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

In re:	)	
Tallmadge Generating Station	)	PSD Appeal No. 02-12
PSD Permit No. 288-01	)	

ORDER DENYING REVIEW IN PART
AND REMANDING IN PART

On October 23, 2002, the Michigan Department of Environmental Quality ("MDEQ" or "Department") issued a federal Prevention of Significant Deterioration ("PSD") permit to Panda Tallmadge Power, L.P., pursuant to Clean Air Act ("CAA") § 165, 42 U.S.C. § 7475. The permit authorizes Panda's construction of a new 1,190-megawatt ("MW") electric power generating facility in Tallmadge Township, Ottawa County, Michigan. MDEQ is authorized to make PSD permitting decisions for new and modified stationary sources of air pollution in the State of Michigan pursuant to a delegation agreement with Region V of the U.S. Environmental Protection Agency ("EPA"). *See* 40 C.F.R. § 52.21(u); 45 Fed. Reg. 8348 (Feb. 7, 1980). Because MDEQ acts as EPA's delegate under the PSD program, the Department's PSD permits are considered EPA-issued permits, and appeals of the permit decisions are heard by the Environmental Appeals Board ("Board") pursuant to 40 C.F.R. § 124.19. *See In re Hillman Power Co., L.L.C.*, PSD Appeal Nos. 02-04 to -06, slip op. at 3 (EAB July 31, 2002), 10 E.A.D. ___; *In re Tondu Energy Co.*, 9 E.A.D. 710, 711-12 n.1 (EAB 2001).

In this case, Mr. Douglas Meeusen, a mathematician and software engineer who resides to the northeast of the proposed facility site, filed a *pro se* appeal of MDEQ's permit decision for Panda. Mr. Meeusen requests on several grounds that the permit be remanded to the Department for further consideration. For the reasons set forth below, the permit is remanded as to two issues identified below and the petition for review is denied as to all other issues.

I. *BACKGROUND*

A. *Statutory and Regulatory Background*

Congress enacted the PSD provisions of the CAA in 1977 for the purpose of, among other things, "insur[ing] that economic growth will occur in a manner consistent with the preservation of existing clean air resources." CAA § 160(3), 42 U.S.C. § 7470(3). To that end, parties must obtain preconstruction approval (i.e., PSD permits) to build new major stationary sources, or to make major modifications to existing sources, in areas of the country deemed to be in "attainment" or "unclassifiable" with respect to federal air quality standards called "national ambient air quality standards" ("NAAQS"). *See* CAA §§ 107, 160-169B, 42 U.S.C. §§ 7407, 7470-7492.

NAAQS are established on a pollutant-by-pollutant basis and are currently in effect for six air contaminants: sulfur oxides (measured as sulfur dioxide ("SO_2")), particulate matter, carbon monoxide ("CO"), ozone, nitrogen dioxide ("NO_2"), and lead. 40 C.F.R. § 50.4-.12. In

areas deemed to be in "attainment" for any of these pollutants, air quality meets or is cleaner than the NAAQS for that pollutant. CAA § 107(d)(1)(A)(i), 42 U.S.C. § 7407(d)(1)(A)(i); *In re Maui Elec. Co.*, 8 E.A.D. 1, 4 (EAB 1998). In "unclassifiable" areas, air quality cannot be classified on the basis of available information as meeting or not meeting the NAAQS.[1] CAA § 107(d)(1)(A)(iii), 42 U.S.C. § 7407(d)(1)(A)(iii).

Applicants for PSD permits must demonstrate, through analyses of the anticipated air quality impacts associated with their proposed facilities, that their facilities' emissions will not cause or contribute to an exceedence of any applicable NAAQS or air quality "increment." CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3); 40 C.F.R. § 52.21(k)-(m). Air quality increments represent the maximum allowable increase in a particular pollutant's concentration that may occur above a baseline ambient air concentration for that pollutant. *See* 40 C.F.R. § 52.21(c) (increments for six regulated air pollutants). In addition, applicants for PSD permits must employ the "best available control technology," or "BACT," to minimize emissions of pollutants that may be produced by the new or modified source in amounts greater than applicable levels of significance established by the PSD regulations.[2] CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2). As the Board has noted on prior occasions, "[t]he requirements of preventing

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[1]Areas may also be designated as "nonattainment," meaning that the concentration of a pollutant in the ambient air exceeds the NAAQS for that pollutant. CAA § 107(d)(1)(A)(ii), 42 U.S.C. § 7407(d)(1)(A)(ii). The PSD program is not applicable, however, in nonattainment areas. *See* CAA § 161, 42 U.S.C. § 7471.

[2]The level of significance is, for example, 40 tons per year ("tpy") for SO_2, 100 tpy for CO, and 40 tpy for ozone. 40 C.F.R. § 52.21(b)(23) (listing various air pollutants and level of emissions deemed "significant").

violations of the NAAQS and the applicable PSD increments, and the required use of BACT to minimize emissions of air pollutants, are the core of the PSD regulations." *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 247 (EAB 1999); *see also In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 73 (EAB 1998); U.S. EPA, Office of Air Quality Planning & Standards, *New Source Review Workshop Manual* 5 (draft Oct. 1990).

B. *Factual and Procedural Background*

On September 6, 2001, Panda Tallmadge Power, L.P., a company engaged, as part of Panda Energy International Inc., in the development, acquisition, ownership, and operation of power generation facilities around the globe, applied to MDEQ for permission to construct a new 1,190-MW combined-cycle electric power generating facility in the State of Michigan. Panda proposed to site the new facility in Tallmadge Township in eastern Ottawa County, approximately seven miles west of the City of Grand Rapids and twenty-three miles east of Lake Michigan. This area of the State is currently designated as attainment or unclassifiable for SO_2, CO, ozone (measured as volatile organic compounds ("VOCs")), particulate matter, and NO_2. *See* 40 C.F.R. § 81.323 (Michigan air quality status).

The proposed facility, to be known as the Tallmadge Generating Station, consists of four 170-MW natural-gas-fired combustion turbines, four heat recovery steam generators equipped with 333 MMBtu/hour natural-gas-fired duct burners, and two 255-MW steam turbine generators. *See* MDEQ Response to Petition ("MDEQ Resp.") Ex. 1 (MDEQ, New Source

Review Permit to Install No. 288-01, Tallmadge Generating Station 5 (Oct. 23, 2002)) ("Permit"); MDEQ Resp. Ex. 2 (MDEQ, PSD Permit No. 288-01 Fact Sheet at 1-2 ("Fact Sheet") & Supplemental Report at 1 ("Supp. Rep.")). As currently configured, the proposed facility has the potential to emit SO_2, CO, VOCs, particulate matter, and NO_2 in quantities sufficient to trigger the requirement for emissions limitations reflecting BACT. *See* Supp. Rep. at 8 tbl. 5; *see also* 40 C.F.R. § 52.21(b)(23) (PSD significance levels).

As part of the permit application process, Panda conducted BACT analyses for the relevant pollutants, *see* ECT, Inc., *Technical Support Document for [Revised] PSD Permit Application, Panda Tallmadge Power, L.P.* § 5.0, at 5-1 to -34 (Oct. 26, 2001) ("Panda TSD"), which were subsequently reviewed and approved by MDEQ. *See*, *e.g.*, Fact Sheet at 3 ("Panda performed a BACT analysis for NO_x, CO, [particulate matter], VOCs, SO_2, and sulfuric acid mist. * * * Staff has reviewed Panda's analyses and concurs that the proposed equipment[3] represents BACT * * *."). Panda also conducted air quality analyses, *see* Panda TSD §§ 8.0-9.0, at 8-1 to 9-35, which MDEQ subsequently reviewed and approved. *See* Supp. Rep. at 4-5; MDEQ Resp. Ex. 4, at 4 (MDEQ, Permit Evaluation Form); MDEQ Resp. Ex. 6 (Air Dispersion Analysis Summary).

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[3]BACT is an emissions limit, not a technology. *See* CAA § 169(3), 42 U.S.C. § 7479(3) ("[BACT] means an emission limitation"); *In re Three Mountain Power, L.L.C.*, PSD Appeal No. 01-05, slip op. at 23 (EAB May 30, 2001), 10 E.A.D. ___ (BACT means an emission limitation rather than a particular pollution control technology); *In re Metcalf Energy Ctr.*, Order Denying Review, PSD Appeal Nos. 01-07 & 01-08, at 13-14 (EAB Aug. 10, 2001) (same), *aff'd*, No. 01-71611 (9th Cir. Nov. 21, 2002). To be more precise, MDEQ should have stated that it concurred "that *the proposed emissions limits* [not the proposed equipment] represent BACT."

MDEQ issued a draft PSD permit to Panda on June 19, 2002, containing proposed terms and conditions to regulate the proposed power plant. That same day, the Department published a notice inviting public comment on the draft permit and establishing a month-long comment period. MDEQ subsequently held a public hearing on the draft permit on July 23, 2002, at the Tallmadge Charter Township Hall in Grand Rapids, Michigan. The Department received thirty-three written and six oral comments on the draft permit from interested parties, including Mr. Meeusen.

After reviewing the public comments on the draft permit, MDEQ issued a final PSD permit on October 23, 2002, for Panda's construction of the Tallmadge Generating Station, along with a document responding to the comments on the draft permit. *See* Permit; MDEQ Resp. Ex. 3 (MDEQ, Response to Comments Document for PSD Permit No. 288-01, Panda Tallmadge Power, L.P. (Oct. 23, 2002)) ("RTC Doc."). On November 14, 2002, Douglas Meeusen ("Petitioner") filed PSD Appeal No. 02-12 with this Board. *See* Petition for Review ("Pet'n"). At the request of the Board, MDEQ submitted a response to the merits of the petition for review on December 23, 2002. *See* MDEQ Resp. On January 6, 2003, Petitioner filed a motion for leave to reply to MDEQ's response (which the Board hereby grants), along with a reply brief and exhibits. *See* Reply Brief ("Reply Br."). The Board subsequently directed MDEQ to file supplemental briefing on the issue of wind shear, which the Department did on March 11, 2003. *See* MDEQ Supplemental Brief ("Supp. Br."). Petitioner filed a reply to that brief on March 13, 2003. *See* Response of Petitioner to MDEQ Supplemental Brief ("Supp. Resp.").

II. *DISCUSSION*

Under the rules governing this proceeding, a PSD permit ordinarily will not be reviewed unless it is based on a clearly erroneous finding of fact or conclusion of law, or involves an important matter of policy or exercise of discretion that warrants review. *See* 40 C.F.R. § 124.19(a); 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). The Board's analysis of PSD permits is guided by the preamble to section 124.19, which states that the Board's power of review "should be only sparingly exercised" and that "most permit conditions should be finally determined at the [permit issuer's] level." 45 Fed. Reg. at 33,412; *see In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 174 (EAB 2000). The burden of demonstrating that review is warranted rests with the petitioner, who must state his/her objections to the permit and explain why the permit issuer's previous response to those objections is clearly erroneous, an abuse of discretion, or otherwise warrants review. *Steel Dynamics*, 9 E.A.D. at 174; *In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 71-72 (EAB 1998); *In re EcoEléctrica, L.P.*, 7 E.A.D. 56, 60-61 (EAB 1997).

The question presently before the Board is whether Petitioner has made a sufficient showing that any condition or conditions of the PSD permit are clearly erroneous or involve an important matter of policy or exercise of discretion warranting review. In the analysis below, we remand the permit to MDEQ on two grounds and deny review of all other issues.

A. *Meteorology and Dispersion Modeling*

1. *Wind Shear versus Inversion Modeling*

Petitioner begins his arguments by contending that MDEQ failed to respond adequately to comments he submitted on the draft permit regarding a "kind of wind shear effect" that purportedly exists in the area of the proposed plant site. Pet'n at 9-10. Petitioner claimed in his comments that, under certain circumstances, air flowing west to east over Lake Michigan rises as it reaches the western shore of Michigan and then rushes downward toward the land surface approximately twenty miles inland from the Lake, in the vicinity of the proposed plant and the City of Walker. Pet'n Ex. 1 ¶ 7, at 8 (Douglas Meeusen, Comments on PSD Permit No. 288-01, at 8 (July 23, 2002)). Petitioner expressed concern that air contaminants emitted by the proposed plant could be carried directly to ground level by this weather pattern and therefore asked MDEQ to address the pattern in its air quality analysis. *Id*.

In its response to comments, MDEQ acknowledged Petitioner's air quality concern by noting, "It is recognized that the cooler air from Lake Michigan can cause low-level inversions thus trapping pollutants near the [land] surface." RTC Doc. at 5. MDEQ explained that it attempted to analyze the conditions highlighted by Petitioner by rerunning its dispersion model with a "worst-case" meteorology data set that assumed a stable, 100-meter inversion layer and light winds. According to MDEQ, "[t]hese modified meteorological conditions forced minimal dispersion with pollutants remaining near ground levels." *Id*. The Department concluded,

however, that even under these worst-case conditions, emissions expected from the new power plant would not cause or contribute to any exceedances of the NAAQS. *Id*.

On appeal to this Board, Petitioner contends that a weather inversion of the kind analyzed by MDEQ is not equivalent to the wind shear-type event he described in his comments. Pet'n at 10. He therefore asks the Board to direct MDEQ to conduct new dispersion modeling using an EPA air quality model that evaluates wind shear effects. *Id*. MDEQ responds by asserting that "[t]here are no more-conservative meteorological inputs that the MDEQ could have used to analyze the impact of the facility's emissions" and, therefore, the Department's analysis of the emissions impacts is accurate. MDEQ Resp. at 6.

To enable it to more fully understand MDEQ's position, the Board directed the Department to file a supplemental brief on this subject and provided Petitioner an opportunity to respond to that brief. *See* Order Directing Supplemental Briefing at 3. In its supplemental brief, MDEQ maintains that while it did not, in fact, model the specific meteorological pattern Petitioner raised in his comments, the weather phenomenon Petitioner describes does not actually occur in nature, and, even if the phenomenon did occur, it would serve only to disperse the air pollutants and improve air quality at ground level. Supp. Br. at 2-3; *cf*. RTC Doc. at 5. MDEQ cites the affidavit of one of its senior meteorologists as support for these arguments. *See* Supp. Br. Ex. 1 (Affidavit of James G. Haywood, Senior Meteorologist, Air Quality Division, MDEQ).

Petitioner argues in response that the Department has mischaracterized the weather pattern driving his concern as a "common lake shore breeze" when, in fact, it is a downward flow of air (i.e., a kind of wind shear) precipitated as a result of storm events over Lake Michigan. Supp. Resp. at 4-6. Petitioner continues to maintain that this weather pattern does occur, but, in so doing, he cites nothing other than his own opinion to support his arguments. *See id*. Petitioner also contends that MDEQ wrongly asserts that downward flows of air would "'disperse pollutants around the proposed facility at issue in this matter, lower their concentrations, and result in better air quality.'" Supp. Resp. at 7 (quoting Supp. Br. Ex. 1 ¶ 5, at 2). As support for this argument, he offers, again, only his personal opinion. *See id*. at 7-9.

We note that in permit appeals, the Board traditionally assigns a heavy burden to petitioners seeking review of issues that are technical in nature. *See*, *e.g.*, *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 201 (EAB 2000); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001); *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 403 (EAB 1997). As we have explained:

> [W]hen presented with technical issues, we look to determine whether the record demonstrates that the [permit issuer] duly considered the issues raised in the comments and whether the approach ultimately adopted by the [permit issuer] is rational in light of all the information in the record. If we are satisfied that the [permit issuer] gave due consideration to comments received

> and adopted an approach in the final permit decision that is rational and supportable, we typically will defer to the [permit issuer's] position. Clear error or reviewable exercise of discretion are not established simply because the petitioner presents a different opinion or alternative theory regarding a technical matter, particularly when the alternative theory is unsubstantiated.

In re MCN Oil & Gas Co., Order Denying Review, UIC Appeal No. 02-03, slip op. at 25-26 n.21 (EAB Sept. 4, 2002) (citations omitted); *accord In re Three Mountain Power, L.L.C.*, PSD Appeal No. 01-05, slip op. at 17 (EAB May 30, 2001), 10 E.A.D. ___; *Steel Dynamics*, 9 E.A.D. at 180 n.16, 201; *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. U.S. EPA*, 185 F.3d 862 (3d Cir. 1999).

In this case, the issues of wind shear, inversion, air flow, and pollutant dispersion are technical matters, as are the analyses needed to evaluate these considerations properly. Indeed, the key issue in this regard hinges on the "worst-case" modeling assumptions used to analyze air quality and the question whether those assumptions are such that, even if the wind shear weather phenomenon Petitioner describes actually exists (which MDEQ disputes), the fact that modeling using those assumptions shows no violation of the NAAQS means there would also be no violation using Petitioner's assertions.

While the Department answers this question in the affirmative, *see* Supp. Br. at 3 (Petitioner's "wind shear phenomenon would result in emissions further below the federal NAAQS than the emissions level the MDEQ identified using its worst-case meteorological data set"); *see also* RTC Doc. at 5, it is only through its supplemental brief that the support for its position is made clear. While Petitioner was afforded an opportunity to respond to MDEQ's supplemental brief, this does not detract from the obligation for MDEQ to have in the administrative record at the time of permit issuance an adequate response to comments as required by 40 C.F.R. § 124.17.

Because we deem MDEQ's response to Petitioner's comments in this regard inadequate without the amplification provided by the supplemental brief, we remand the permit so that the Department can ensure that its response to comments addresses Petitioner's concerns in a meaningful way in the administrative record.

2. *Urban versus Rural Designation*

Next, Petitioner contends that MDEQ abused its discretion by designating the plant site area as "rural" rather than "urban" for air quality dispersion modeling purposes. Pet'n at 10-11; Reply Br. at 5-6 & Exs. 1-3. In support of this contention, Petitioner points out that the plant site is approximately one kilometer from the city limits of Walker, "a highly populated, industrialized, and vibrant city," and that Walker is in turn adjacent to the cities of Grand Rapids and Grandville. Reply Br. at 5. He also submits recent United States Census Bureau

information that indicates the plant site falls within the boundaries of the "Grand Rapids Urbanized Area." Reply Br. Exs. 2-3. Petitioner requests that the dispersion modeling for the Panda permit be rerun using urban dispersion coefficients, which he claims would generate more stringent emission controls than those required in a rural setting. *Id*. at 6; *see* Pet'n at 11.

MDEQ responds by citing EPA's guideline on air quality monitoring, published at 40 C.F.R. part 51, appendix W, and by indicating that the Department complied with that guideline in choosing to designate the proposed plant site as "rural." MDEQ Resp. at 6-7. The EPA guideline establishes two alternative methods for selecting rural or urban dispersion coefficients for use in air quality modeling: (1) the "land use procedure"; and (2) the "population density procedure." 40 C.F.R. pt. 51, app. W, § 8.2.8. The land use procedure, which EPA considers the "more definitive" method, *id*. § 8.2.8(d), involves determining whether at least fifty percent of the land uses within a three-kilometer radius of the proposed source consist of heavy industrial, light/moderate industrial, commercial, or compact single/multi-family residential. *Id*. § 8.2.8(b); *see* August H. Auer, Jr., *Correlation of Land Use and Cover with Meteorological Anomalies*, 17 J. Applied Meteorology 636, 638 tbl. 1 (1978). If they do, the urban dispersion coefficients are used; otherwise, the rural coefficients are chosen. 40 C.F.R. pt. 51, app. W, § 8.2.8(b). Under the alternative population density procedure, the urban dispersion coefficients are used if the average population density within the three-kilometer radius is greater than 750 people per square kilometer; otherwise, the rural coefficients are chosen. *Id*. § 8.2.8(c).

In this case, MDEQ asserts that it employed the land use procedure and determined that less than fifty percent of qualifying "urban" land use types were present in the three-kilometer-radius area surrounding the proposed plant, thus justifying a "rural" designation for the plant site. MDEQ Resp. at 7 & Ex. 5. Petitioner's Census Bureau information does not directly challenge this conclusion.[4]

In the absence of specific information demonstrating that fifty percent or more of the land uses around the Panda site are qualifying "urban" uses, we cannot hold that MDEQ made an error of fact or law or abused its discretion in choosing to conduct air quality modeling using the "rural" parameters. It appears that MDEQ used the preferred land use method, and Petitioner

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[4]The Census Bureau information consists of population density rather than land use data. The Census Bureau defines the term "urbanized area" (as in the "Grand Rapids Urbanized Area") as follows:

> For Census 2000, the Census Bureau classifies as "urban" all territory, population, and housing units located within an urbanized area (UA) or an urban cluster (UC). It delineates UA and UC boundaries to encompass densely settled territory, which consists of:
> - core census block groups or blocks that have a population density of at least 1,000 people per square mile and
> - surrounding census blocks that have an overall density of at least 500 people per square mile.
>
> In addition under certain conditions, less densely settled territory may be part of each UA or UC.

U.S. Census Bureau, *Census 2000 Urban and Rural Classification* (Oct. 24, 2002), http://www.census.gov/geo/www/ua/ua_2k.html.

has not persuaded us that the method was misapplied.[5] Review is accordingly denied on this ground.[6]

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[5]Petitioner submitted a map showing the Walker, Michigan city limits falling within approximately one-third of the three-kilometer-radius circle around the proposed plant site. *See* Reply Br. Ex. 1. Petitioner's map is more informative in this regard than the land use map submitted by MDEQ in response to the Petition, *see* MDEQ Resp. Ex. 5, but it nonetheless falls short of what is needed to establish clear error on the part of MDEQ. The proximity of city limits does not *ipso facto* equate to findings of qualifying "urban" land uses such as industrial, commercial, or high-density residential; there might just as easily be park lands, schools, or other low-density land uses scattered within the affected portions of the city.

[6]We are unable to tell from Petitioner's census materials whether the plant site's inclusion in the Grand Rapids Urbanized Area necessarily means that the three-kilometer-radius circle around the plant contains an average population density greater than 750 people per square kilometer, consistent with the EPA population density guideline for determining that the character of an area is primarily urban. The Census Bureau information indicates only that "urbanized areas/clusters" have at least 500 to 1,000 people per square mile and that in some instances less densely settled territory may also be classified as "urban." We have no information as to whether the particular portion of the Grand Rapids Urbanized Area in which the Panda site is situated falls within the 500-per-square-mile, 1,000-per-square-mile, or "less dense" population categories, nor do we have before us any attempt by the Petitioner to convert the square mile figures to square kilometer numbers that would be meaningful in relation to the EPA guideline. We cannot reasonably conclude, without data of this type, that Petitioner has carried his burden of establishing clear error or abuse of discretion on the part of MDEQ in choosing the "rural" designation. *Cf.*, *e.g.*, *In re AES P.R. L.P.*, 8 E.A.D. 324, 330-41 (EAB 1999) (petitioner failed to carry burden of proving that permit issuer's air quality analysis was clearly erroneous or otherwise warranted review), *aff'd sub nom. Sur Contra La Contaminacion v. EPA*, 202 F.3d 443 (1st Cir. 2000); *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 120-23 (EAB 1997) (same); *In re Commonwealth Chesapeake Corp.*, 6 E.A.D. 764, 779 (EAB 1997) (petitioner has burden of proof of establishing that permit issuer's determination is clearly erroneous).

In any case, even if we were to find that Petitioner had successfully established that the subject area could be considered "urban" on population density grounds, such a finding would not overcome MDEQ's determination that the area is "rural" using the land use typology procedure. As previously noted, the regulations indicate that the land use method is "more definitive" than the population density method. *See* 40 C.F.R. pt. 51, app. W § 8.2.8(d).

3. *Response to Comments Regarding Stack Height and Plant Elevation*

Petitioner's final argument pertaining to the air quality modeling conducted for this permit is, in essence, a criticism of MDEQ's response to comments on the draft permit. *See* Pet'n at 11. Commenters had raised questions about stack height and low plant elevation, expressing concern that the plant's low-altitude emissions, carried by prevailing westerly winds, would have a disproportionately adverse impact on homes and schools in nearby Walker, Michigan. *See* RTC Doc. at 5-6. MDEQ had responded by asserting that air contaminant concentrations would peak at the "facility fence line" and would diminish with distance from the facility, "regardless of micro-climate weather conditions." *Id*.

On appeal, Petitioner questions the location of the "facility fence line," stating that MDEQ's air model did not contain a "fence line" parameter of analysis. Pet'n at 11. He then contends:

> The emissions are all coming out of the stack at 50 or 100 feet high and moving with the airflow. These emissions are doing anything but as a rule coming straight down towards the nebulous fence line. These emissions are being governed by the very microclimate weather conditions that MDEQ is ignoring.

Id. Petitioner concludes by asserting that MDEQ's allegedly imprecise and confusing comment response "makes suspect all MDEQ modeling results," and he requests review of the permit due to the "inability of MDEQ to give a clear and concise response to the issues raised." *Id*.

The Board and its predecessors have long held that permit issuers must adequately document their decisionmaking processes. *See*, *e.g.*, *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 191 & n.31 (EAB 2000); *In re GSX Servs. of S.C., Inc.*, 4 E.A.D. 451, 453-54 (EAB 1992). Specifically, a permit issuer "'must articulate with reasonable clarity the reasons for [its] conclusions and the significance of the crucial facts in reaching those conclusions.'" *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417 (EAB 1997) (quoting *In re Carolina Power & Light Co.*, 1 E.A.D. 448, 451 (Act'g Adm'r 1978)). Thus, in *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121 (EAB 1999), for example, the Board remanded a PSD permit because the permit application contained the conclusion of a BACT analysis but not the underlying analysis -- i.e., the "clearly ascertainable basis" for the conclusion -- itself. *See id*. at 134-42. Similarly, in *In re Austin Powder Co.*, 6 E.A.D. 713 (EAB 1997), the Board remanded a waste management permit because the permit issuer offered two conflicting explanations for excluding a particular permit term, thus rendering its rationale for the permit determination unclear. *See id*. at 717-20.

In this instance, Petitioner appears to be correct in arguing that MDEQ used the term "facility fence line" without explicitly defining the spatial coordinates of that line or, more importantly, demonstrating that pollutant concentrations in fact peak at precisely that point. *See* RTC Doc. at 5-6; MDEQ Resp. Ex. 6 (Air Dispersion Analysis Summary) (no mention of

"facility fence line" or location of maximum impacts). *But see* Panda TSD § 9.1.4, at 9-6 & figs. 3-3, 9-1 ("the entire perimeter of the facility will be fenced"). MDEQ's response to the petition states only that because of the "fundamental dynamics of air flow over buildings and obstacles," the highest modeled concentration of air pollutants "can, and frequently does, occur at the nearest point of measurement (i.e., the fence line) if buildings are in near proximity of the stack." MDEQ Resp. at 7.

Nonetheless, we are not persuaded that further review of this permit on the basis Petitioner raises is warranted. MDEQ made it quite plain that, irrespective of the placement of the fence line, maximum impacts expected to be caused by emissions from the proposed facility are "well below" the NAAQS thresholds and all other MDEQ screening levels. *See* RTC Doc. at 5; MDEQ Resp. Ex. 6. Petitioner has not identified any clear error, abuse of discretion, or other reason for us to question this finding. *Cf. In re Hadson Power 14--Buena Vista*, 4 E.A.D. 258, 263-75, 293-97 (EAB 1992) (petitioners demonstrated clear error in air quality analysis and public notice with respect to same, thus resulting in partial remand of permit). Indeed, on the record before us, we have no reason to suspect that a remand asking for clarification of the fence line position and the precise location of maximum pollutant impacts would alter MDEQ's ultimate conclusion that the NAAQS and other thresholds are not exceeded, or would have any effect on permit conditions whatsoever. Thus, review on this ground must be denied.

B. *Rolling Time Periods*

Petitioner contends that MDEQ failed to address in good faith his comments on the allegedly "grossly excessive" pollutant emission averaging intervals specified in the Panda permit. Pet'n at 12. In the permit, MDEQ authorized two BACT emission limits for each of the pollutants NO_x, CO, and VOCs (as well as other pollutants not relevant to this appeal): (1) a parts per million or pounds per hour emission limit, to be met on a twenty-four-hour rolling average basis, as determined each hour; and (2) a tons per year emission limit, to be met on a twelve-month rolling average basis, as determined at the end of each calendar month. Permit conds. 2.1a-.1f, at 7. In his comments, Petitioner had asked the Department to reduce the averaging periods for these pollutants to two-hour and two-month rolling time periods, respectively. Pet'n Ex. 1 ¶ 12, at 9. In so doing, Petitioner did not offer any specific examples of shorter averaging periods being incorporated into permits for other similar facilities, nor did he explain the reasons why he selected the particular averaging periods he proposed in his comments. *See id*. Instead, Petitioner contended only that the long averaging periods in the permit would "allow, if not guarantee, frequent months and hours where toxic pollutant levels [could] significantly harm the population downwind from this plant." Pet'n Ex. 1 ¶ 12, at 9.

In response to Petitioner's comments, the Department stated:

> Each compound in question has been evaluated by scientists at both the state and federal level. The best available information is

> used to establish safe exposure levels and exposure times that are not expected to cause harmful health effects to the public or the environment. The averaging time periods listed in the permit have been developed based on this research. The permit contains proper and sufficient monitoring and recordkeeping requirements to ensure that the applicable health standards will not be exceeded for each appropriate averaging time period.

RTC Doc. at 10.

On appeal, Petitioner points out for the first time that two recent PSD permits for new power plants in California (i.e., Three Mountain Power in Burney and Metcalf Energy Center in San Jose) contain CO emissions limits that involve three-hour, not twenty-four-hour, averaging requirements. Pet'n at 12; *see In re Three Mountain Power, L.L.C.*, PSD Appeal No. 01-05, slip op. at 19-22 (EAB 2001), 10 E.A.D. ___ ("*TMP*") (CO BACT equals 4.0 parts per million, dry volume ("ppmvd"), at fifteen percent oxygen averaged over three hours); *In re Metcalf Energy Ctr.*, Order Denying Review, PSD Appeal Nos. 01-07 & 01-08, at 13-20 (EAB Aug. 10, 2001) (CO BACT equals 6.0 ppmvd (with potential to be reduced to 4.0 ppmvd at later time) at fifteen percent oxygen averaged over three hours), *aff'd*, No. 01-71611 (9th Cir. Nov. 21, 2002). He also observes that these Board cases acknowledge the most common CO averaging time for sources in EPA Region IX is three hours. Pet'n at 12; *see TMP*, slip op. at 19, 10 E.A.D. ___; *Metcalf*, slip op. at 16 n.11. Petitioner concludes by arguing that, in light of these other cases,

MDEQ "clearly overstepped its discretionary bounds" by adopting the twenty-four-hour and twelve-month averaging times in the permit. Pet'n at 12.

We cannot fault the Department for failing to address the *TMP* and *Metcalf* cases in its response to comments, as the averaging periods chosen in those cases were not explicitly brought to MDEQ's attention in the public comments.[7] Moreover, in his comments, Petitioner raised averaging periods as an air quality issue, and MDEQ responded in kind, whereas the issues in both *TMP* and *Metcalf* were related to BACT.[8] The Department reviewed and approved Panda's air quality modeling, and Petitioner has not attempted to demonstrate that the air quality analysis was in error. Thus, in these circumstances, Petitioner has failed to carry his burden of

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[7]Under the regulations governing this PSD permit review process, persons seeking review of a permit must demonstrate that any issues or arguments raised on appeal were previously raised during the public comment period on the draft permit, or were not reasonably ascertainable at that time. 40 C.F.R. §§ 124.13, .19(a); *see In re Sutter Power Plant*, 8 E.A.D. 680, 686-87 & n.8 (EAB 1999). This requirement, called "preserving an issue/argument for appeal," is justified by the following rationale: "The effective, efficient, and predictable administration of the permitting process demands that the permit issuer be given the opportunity to address potential problems with draft permits before they become final." *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 250 (EAB 1999); *accord In re Phelps Dodge Corp.*, NPDES Appeal No. 01-07, slip op. at 82 (EAB 2002), 10 E.A.D. ___. "'In this manner, the permit issuer can make timely and appropriate adjustments to the permit determination, or, if no adjustments are made, the permit issuer can include an explanation of why none are necessary.'" *In re Essex County (N.J.) Resource Recovery Facility*, 5 E.A.D. 218, 224 (EAB 1994) (quoting *In re Union County Resource Recovery Facility*, 3 E.A.D. 455, 456 (Adm'r 1990)).

Petitioner does not argue here that he or anyone else raised the *TMP* and *Metcalf* cases in comments on the draft permit, nor does he contend that the *TMP* and *Metcalf* cases were not reasonably ascertainable during the public comment period on the Panda permit. Thus, the argument has not been preserved for appeal, and we will not grant review of the permit on that basis.

[8]Averaging periods can be raised as a BACT issue but, in light of the fact that Petitioner did not raise the issue in that context, we will not address it as such here.

persuading us that MDEQ's actions in incorporating these twenty-four-hour and twelve-month averaging times into the Panda permit were clearly erroneous, an abuse of discretion, or otherwise warrant review.

C. *Startup/Shutdown Periods*

Finally, Petitioner objects to various permit conditions governing facility emissions during turbine startup and shutdown.[9] The permit authorizes the Tallmadge Generating Station to engage in 4,000 hours of startup/shutdown time per twelve-month rolling time period, which equates to three hours of startup/shutdown time per turbine per day. Permit cond. 2.5, at 9; RTC Doc. at 9. The permit explicitly exempts the power plant from complying with its BACT and other emission limits for NO_x, CO, VOCs, particulate matter, SO_2, ammonia, formaldehyde, and opacity during all startup, shutdown, and malfunction events. Permit conds. 2.1a-.1k note**, 2.2, at 7-9. Turbine operation is contingent, however, on Panda's prior submission, and MDEQ's approval, of a plan that describes how emissions will be minimized during startups, shutdowns, and malfunctions. *Id*. cond. 2.9, at 9. The plan must incorporate "procedures recommended by the equipment manufacturer" and "standard industry practices," and, "[u]nless

[9]"Startup" is defined in the permit as "the period of time from initiation of combustion firing until the unit reaches steady state operation." Permit cond. 2.5, at 9. "Shutdown" is "that period of time from the initial lowering of the turbine output, with the intent to shut down, until the point at which the combustion process has stopped." *Id*. As reported in Panda's permit application, startups will range in duration from approximately 4 hours (cold start) to 1.5 hours (hot start), with warm starts taking approximately 2.5 hours. Permit App. § 4.6.7, at 4-14. Shutdowns will take approximately 30 minutes. *Id*. tbl. 4-3 notes, at 4-21; RTC Doc. at 9.

notified by [MDEQ] within 30 business days after plan submittal, the plan shall be deemed approved." *Id*.

In his comments on the draft permit, Petitioner referenced the emission limits set forth in conditions 2.1a through 2.1k of the permit and stated, "I ask that [Panda] be required to modify [its] turbines so as not to exceed by more than 20% the emission limit[s] set for steady state operation. This can be done with Best Available Control Technology." Pet'n Ex. 1 ¶ 11, at 8-9. MDEQ did not respond to Petitioner's comments in this context but instead focused on the air quality aspect of startup/shutdown emissions. *See* RTC Doc. at 9 ("the increase in emissions during startup and shutdown conditions was included in the modeling analysis and maximum impacts are still below the federal health standards"). Now, on appeal, Petitioner contends that MDEQ committed a "gross violation" of its discretionary and regulatory powers by authorizing Panda to emit air pollutants without limit for as much as half of each day. Pet'n at 13-14.

As noted above, MDEQ did not respond to the BACT component of Petitioner's comments on the draft permit. While its response focused on the air quality impacts of the startup/shutdown provisions, the BACT requirements of the CAA's PSD program are separate from the air quality requirements. Because the two sets of requirements are independent, air pollution control methods or technologies not otherwise required to meet the NAAQS can be found to be necessary, in certain circumstances, to fulfill BACT. *Compare* CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4), *and* 40 C.F.R. § 52.21(j) (BACT requirements), *with* CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3), *and* 40 C.F.R. § 52.21(k) (air quality requirements). *See generally* U.S.

EPA, Office of Air Quality Planning & Standards, *New Source Review Workshop Manual* cpts. B-C (draft Oct. 1990).

Important in this regard is the fact that BACT requirements cannot be waived or otherwise ignored during periods of startup and shutdown. EPA has issued three guidance documents over the years clearly expressing the Agency's long-standing position that automatic exemptions for excess emissions (i.e., emissions in excess of BACT or other permit limits) during startup and shutdown periods cannot be reconciled with the directives of the CAA. *See* Memorandum from John B. Rasnic, Director, Stationary Source Compliance Division, Office of Air Quality Planning and Standards, U.S. EPA, to Linda M. Murphy, Director, Air, Pesticides, and Toxics Management Division, U.S. EPA Region I (Jan. 28, 1993) ("Rasnic Memo"); Memorandum from Kathleen M. Bennett, Assistant Administrator for Air, Noise, and Radiation, U.S. EPA, to Regional Administrators, Regions I-X (Feb. 15, 1983) ("1983 Bennett Memo"); Memorandum from Kathleen M. Bennett, Assistant Administrator for Air, Noise, and Radiation, U.S. EPA, to Regional Administrators, Regions I-X (Sept. 28, 1982) ("1982 Bennett Memo"). These guidance documents each express the notion that:

> Startup and shutdown of process equipment are part of the normal operation of a source and should be accounted for in the planning, design, and implementation of operating procedures for the process and control equipment. Accordingly, it is reasonable to expect that

> careful and prudent planning and design will eliminate violations of emission limitations during such periods.[10]

Rasnic Memo at 2; 1983 Bennett Memo at 1; 1982 Bennett Memo at 3.

The Board has previously addressed these issues in *In re RockGen Energy Center*, 8 E.A.D. 536 (EAB 1999). Citing the Agency guidance mentioned above, the Board in *RockGen* remanded a PSD permit issued by the Wisconsin Department of Natural Resources ("WDNR") in part because such permits may not contain blanket exemptions allowing emissions in excess of BACT limits during startup and shutdown. *Id*. at 553-55. The offending permit had authorized RockGen, the permittee, to exceed its BACT emission limits in cases where the emissions were "temporary and due to startup or shutdown of operations carried out in accord with a plan and schedule approved by [WDNR].'" *Id*. at 551 (quoting RockGen permit). The Board found the administrative record to be lacking in evidence that WDNR had sufficiently considered design or other possible changes to the proposed facility to eliminate excess

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[10]The Agency has stated further, however, that in cases where excess emissions may still occur on an infrequent basis -- despite careful planning and design -- permitting authorities should exercise their enforcement discretion in accordance with the following prudential guideline:

> [I]nfrequent periods of excess emissions during startup and shutdown need not be treated as violations where the source adequately shows that the excess could not have been prevented through careful planning and design and that bypassing of control equipment was unavoidable to prevent loss of life, personal injury, or severe property damage.

Rasnic Memo at 2; 1983 Bennett Memo at 2; 1982 Bennett Memo at 3.

emissions. *Id*. at 553. The Board also noted that the permit contained no provision for the described startup/shutdown plan to be subject to the public notice and review requirements set forth in EPA regulations. *Id*. The Board held that, because of this latter deficiency, the permit "improperly allow[ed] for modification outside the permitting process." *Id*. at 554 n.22.

The startup/shutdown provisions of the permit now before us are similar in a number of important respects to those of the remanded RockGen permit. This permit, like RockGen's, exempts the permittee from complying with BACT and other emission limits during startup and shutdown events, as long as the permittee has prepared a plan, approved by the permit issuer, to minimize emissions during those events. The administrative record here, as in *RockGen*, is devoid of evidence that the permit issuer (here MDEQ) considered ways to eliminate or reduce excess emissions during startup and shutdown, as it is obliged to do to ensure compliance with the CAA. *See* Fact Sheet at 1-4 (no discussion of excess startup/shutdown emissions); Supp. Rep. at 1-8 (same); MDEQ Resp. Ex. 4, at 3, 5, 8 (noting, among other things, MDEQ's request for and receipt of Panda's justification for requesting 4,000 hours of startup/shutdown time); RTC Doc. at 9 (no discussion of eliminating or reducing excess startup/shutdown emissions); Permit App. at 4-13 to -21 (acknowledging existence of excess emissions during startup/shutdown but not analyzing ways to eliminate or reduce such emissions). Instead, the crucial emissions elimination/reduction analysis has been assigned to the permittee, Panda, to be conducted in the future (prior to turbine operation), summarized in a plan, and approved by MDEQ (either explicitly or simply by lapse of time), without public review, comment, or appeal of any kind. *See* Permit cond. 2.9, at 9. This scheme, like the scheme in *RockGen*, is

unacceptable under the CAA, and we therefore remand the permit to MDEQ for reconsideration. *See RockGen*, 8 E.A.D. at 551-55; *see also MDEQ v. Browner*, 230 F.3d 181, 183-86 (6th Cir. 2000) (affirming EPA rejection of Michigan CAA rules as not meeting CAA requirements because of improper exclusions from emission limits during startup/shutdown). The remand conditions set out below are very similar to those imposed on WDNR in *RockGen*. *See RockGen*, 8 E.A.D. at 554-55.

On remand, MDEQ must reconsider and revise the permit provisions that regulate emissions during facility startup and shutdown (i.e., Permit conds. 2.1a-.1k note**, 2.2, 2.5, 2.9, at 7-9). If MDEQ chooses to retain provisions that exempt facility emissions from compliance with BACT and other emission limits during startup and shutdown events, the Department must make an on-the-record determination that such compliance is infeasible during startup and shutdown and include a discussion of the specific reasons for this conclusion of infeasibility. As part of this on-the-record determination, MDEQ must describe what design, control, methodological, or other changes are appropriate for inclusion in the permit to minimize the authorized excess emissions during startup and shutdown. *See RockGen*, 8 E.A.D. at 554 n.23 (citing BACT definition in 40 C.F.R. § 52.21(b)(12), which contemplates use of production processes, available methods, systems, and techniques, or design, equipment, work practice, or operational standards to achieve BACT). In so doing, MDEQ may choose to require that once the facility is operational, any permit provisions designed to reduce emissions during startup and shutdown should be refined over time so as to increase the provisions' efficiency and effectiveness. *See id*. at 554 (citing *In re Hadson Power 14 -- Buena Vista*, 4 E.A.D. 258, 291

(EAB 1992); *In re Pennsauken County, N.J. Resource Recovery Facility*, 2 E.A.D. 768, 771 (Adm'r 1989)). MDEQ must also include in the administrative record a thorough explanation of its decision to authorize Panda to engage in 4,000 hours of startup/shutdown time per year (or any different amount of time, if MDEQ chooses to alter that determination), along with a discussion of whether and how the specified amount of authorized startup/shutdown time comports with EPA guidance regarding the "infrequent" occurrence of excess emissions.

In addition, if MDEQ determines that compliance with the permit's BACT and other emission limits cannot be achieved during startup and shutdown despite best efforts, it should specify and carefully circumscribe in the permit the conditions under which Panda would be authorized to exceed these otherwise applicable emissions limits and establish (as it already has done in the existing permit, *see* RTC Doc. at 9) that such conditions are nonetheless in compliance with applicable requirements, including NAAQS and PSD increment provisions. The Department may also wish to consider establishing secondary PSD limits that would apply to pollutants emitted during startup/shutdown periods; if it does so, such limits must be made part of the PSD permit and justified as BACT. In its revision of these permit conditions (whether the revision omits or continues authorization of excess emissions during startup/shutdown), MDEQ must provide the public with notice and an opportunity to submit comments on the revised draft of the permit, as well as an opportunity to file petitions for review with the Board in accordance with the procedures of 40 C.F.R. part 124.

III. *CONCLUSION*

For the foregoing reasons, PSD Permit No. 288-01 is remanded to MDEQ for further proceedings in accordance with the instructions set forth in Parts II.A.1 and II.C above. All other portions of the petition for review are denied.

So ordered.

ENVIRONMENTAL APPEALS BOARD[11]

Date: 5/21/03

/s/
Edward E. Reich
Environmental Appeals Judge

[11]The three-member panel deciding this matter consisted of Environmental Appeals Judges Edward E. Reich, Kathie A. Stein, and Scott C. Fulton. *See* 40 C.F.R. § 1.25(e)(1).

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Order Denying Review in the matter of Tallmadge Generating Station, PSD Appeal No. 02-12, were sent to the following persons in the manner indicated:

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/s/
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