the time of public comment and determined it was too uncertain…" (VCM Br. at 50, citing Pet. at 37.) However, nowhere in the Petition—on the page cited by VCM or anywhere else—does Petitioner make such a statement. VCM's purported "admissions" are imagined.

Additionally, the 1-hour NOx issue is not the same as the greenhouse gas BACT issue because, in Petitioner's interpretation of the law, carbon dioxide has been subject to regulation since the 1990 Amendments or, at the latest, the Supreme Court's decision in *Massachusetts v. EPA*, 549 U.S. 497 (2007). *See, e.g.*, Petition for Review and Request

for Oral Arguments, *In re Deseret Power Elec. Coop. (Bonanza)*, PSD 07-03 (EAB). Therefore, contrary to VCM's attempt to cast the issues as equivalents, or greenhouse gas regulation as "more speculative," VCM Br. at 49 n.27, 51, Petitioner was able to comment on the greenhouse gas issue because Petitioner believes that greenhouse gases have been subject to regulation for years, whereas there was not a 1-hour NOx standard until after the comment period closed.

The record prepared by IEPA, which was not available at the time of the Petition, confirms that IEPA had notice of this issue and an opportunity to consider it. In VCM's Response, Exhibit I shows that on April 8, 2010 (the day before IEPA pushed the VCM permit out on the last business day before the 1-hour NOx NAAQS effective date), IEPA calculated 1-hour NOx impacts using the ratio of CO emissions (in lbs/hour) to 1-hour impacts (in ug/m3) and applying that ratio to the NOx emission rate (in lbs/hour) to estimate the 1-hour NOx impacts in ug/m3 and ppb. (VCM Ex. I.) Needless to say, this is not EPA's method for determining 1-hour NOx impacts. *See* Memorandum from Stephen D. Page, Director OAQPS, to Regional Division Directors, *Re: Guidance Concerning the Implementation of the 1-hour NO2 NAAQS for the Prevention of Significant Deterioration Program* (June 29, 2010) (including attachments) (generally discussing requirement to model both the permittee-facility's impacts and the impacts from the inventory of nearby sources, and adding the results of both to background concentrations)[9]; *see also NSR Manual* at C.3. ("compliance with NAAQS is based upon the total estimated air quality, which is the sum of the ambient estimates resulting from existing sources or air pollution (modeled source impacts plus measured background

[9] *Available at* http://www.epa.gov/region07/air/nsr/nsrmemos/appwno2.pdf.

concentrations…) and the modeled ambient impact caused by the applicant's proposed emissions increase…"), C.32 ("EPA requires that, at a minimum, all nearby sources be explicitly modeled as part of the NAAQS analysis." (emphasis original)), C.34 (requiring use of background monitoring for impacts from existing sources that are not modeled as nearby sources).[10] Nevertheless, the existence of these calculations do confirm that the policy reasons for requiring public comments are clearly satisfied since IEPA was aware of the 1-hour NOx standard and had an opportunity to consider it—IEPA just did not make it part of IEPA's permit decision or do a full analysis. *See e.g., In re New England Plating Co.*, 9 E.A.D. 726, 732 (EAB 2001) (purpose of the requirement to raise issues in comments is to ensure that the permitting authority "has an opportunity to address potential problems" and to promote the "policy that most permit decisions should be decided at the [permit authority] level.").

Lastly, in light of the fact that IEPA's preliminary analysis in VCM's Exhibit I indicates that the plant will cause violations of the 1-hour NOx standard set to protect public health when combined with the impacts from other area sources and background concentrations, and IEPA's apparent rush to avoid having to complete a full impact analysis that likely would have confirmed NAAQS violations, the Board should exercise its discretion to review this issue. (Pet. at 38.)

[10] Notably, IEPA's very rough estimate resulted in impacts from VCM's kiln, alone, of 68.2 parts per billion. (VCM Ex. I at 2.) No analysis was done for the additional impacts from nearby sources or of background concentrations, which would both be required for a complete analysis of impacts. NSR Manual at C.3, C.32-.34. Notably, the two existing NO2 monitors in Illinois have design values of 50 and 116 ppb. See *http://www.epa.gov/oaqps001/nitrogenoxides/pdfs/NO2_final_designvalues_0608_Jan22.pdf* (Illinois Cook and Saint Clair counties). While site-specific pre-construction monitoring should be conducted for a full analysis, these background concentrations plus the VCM-specific impacts of 68.2 ppb exceed the 1-hour NOx standard of 100 ppb. Adding the impacts from nearby sources would only result in further exceedances.

B. The 1-Hour NOx Standard Was Effective Before The VCM Permit Become Final As A Matter of Law.

It is indisputable that compliance with the 1-hour NOx ambient air quality standard is a prerequisite to PSD permit issuance for any permit that is final after the effective date of the standard.[11] 42 U.S.C. § 7475(a)(3)(B). The dispute is whether the VCM permit is final on the date that IEPA signs-off, or on the date that is final and the plant can actually begin construction. Because the permit is not final, nor effective, until notice of the final permit is published (just as the 1-hour NOx standard was not effective until 60 days after publication rather than immediately after the Administrator's signature), the 1-hour standard was in effect[12] before the VCM permit will be in effect and the permit must comply.

VCM and IEPA distinguish between "issuance" date for a permit and "final decision" and "effective" dates. (VCM Br. at 52-55; IEPA Br. at 16.) VCM argues that the permit was "issued" on April 9th, even though it could not have been final or effective, and VCM could not have begun construction under it until after publication in the Federal Register. (*Id.*) But the cases cited are inapposite. This is not a situation like *Dominion Energy*, where the law being considered by the Board changes part-way through a permit appeal. 12 E.A.D. at 505, 598 (Regional signed permit on October 6,

[11] VCM's brief contains a confusing statement suggesting that if it conducts an analysis of annual NOx impacts, it may not be required to demonstrate compliance with the 1-hour standard. (VCM Br. at 57-58.) To the extent VCM makes such an argument, it has no basis in law. The Federal Register notice VCM quotes states that major sources applying for PSD permits will be required "to demonstrate that their proposed emissions increase of NOx will not cause or contribute to a violation of either the annual or 1-hour NO2 NAAQS and the annual PSD increment." (*Id.*, quoting 75 Fed. Reg. at 6,525.) This out-of-context quote does not state, nor could it modify the language of 42 U.S.C. § 7475(a)(3) and 40 C.F.R. § 52.21(k) to say, that a source can ignore the 1-hour NOx NAAQS if it compliance with the annual NAAQS. Such an interpretation would be absurd as it would effectively negate the 1-hour NOx NAAQS.

[12] VCM states that the 1-hour standard "was promulgated three days after" IEPA's proposed permit for VCM, but VCM clearly refers to the effective date not the promulgation date based on the rest of VCM's discussion. (VCM Br. at 52.)

2003, petition for review filed November 5, 2003, the Board granted review on February 19, 2004, EPA promulgates (the now-revoked) Phase II rule on July 9, 2004). Additionally, the rule at issue in *Dominion* specifically said that it did not apply to and was not to be used as guidance for pending permits. *Id.* at 614. In contrast, in this case the IEPA signed its decision, but that decision had not been appealed and, by law, could not have been effective (even absent an appeal) until May 9, 2010, four weeks after the 1-hour standard's effective date. 40 C.F.R. § 124.15(f) (earliest possible date that permit becomes final is 30 days after service of notice). The effective date of the new 1-hour standard fell between the IEPA signature and the earliest possible effective date for the decision. Moreover, the change in law (adopting a 1-hour NOx standard) was announced two-months prior to IEPA's final proposed permit, IEPA conducted a partial analysis under the new standard, and IEPA apparently rushed its decision to get in just under the wire by issuing it on the last business day before the new standard's effective date.

Moreover, the Act clearly prohibits any "major emitting facility" from commencing construction unless it demonstrates that emissions from construction or operation will not cause or contribute to a violation of, *inter alia*, any "national ambient air quality standard…" 42 U.S.C. § 7475(a)(3)(B). The relevant point of time in the statute is when construction commences, which correlates to the point that a PSD permit becomes effective and final under Part 124, and not when the permitting authority initially signs a permit. VCM and IEPA's refusal to conduct ambient air impact analysis for 1-hour NOx cannot be squared with the plain language and intent behind the Act to prevent violations of the NAAQS by new sources. Remand is appropriate.

VII. IF REMAND IS REQUIRED, SIERRA CLUB ADEQUATELY PRESERVED THE GREENHOUSE GAS BACT ISSUE.

Sierra Club's Petition notes that the state of the law related to BACT for regulated greenhouse gases has developed during the permitting process in this case and will continue to develop. (Pet. 38-40.) Under the current status of the law, all large sources like VCM will be subject to greenhouse gas BACT no later than January 2, 2011. (*Id.*) However, ongoing judicial review of the Administrator's decision that greenhouse gases are not already subject to BACT limits may result in a vacatur—meaning BACT requirements could apply to permits already issued, apply to permits in the process or appeal stage, to only future permits, or, in theory, never. (*Id.*)

There is no question that Sierra Club's comments preserved this issue. (*Id.*) It is unclear what the pending judicial decisions will be. Under the current state of the law and facts, there is nothing for the Board to decide. Therefore, it is reasonable for Sierra Club to raise this issue to preserve it in case the state of the law changes during the appeal or if the permit is not issued until January. Rather than spend the parties' resources litigating every possibility, Sierra Club believes it is better to reserve judgment on this issue. Nothing in IEPA or VCM's filings suggest anything different.

CONCLUSION

For these reasons we respectfully urge the Board to review and remand the Vulcan Materials PSD permit.

Respectfully submitted, this 19th day of August, 2010.

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