



(Slip Opinion)

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

In re:

Footprint Power Salem Harbor
Development, LP

Application No. NE-12-022
Transmittal No. X254064

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) PSD Appeal No. 14-02
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[Decided September 2, 2014]

ORDER DENYING REVIEW

***Before Environmental Appeals Judges Randolph L. Hill,
Catherine R. McCabe, and Kathie A. Stein.***

**IN RE FOOTPRINT POWER SALEM
HARBOR DEVELOPMENT, LP**

PSD Appeal No. 14-02

ORDER DENYING REVIEW

Decided September 2, 2014

Syllabus

Four individuals ("Petitioners") jointly filed a petition seeking review of a Clean Air Act Prevention of Significant Deterioration ("PSD") permit ("Permit") that the Massachusetts Department of Environmental Protection ("MassDEP") issued to Footprint Power Salem Harbor Development, LP ("Footprint"). The permit authorizes Footprint to construct and operate a combined cycle electric generating facility in Salem, Massachusetts.

Petitioners challenge several conditions of the Permit, including MassDEP's best available control technology ("BACT") analysis, air quality analysis, and decision not to reopen the public comment period.

Held: The Environmental Appeals Board ("Board") denies the petition for review of MassDEP's final permit decision in all respects.

- (1) BACT Emission Limit for Particulate Matter: MassDEP adequately explained that Footprint's need to operate the Salem facility at varying loads necessitated a particulate matter emission limit that Footprint could meet during all operating scenarios.
- (2) BACT Emission Limit for Greenhouse Gases: MassDEP adequately explained that the Salem facility will use dry cooling, which is slightly less energy efficient compared to wet cooling, because the Salem facility's location in coastal New England would otherwise require a special, less efficient form of wet cooling technology to mitigate persistent fog plumes. MassDEP properly accounted for equipment degradation over the life of the facility when setting the greenhouse gas BACT limit.
- (3) BACT Emission Limit for Nitrogen Oxides at Startup and Shutdown: MassDEP properly accounted for "cold" startups that emit more nitrogen oxides than "warm" or "hot" startups when setting the BACT emission limit. Moreover, MassDEP chose an emission limit that was more stringent than the limits for most of the facilities included in the BACT analysis. MassDEP could

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not verify that either of the two facilities Petitioners claim have more stringent emission limits for startup and shutdown could meet those limits in practice.

- (4) BACT Emission Limit for Volatile Organic Compounds: MassDEP properly removed the volatile organic compound ("VOC") emission limits from the Permit because the Salem facility did not have the potential to emit the ozone precursor, VOCs, in significant amounts. Ozone is emitted in significant amounts if a source's emissions have the potential to equal or exceed "40 tpy of volatile organic compounds or nitrogen oxides." The Salem facility has the potential to emit nitrogen oxides at a rate greater than 40 tpy, but VOCs fall below that level. Petitioners did not show that MassDEP clearly erred in applying BACT requirements only to nitrogen oxides and not to VOCs.
- (5) Reopening the Public Comment Period: Petitioners have not demonstrated that MassDEP clearly erred in not reopening the comment period on the BACT analysis. MassDEP did not make significant changes to the BACT emission limits between the draft and final permit and MassDEP's revisions to the BACT analysis came into response to public comments and did not raise substantial new questions. Appeal to the Board provides Petitioners with an adequate opportunity to challenge the BACT analysis before the permit becomes final.
- (6) Use of Significant Ambient Impact Levels ("SILs") in Cumulative Air Quality Analysis: Petitioners have not shown that their argument concerning SILs was raised during the public comment period and thus preserved for Board review. SILs have been used both as a screening tool to determine if a more involved air quality analysis, referred to as a cumulative impact analysis, is necessary, and in the design of the cumulative impact analysis. The only comment during the public comment period addressed whether MassDEP could use SILs to determine whether a cumulative impact analysis is necessary, not how MassDEP used SILs in performing the cumulative analysis. Given the fundamental differences between the comment and the issue Petitioners now raise, the Board concludes that this issue was not raised during the public comment period with the requisite clarity and specificity.
- (7) Use of Existing Air Monitoring Data: MassDEP reasonably relied on existing regional air monitoring data from the monitoring station located in Lynn, Massachusetts. MassDEP justified its decision to accept the data from the Lynn monitor on the basis that the data were both "representative" and "conservative." The Board defers to MassDEP's technical expertise and discretion regarding the choice of an appropriate data set for the air quality analysis.

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*Before Environmental Appeals Judges Randolph L. Hill,
Catherine R. McCabe, and Kathie A. Stein.*

Opinion of the Board by Judge Stein:

I. STATEMENT OF THE CASE

Jeff Brooks, Andrea Celestine, William Dearstyne, and Linda Haley (“Petitioners”) jointly petitioned the Environmental Appeals Board (“Board”) to review a Clean Air Act (“CAA”) Prevention of Significant Deterioration (“PSD”) preconstruction permit that the Massachusetts Department of Environmental Protection (“MassDEP”) issued to Footprint Power Salem Harbor Development, LP (“Footprint”). The permit authorizes Footprint to construct and operate a 692-megawatt (“MW”) combined cycle electric generating facility in Salem, Massachusetts. PSD Permit (“Permit”) at 1 (Jan. 30, 2014) (Administrative Record (“A.R.”) Index No. 8-2). Petitioners challenge several conditions of the Permit, including MassDEP’s best available control technology (“BACT”) analysis, air quality analysis, and decision not to reopen the public comment period. For the reasons set forth below, the Board denies the petition for review.

II. PRINCIPLES GOVERNING BOARD REVIEW

Section 124.19 of Title 40 of the Code of Federal Regulations governs Board review of a PSD permit. The petitioner bears the burden of demonstrating that the Board should review the permit. *See* 40 C.F.R. § 124.19(a)(4). Ordinarily, the Board will deny review of a permit decision and thus not remand it unless the petitioner shows the permit decision either is based on a clearly erroneous finding of fact or conclusion of law, or involves a matter of policy or exercise of discretion that warrants review. *Id.* § 124.19(a)(4)(i)(A)-(B); *accord, e.g., In re Prairie State Generating Co.*, 13 E.A.D. 1, 10 (EAB 2006), *aff’d sub.nom Sierra Club v. U.S. EPA*, 499 F.3d 653 (7th Cir. 2007); *see also*

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Revisions to Procedural Rules Applicable in Permit Appeals, 78 Fed. Reg. 5,281, 5,282 (Jan. 25, 2013).

When evaluating a challenged permit decision for clear error, the Board examines the petitioner's challenges against the administrative record that serves as the basis for the permit to determine whether the permit issuer exercised his or her "considered judgment." *See, e.g., In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 191, 224-25 (EAB 2000); *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417-18 (EAB 1997); *see also In re Shell Offshore, Inc.*, 13 E.A.D. 357, 386 (EAB 2007) (permit issuer must articulate with reasonable clarity the reasons supporting its conclusion and the significance of the crucial facts it relied upon when reaching its conclusion.) In reviewing an exercise of discretion by the permitting authority, the Board applies an abuse of discretion standard. *E.g., In re Guam Waterworks Auth.*, NPDES Appeal Nos. 9-15 & 9-16, slip op. at 9 n.7 (EAB Nov. 16, 2011), 15 E.A.D. ____; *see also Ash Grove*, 7 E.A.D. at 397 ("[A]cts of discretion must be adequately explained and justified.").

In considering a petition filed under 40 C.F.R. § 124.19(a), the Board first evaluates whether the petitioner has met threshold procedural requirements such as timeliness, standing, issue preservation, and specificity. *See* 40 C.F.R. § 124.19; *In re Indeck-Elwood, LLC*, 13 E.A.D. 126, 143 (EAB 2006). Assuming that a petitioner satisfies all threshold procedural obligations, the Board then evaluates the petition to determine if it warrants review.

III. PROCEDURAL AND FACTUAL HISTORY

Footprint applied to MassDEP for a PSD permit to construct a new 630 MW (692 MW with duct firing) natural gas-fired combined cycle electric generating facility, utilizing turbines manufactured by

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General Electric (“GE”).¹ *See* MassDEP, Final PSD Permit Fact Sheet 2-3 (Jan. 30, 2014) (A.R. 8-3) [hereinafter Final PSD Fact Sheet]. The new facility would replace the existing coal-fired power plant at the same location. *Id.* at 3, 20. Petitioners commented on the draft permit jointly with the Conservation Law Foundation (“CLF”). U.S. Environmental Protection Agency (“EPA”) Region 1 also commented.² *See generally* E-mail from CLF to Cosmo Buttarro, MassDEP Ne. Reg’l Office (Nov. 1, 2013) (A.R. 5-64) [hereinafter Petitioners’ Comments]; Letter from Ida E. McDonnell, U.S. EPA Region 1, to James Belsky, MassDEP Ne. Reg’l Office, at 2 (Oct. 30, 2013) (A.R. 5-52) [hereinafter Region Comments]. After reviewing public comments, MassDEP issued the final permit decision, a response to comments document, and a final fact sheet. *See* Footprint Power Salem Harbor Redevelopment LP, Salem Harbor Redevelopment Project PSD Permit Response to Comments on Draft Permit Number NE-12-022 (“RTC”) (Jan. 30, 2014) (A.R. 8-4). Petitioners appealed the final permit decision to the Board.

The Board held a status conference to determine whether information required to be available for public comment was available for Petitioners and the public to review. *See* Status Conference Transcript (“S.C. Tr.”) at 8-10 (Apr. 1, 2014); *see also* Order Scheduling Status Conference (Mar. 25, 2014). At the conference, Petitioners made clear that they were not contending that the public had been denied access to documents related to the Permit. *See* S.C. Tr. at 22-23, 26.

¹ Footprint’s initial application included modeled emissions for both Siemens and GE turbines, but Footprint informed MassDEP that it would utilize GE turbines in June 2013. *See* Second Supplement to Major Comprehensive Plan Application at 1-2 (June 10, 2013) (A.R. 4-31).

² Mr. Brooks, Mr. Dearstyne, and Ms. Haley each timely submitted their own comments as well. *See* E-mail from Jeff Brooks to James Belsky, MassDEP Ne. Reg’l Office (Oct. 14, 2013) (A.R. 5-40); E-mail from Jeff Brooks to James Belsky, MassDEP Ne. Reg’l Office (Oct. 17, 2013) (A.R. 5-42); E-mail from Jeff Brooks to Cosmo Buttarro, MassDEP Ne. Reg’l Office (Nov. 1, 2013) (A.R. 5-55); E-mail from Linda Haley to Cosmo Buttarro, MassDEP Ne. Reg’l Office (Nov. 1, 2013) (A.R. 5-62); E-mail from William Dearstyne to Cosmo Buttarro, MassDEP Ne. Reg’l Office (Nov. 1, 2013) (A.R. 5-63).

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IV. OVERVIEW OF PSD LEGAL REQUIREMENTS AND ANALYSIS

The PSD (prevention of significant deterioration) provisions of the Clean Air Act (“CAA”) govern air pollution in areas where the air quality meets or is cleaner than the national ambient air quality standards (“NAAQS”),³ as well as in areas where EPA is unable to classify air quality. CAA §§ 160-69, 42 U.S.C. §§ 7470-79. Anyone who proposes to construct a new major stationary source in an area where air quality meets or exceeds the NAAQS or is unable to be classified must first obtain a preconstruction permit through the Agency’s PSD program. CAA § 165, 42 U.S.C. § 7475; 40 C.F.R. § 52.21. Petitioners challenge both the “best available control technology,” or “BACT,” analysis and the air quality analysis, two central features of the PSD preconstruction permit program.

V. ANALYSIS

A. MassDEP’s Best Available Control Technology (“BACT”) Analysis Was Sufficient

Footprint submitted with its permit application a BACT analysis for those pollutants the proposed Salem facility would emit above the applicable significant emission threshold.⁴ See Salem Harbor

³ Primary NAAQS are standards designed to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly, with an adequate margin of safety. See *In re AES Puerto Rico, LP*, 8 E.A.D. 324, 351 (EAB 1999), *aff’d sub nom. Sur Contra La Contaminacion v. EPA*, 202 F.3d 443 (1st Cir. 2000); see also CAA § 109(b)(1), 42 U.S.C. § 7409(b)(1). Permit issuers such as MassDEP must ensure that emissions from a proposed facility will not cause or contribute to an exceedance of the NAAQS. CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3); 40 C.F.R. § 52.21(k).

⁴ The PSD preconstruction permit regulations set forth “significant” emission rates for regulated pollutants. See 40 C.F.R. § 52.21(b)(23)(i). For each pollutant, if the proposed source’s modeled emissions exceed the significant emission rate, a permit applicant must meet emission limits that the permit issuer determines meet the “best
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Redevelopment Project Comprehensive Plan Approval Application 5-1 (Dec. 21, 2012) (A.R. 4-16) (“Application”). Petitioners challenge the BACT emission limits for three pollutants that MassDEP included in the Permit: particulate matter, nitrogen dioxide at startup and shutdown, and greenhouse gases. Petitioners also dispute MassDEP’s decision to remove BACT emission limits for volatile organic compounds (“VOCs”) from the draft permit. Finally, Petitioners claim that the Board should remand the Permit for additional public comment on MassDEP’s final BACT analysis.

A permit issuer’s decision to impose BACT emission limits constitutes a central feature of the PSD preconstruction permit program. Therefore, the Board first briefly explains the statutory and regulatory concepts that guide a BACT analysis. For the reasons set forth below, the Board denies each of Petitioners’ claims challenging MassDEP’s BACT analysis.

1. Statutory and Regulatory Requirements for a BACT Analysis

New major stationary sources must employ BACT to minimize emissions of regulated pollutants. CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2). The statute defines BACT as “an emission limitation based on the maximum degree of reduction” of each regulated pollutant from a major emitting facility such as the proposed Salem facility. CAA § 169(3), 42 U.S.C. § 7479(3); *accord* 40 C.F.R. § 52.21(b)(12) (similar regulatory definition). A permit issuer must conduct a BACT analysis on a case-by-case basis, account for energy, environmental, and economic impacts and other costs, and determine a limit that is “achievable” for the proposed facility through applying production processes and other techniques, including “clean fuel” or

⁴(...continued)

available control technology” standard. For the Salem facility, these pollutants included oxides of nitrogen, particulate matter, particulate matter less than 10 micrometers in diameter, particulate matter less than 2.5 micrometers in diameter, sulfuric acid mist, and greenhouse gases.

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“innovative fuel combustion techniques,” to control each regulated pollutant.⁵ CAA § 169(3), 42 U.S.C. § 7479(3); *accord* 40 C.F.R. § 52.21(b)(12).

In 1990, EPA issued a draft guide to enable permitting authorities to analyze PSD requirements (among others) in a consistent and systematic way. *See generally* Office of Air Quality Planning & Standards, U.S. EPA, *New Source Review Workshop Manual 1* (draft Oct. 1990) (“*NSR Manual*”).⁶ The NSR Manual sets forth the following “top-down” process for determining BACT for each particular regulated pollutant:

[T]he top-down process provides that all available control technologies be ranked in descending order of control effectiveness. The PSD applicant first examines the most stringent – or “top” – alternative. That alternative is established as BACT unless the applicant demonstrates, and the permitting authority in its informed judgment agrees, that technical considerations, or energy, environmental, or economic impacts justify

⁵ The Board explained in *In re Northern Michigan University* (“*NMU*”) that a permit issuer’s BACT analysis must take “a careful and detailed look, attentive to the technology or methods appropriate for the particular facility, [] to seek the result tailor-made for that facility and that pollutant.” 14 E.A.D. 283, 291 (EAB 2009) (citations and quotations omitted).

⁶ The NSR Manual is not a binding Agency regulation; thus, permit issuers need not strictly apply the methodology it describes, nor is it the required vehicle for making BACT determinations. *E.g.*, *NMU*, 14 E.A.D. at 291; *In re Prairie State Generating Co.*, 13 E.A.D. 1, 6 n.2 (EAB 2006), *aff’d sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007); *In re Knauf Fiberglass GmbH*, 8 E.A.D. 121, 129 n.13 (EAB 1999). Nonetheless, because the NSR Manual provides a framework that assures permit issuers adequately consider the statutory and regulatory criteria when they determine BACT emission limits, the NSR Manual has long guided state and federal permit issuers as well as PSD construction permit applicants. *E.g.*, *NMU*, 14 E.A.D. at 291-92; *In re Cardinal FG Co.*, 12 E.A.D. 153, 162 (EAB 2005).

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a conclusion that the most stringent technology is not
“achievable” in that case.

Id. at B.2. Permit issuers apply the top-down method on a case-by-case basis to each permit they evaluate. *See id.* at B.1.

The Board generally defers to a permit issuer’s technical expertise on matters that are fundamentally technical or scientific in nature, including a permit issuer’s decisions regarding BACT emission limits. *See, e.g., In re Russell City Energy Ctr., LLC*, PSD Appeal Nos. 10-01 through 10-05, slip op. at 15, 37-41, 88 (EAB Nov. 18, 2010), 15 E.A.D. ___, *aff’d sub nom. Chabot-Las Positas Cmty. Coll. Dist. v. EPA*, 482 F. App’x 219 (9th Cir. 2012). Nonetheless, the permit issuer must adequately explain and support in the administrative record the rationale for its conclusions. *Id.* at 15, 15 E.A.D. ___. As a whole, the record must demonstrate that the permit issuer “duly considered the issues raised in the comments” and ultimately adopted an approach that “is rational in light of all information in the record.” *In re Gov’t of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 342 (EAB 2002); *In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners, LP*, 7 E.A.D. 561, 568 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). Here, MassDEP did so.

2. *MassDEP Adequately Explained Its Particulate Matter
BACT Emission Limit*

In their petition for review, Petitioners characterize as “cavalier” MassDEP’s decision to adopt a less stringent emission limit for particulate matter⁷ than exists at “many [other] facilities,” including the

⁷ The BACT analysis conservatively assumed that all particulate matter emissions from the natural gas-fired combustion turbines were less than 2.5 micrometers in diameter. *See* MassDEP, Draft PSD Permit Fact Sheet 12 (Sept. 9, 2013) (A.R. 5-4) [hereinafter Draft PSD Fact Sheet]. The administrative record refers to particulate matter collectively as “PM/PM₁₀/PM_{2.5},” but for simplicity the Board will refer to particulate

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Pioneer Valley Energy Center (“Pioneer Valley”) in Massachusetts, which will operate a Mitsubishi turbine. Amended Petition for Review at 6 (Mar. 17, 2014) (“Petition”). They further allege that MassDEP’s particulate matter BACT analysis is “vague.” *Id.* at 8. Petitioners have not demonstrated either that MassDEP clearly erred when it determined the Salem facility’s BACT emission limit or that MassDEP failed to explain adequately why it chose the BACT limit.⁸

In the draft permit MassDEP proposed three BACT emission limits for particulate matter: 0.0067 pounds per million British thermal units (“lb/MMBtu”) at 100% combustion turbine load, 0.0071 lb/MMBtu at 75% load, and 0.0088 lb/MMBtu at the minimum emission compliance load.⁹ Draft PSD Fact Sheet at 12. Because particulate matter emissions result from incomplete combustion, the permitting authority sets the lowest, most stringent emission limit for the combustion turbine when it operates at 100%, whereas the highest

⁷(...continued)
matter.

⁸ Petitioners also claim that, in establishing the particulate matter BACT limit, MassDEP improperly relied on information it added to the administrative record after the public comment period closed. Petition at 7. The Board disagrees. In their comments below, Petitioners alleged that the BACT limit for particulate matter was not stringent enough. MassDEP appropriately responded to their comments by including additional information from Footprint in the administrative record that supported a lower emission limit. *See* Letter from Lauren Liss, counsel for Footprint, to James Belsky, MassDEP Ne. Reg’l Office (Nov. 1, 2013) (A.R. 5-56) (containing vendor information guaranteeing particulate matter emission limits 25 percent lower than previously proposed for the Salem facility). A permit issuer may add new material to the administrative record in response to public comments. *See* 40 C.F.R. § 124.17(a)(2), (b); *see also In re Dominion Energy Brayton Point, LLC*, 13 E.A.D. 407, 416 (EAB 2007).

⁹ At minimum emission compliance load, the turbines achieve and maintain a certain temperature at which the heat rate can sustain steady-state operations consistent with the Permit limit. *See* RTC att.1, at 51; *see also id.* att.1, at 66; Major Comprehensive Plan Application Additional Information at 3 (Sept. 4, 2013) (A.R. 4-51) (graph showing minimum emission compliance load as a function of ambient temperature). Above that temperature, emissions of particulate matter are reduced due to increased combustion rates. *See* RTC att.1, at 51; *see also id.* att.1, at 66.

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emission limit correlates with the minimum emission compliance load, in this case 46% load. *See* Draft PSD Fact Sheet at 12; Letter from Keith Kennedy, Tetra Tech, to James Belsky, MassDEP Ne. Reg'l Office 5 (Aug. 20, 2013) (A.R. 4-46) (confirming that a proposed emission limit of 0.0088 lb/MMBtu corresponds to 46% load).

MassDEP explained in both the revised BACT analysis and the response to comments document that Footprint's need to operate the Salem facility at varying loads led MassDEP to finalize the particulate matter BACT limit at 0.0071 lb/MMBtu as opposed to a lower limit such as Pioneer Valley's 0.004 lb/MMBtu.¹⁰ *See* RTC at 11-12; *id.* att.1, at 47. At full load unfired conditions, Footprint's modeled particulate matter emission rates range from 0.0038 to 0.0047 lb/MMBtu, which "compare favorably to many of the [particulate matter emission] rates for * * * Mitsubishi" turbines contained in the revised BACT analysis. *Id.* att.1, at 51. On the other hand, turbine operation at the minimum emission compliance load results in the highest modeled particulate matter emission rate of 0.0071 lb/MMBtu. *Id.* at 11. Footprint calculated particulate matter emission rates at different operating loads, including the minimum emission compliance load, because Footprint "has determined that the flexibility to operate at the [minimum emission compliance load] is important to the Project's mission of providing a flexible and quick response to the future system power needs." *Id.* att.1, at 51; *see also id.* at 11 (emphasizing that Footprint expects to operate the turbines at different operational configurations throughout the calendar year with the attendant seasonal fluctuations in ambient temperature, pressures, and humidity). Accordingly, MassDEP concluded, as have other permitting authorities, that the Salem facility's need to operate at varying loads was a critical consideration in choosing a BACT limit somewhat lower than optimal efficiency to ensure continued compliance. *Id.* at 11; *id.* att.1, at 51; *see also In re Pio Pico*

¹⁰ MassDEP appended the same revised BACT analysis to both the response to comments document and the Final PSD Fact Sheet. To avoid confusion, the Board will cite to the BACT analysis in attachment 1 to the response to comments document going forward.

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Energy Ctr., PSD Appeal Nos. 12-04 through 12-06, slip op. at 82 (Aug. 2, 2013), 16 E.A.D. ____ (greenhouse gas BACT limit set at 50% load for a simple cycle peaking facility that anticipated operation at various loads as part of the facility's inherent design and purpose).

Petitioners never dispute MassDEP's underlying reasons for setting the Salem facility's BACT emission limit for particulate matter at a higher level than the Pioneer Valley facility. Instead, Petitioners rely on the mere fact that the Pioneer Valley permit contains a lower particulate matter limit and a comment from Mitsubishi that the Pioneer Valley limit is technically achievable. MassDEP adequately explained, however, that although under certain operating scenarios the Salem facility will achieve the 0.004 lb/MMBtu limit Mitsubishi guarantees for its turbines, the need to operate under a wide variety of operating conditions precludes setting the particulate matter BACT limit any lower. RTC at 11; *id.* att.1, at 51; *see also Pio Pico*, slip op. at 82, 16 E.A.D. at ____; *In re Masonite Corp.*, 5 E.A.D. 551, 560 (EAB 1994) (“[S]etting the emissions limitation to reflect the highest control efficiency would make violations of the permit unavoidable.”).

Accordingly, Petitioners' challenge to MassDEP's BACT emission limit for particulate matter falls well short of the high threshold Petitioners must meet to demonstrate that the permit issuer clearly erred in making this technical determination. *See, e.g., Prairie State*, 13 E.A.D. at 72 (concluding that petitioners failed to provide “a sufficiently compelling rebuttal” of permit issuer's finding to overcome the deference the Board normally gives to permitting authorities on technical matters); *In re Dominion Energy Brayton Point, LLC* (“*Dominion P*”), 12 E.A.D. 490, 510, 560-62, 645-47, 668, 670-74 (EAB 2006) (same).

3. *MassDEP Adequately Explained Its Greenhouse Gas BACT
Emission Limit*

Combustion turbines emit an aggregate of three of the six pollutants collectively known as greenhouse gases: carbon dioxide,

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methane, and nitrous oxide.¹¹ Draft PSD Fact Sheet at 13; *see also* 40 C.F.R. § 52.21(b)(49)(i) (listing all six greenhouse gases). Greenhouse gas emissions from electricity production are primarily a function of the amount of fuel burned. Power plants minimize greenhouse gas emissions when they produce electricity at maximum efficiency, or in other words, when maximum electricity is produced for a given heat rate. Application at 5-7. Given the relationship between electrical production and greenhouse gas emissions, the Permit expresses greenhouse gas limits in pounds of carbon dioxide equivalent (“CO_{2e}”) per net megawatt-hour of power delivered to the grid (“lb CO_{2e}/MWh_{grid}”). *See* Permit at 5.

Petitioners allege that MassDEP erred in setting the greenhouse gas BACT limit for the Salem facility, citing the “significantly more stringent” limit recently established for the Brockton Power Company facility located in Massachusetts. Petition at 9 & n.9 (stating that Brockton facility limit results in “a superior efficiency of 4.6%” as compared to the Salem facility). In the draft and final fact sheets, MassDEP explained that the less stringent BACT limit at the Salem facility was necessary because Salem will use dry cooling, whereas Brockton will use wet cooling, and because the Brockton permit did not account for equipment degradation over the life of the facility. *See* Final PSD Fact Sheet at 14-15; Draft PSD Fact Sheet at 14-15. On both accounts, the Board finds that MassDEP adequately justified and supported in the record the Salem facility’s greenhouse gas BACT limit.

Petitioners miss the key distinction MassDEP provided between wet cooling technology in general, and the kind of wet cooling

¹¹ Each pollutant has a different global warming potential, which is calculated using carbon dioxide as a reference gas to determine the impact of the release of one kilogram of, in this instance, methane or nitrous oxide. *See* 40 C.F.R. § 98.6; *id.* pt. 98, tbl.A-1 (listing global warming potentials). Each pollutant is multiplied by its global warming potential to determine the amount of carbon dioxide equivalent (“CO_{2e}”). *See* 40 C.F.R. § 52.21(b)(49)(ii). In this instance, carbon dioxide will account for 99.9 percent of CO_{2e} emissions at the Salem facility, even after accounting for the warming potential of methane and nitrous oxide. *See* Final PSD Fact Sheet at 13.

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technology Footprint would need to utilize at the Salem facility. Although MassDEP acknowledged that wet cooling has some efficiency advantages over dry cooling,¹² MassDEP concluded that, for the Salem facility, other factors would outweigh the efficiency advantages. For example, MassDEP noted that use of wet cooling at the Salem facility would lead to “a very visible and persistent [fog] plume for many hours of the year” due to the facility’s New England location, where typical coastal weather conditions prevail. RTC att.1, at 61; Application at 5-10 to 5-11. To utilize wet cooling while also preventing fog plumes, Footprint would need to use a “plume-abated” wet mechanical draft cooling tower that would “double the cost of the cooling tower and increase the total fan power consumption and pumping head on the system.” RTC att.1, at 61; Application at 5-11. In other words, the increased energy required to operate a “plume-abated” wet mechanical draft cooling tower versus a wet cooling tower without the “plume-abatement” technology would increase the Salem facility’s parasitic losses, or “internal energy sinks,” which are deleterious to a facility’s net heat rate.¹³ Application at 5-7; RTC att.1, at 61. Thus, even though a typical dry cooling system would use more energy than a typical wet cooling system, that would not be true in this instance. MassDEP thoroughly and clearly analyzed the cooling technology, and provided the facility-specific, case-by-case analysis required of a BACT analysis.

Similarly, MassDEP properly accounted for the degradation of the facility over time as a source of increased heat rate, and decreased

¹² Dry cooling systems expend approximately one to five percent more energy than wet cooling systems, depending on ambient temperatures, because wet cooling systems produce colder water than dry cooling systems. Application at 5-10 to 5-11; RTC att.1, at 60. Dry cooling systems are less efficient during the summer when ambient temperatures are higher. See Draft Fact Sheet at 15.

¹³ A turbine with a higher net heat rate will be less efficient and consume more fuel to generate the same amount of electricity as compared to more efficient turbines, which will in turn lead to increased greenhouse gas emissions. See Application at 5-7.

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efficiency, in setting the greenhouse gas BACT limit. RTC att.1, at 65; Final PSD Fact Sheet at 14-15; Draft PSD Fact Sheet at 14-15. Petitioners offer only speculative statements as to why MassDEP erred in considering facility degradation when setting a greenhouse gas BACT limit. When setting a greenhouse gas BACT limit, a permit issuer “can consider a range of factors, including the ability of the control option to consistently achieve a certain emissions rate,” which might affect the range of performance over time of a particular control technology. Air Quality Policy Div., Office of Air Quality Planning & Standards, U.S. EPA, *PSD and Title V Permitting Guidance for Greenhouse Gases* 44 (Mar. 2011). In this instance, MassDEP appropriately accounted for the degradation of turbine equipment over time that can lead to efficiency losses that directly impact greenhouse gas emissions. *See Pio Pico*, slip op. at 87, 16 E.A.D. at ___ (upholding permit issuer’s use of a 3% safety factor in the PSD permit’s greenhouse gas BACT limit to account for, among other things, “unrecoverable losses in efficiency over the life of the plant”).

Petitioners’ remaining claim that MassDEP clearly erred when it “reject[ed] a comparison” between the Salem facility and two others, the Brunswick County and Oregon Clean Energy facilities, falls short. MassDEP specifically addressed each facility in the updated BACT analysis and explained why it appropriately determined the BACT limit for the Salem facility. *See* RTC att.1, at 62 (noting that Footprint’s greenhouse gas BACT limit “accounts for all operation on an annual basis including starts, stops, and part load in addition to duct firing”). Petitioners allege that these explanations are “shrugs and suppositions,” but, without more, Petitioners cannot prevail. The Board defers to a permit issuer’s technical expertise, and Petitioners must provide more than a difference of opinion to overcome their burden of demonstrating that review is warranted. *See, e.g., Dominion I*, 12 E.A.D. at 510; *NE Hub Partners*, 7 E.A.D. at 567-68.

Finally, Petitioners assert that MassDEP clearly erred when it did not consider comparable power plants listed in the Agency’s Clean Air Markets database that “appear to have significantly lower greenhouse

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gas emissions.” Petition at 11. At best, Petitioners cite incomplete information from a comment letter the Sierra Club submitted in March 2014 to the Iowa Department of Natural Resources regarding a different permit. *See* Petition att.10, at 2-5. Petitioners allege MassDEP clearly erred but do not offer any further information to substantiate their claims. Without more, we reject Petitioners’ challenge. *See Dominion I*, 12 E.A.D. at 510.

4. *MassDEP Adequately Explained Its BACT Limit for Startup and Shutdown Emissions of Nitrogen Oxides*

Combustion turbines produce increased emissions of nitrogen oxides¹⁴ (“NO_x”) during startup and shutdown because of non-steady state operations. Draft PSD Fact Sheet at 15. To control NO_x emissions, Footprint will, among other things, operate a selective catalytic reduction (“SCR”) system that reduces NO_x to nitrogen and water in the presence of ammonia. *Id.* at 11. During startup and shutdown, the turbines’ lower operating temperatures preclude using the SCR system. The technology selected to control NO_x emissions during startup and shutdown includes using good operating practices, i.e., following manufacturer’s recommendations during startup, as well as limiting startup time. Final PSD Fact Sheet at 15; Draft PSD Fact Sheet at 15.

Petitioners allege that MassDEP should have compared the modeled NO_x startup and shutdown emissions for the GE turbine that Footprint selected with emission limits from two facilities, Brockton and El Segundo, which each utilize Siemens turbines and have lower NO_x startup limits in their respective permits. Petition at 11-12. The Board finds Petitioners’ argument inapposite. While Petitioners concede that MassDEP conducted a comprehensive BACT analysis that encompassed twenty-eight large gas-fired combined cycle generating plants permitted

¹⁴Nitrogen dioxides are generally identified in terms of all nitrogen oxides. *See* Prevention of Significant Deterioration for Nitrogen Oxides, 53 Fed. Reg. 40,656 (Oct. 17, 1988); *see also In re Amerada Hess Corp.*, 12 E.A.D. 1, 3 n.3 (EAB 2005) (citing *Ala. Dep’t of Envtl. Conservation v. EPA*, 540 U.S. 461, 470 n.1 (2004)).

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over the last five years, they argue that MassDEP must nonetheless further justify its BACT decision in light of the lower emission limits alleged for the Brockton and El Segundo facilities. *See* RTC att.1, at 67 & tbl.1-5. As the Board explains in more detail below, Petitioners have not met their burden to demonstrate that MassDEP clearly erred when it set the Salem facility's startup and shutdown emission limits for NO_x.

Although Footprint's initial application included modeled emissions for both the Siemens¹⁵ and GE turbines, Footprint made clear in June 2013 that it had selected the GE turbine for the Salem facility based on facility-specific needs and parameters. *See* Second Supplement to Major Comprehensive Plan Application 1-2 (June 10, 2013) (A.R. 4-31). Footprint selected the "F" class, quick-start GE turbine because it was "state-of-the-art" and "will be more efficient and will have fewer emissions" than other "peaker" units in the area.¹⁶ *See* Major Comprehensive Plan Application Additional Information 3 (Aug. 6, 2013) ("August 2013 Supp.") (A.R. 4-33) (noting that the GE turbine's quick-start technology will support the development of wind power generation in the region); *see also* RTC at 14.

The Salem facility's NO_x startup limit is based on a cold startup to ensure that it can consistently achieve the BACT emission limit set forth in the Permit. *See* Final PSD Fact Sheet at 16; RTC at 13. The Salem facility will have no more than thirteen cold startups a year; thus, the majority of startups will be warm and hot starts, which will be shorter in duration and have much lower emission rates. RTC at 13-14. Petitioners never address either the NO_x startup and shutdown BACT

¹⁵ The Siemens turbine that Footprint considered was the FlexPlant30 SCC6-5000F(5), which is also a quick-start, combined cycle turbine system. Application at 2-4. This turbine model is different from each of the Siemens turbines used at the Brockton and El Segundo facilities, respectively.

¹⁶ Footprint explained in its application that, in contrast to a larger, slightly more efficient "G" class turbine, the smaller "F" class turbine would provide the Salem facility with greater operational flexibility to respond to the needs of the grid, and in turn, result in lower emissions. Application at 5-10.

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emission limits that MassDEP established or MassDEP's reasoning that the BACT limit must be achievable at all times during cold, warm, and hot starts. *See, e.g., In re La Paloma Energy Ctr.*, PSD Appeal No. 13-10, slip op. at 19 (Mar. 14, 2014), 16 E.A.D. ___ (permitting authorities need not impose the highest possible level of control efficiency but may take case-specific circumstances into consideration in determining what level of control is achievable for a given source).

MassDEP's updated BACT analysis demonstrated that the Salem facility has the most stringent NO_x startup and shutdown BACT emission limit with the exception of two projects in California and the Brockton facility.¹⁷ RTC att.1, at 67. MassDEP could not verify the much lower limit for the Brockton facility, however, which is not yet in operation. *See* RTC at 13; Final PSD Fact Sheet at 14-15; August 2013 Supp. at 2 & att.2. The Brockton facility will utilize a Siemens SGT6-PAC-5000F turbine and was approved for a NO_x startup limit of 31.6 pounds per hour ("lb/hr"), or 14.9 pounds per event ("lbs/event") over 0.47 hours, whereas the Salem facility was approved for up to 93.5 lbs/hr of NO_x emissions during startup, or 89 lbs/event over 0.75 hours.¹⁸ *See* RTC att.1, at 67. The record clearly states that while Footprint considered a Siemens turbine similar to the one permitted for the Brockton facility, more recent data for the "quick start" Siemens turbine that Footprint considered resulted in a NO_x startup limit of 83 lbs/event over

¹⁷ The two California facilities, Victorville and Palmdale, each have NO_x startup and shutdown BACT limits of 40 pounds of NO_x emissions per event ("lb/event") for both warm and hot starts. RTC att.1, at 67. The average of the Salem facility's warm and hot start limits, 54 lbs/event and 28 lbs/event, comes out to 41 lbs/event, almost identical to the two California plants. *Id.*; *see also* RTC at 14 & tbl.A. As noted above, the Salem facility's overall NO_x startup limit is higher because it accounts for increased emissions during cold startups.

¹⁸ During shutdown, the Brockton facility was permitted for 29.8 lbs/hr or 11.9 lbs/event over 0.40 hours, whereas the Salem facility was permitted for 19.4 lbs/hr, or 10 lbs/event over 27 minutes. *See* RTC att.1, at 67; Final PSD Fact Sheet at 15.

0.75 hours.¹⁹ See RTC at 13; *id.* att.1, at 67; August 2013 Supp. at 2 & att.2; see also Response from Footprint Power Salem Harbor Development LP to the Amended Petition for Review 23 (Apr. 7, 2014) (“Footprint Response”). Footprint noted in supplemental application materials that, because the GE turbine has lower emissions for warm and hot startups compared to the Siemens 5000F, there was no advantage to selecting a Siemens turbine over a GE turbine for NO_x startup and shutdown limits. August 2013 Supp. at 2 & att.2; see also Major Comprehensive Plan Application Responses to Comments on Draft PSD Permit and Proposed Air Quality Plan Approval 3-4 (Dec. 11, 2013) (“December 2013 Supp.”) (A.R. 7-1); RTC att.1, at 67. In addition, based on a review of the information Footprint submitted with its application, MassDEP was unable to verify that the Siemens SGT6-PAC-5000F turbine could achieve the startup limit specified in the Brockton permit under any startup conditions. RTC at 13.

Similarly, the 12-minute startup limit attributed to the El Segundo facility that Petitioners cited in their comments on the draft permit and in their petition for review is not achievable in practice. See Petitioners’ Comments at 5; Petition at 11-12; see also December 2013 Supp. at 4; Footprint Response at 23. Although El Segundo’s original Title V permit, issued in 2008, contained the 12-minute startup and corresponding lower NO_x emission limit, the facility’s current Title V operating permit, issued in October 2013, allows for up to a 1-hour startup with a NO_x emission limit of 112 lbs. See December 2013 Supp. at 4; Footprint Response at 23; Footprint Response Ex. J, § H at 15 (copy of El Segundo’s October 2013 Title V permit).

Finally, the Permit specifically allows for provisional startup and shutdown limits during the Salem facility’s first year of commercial operation, after which MassDEP may adjust the startup and shutdown

¹⁹ For a combined cold startup and shutdown, the GE turbine would emit 99 lbs/event (89 lbs for startup, 10 lbs for shutdown) whereas the Siemens turbine would emit 103 lbs/event (83 lbs for startup, 20 lbs for shutdown). August 2013 Supp. at 2 & att.2.

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BACT limits for NO_x based on stack test data and continuous emissions monitoring data. *See* Permit at 12, tbl.3; *see also* August 2013 Supp. at 1; RTC att.1, at 71. This provision ensures that the Salem facility will achieve the lowest practical emissions achievable based on actual operating emissions from the first year. *See* RTC att.1, at 71. In this instance, Footprint explained why the GE turbine is the most suitable equipment for the Salem facility, and MassDEP's updated BACT analysis demonstrated that the Salem facility's NO_x emission limit for startup and shutdown is one of the most stringent for large, combined cycle turbine power generation. Petitioners have not demonstrated that MassDEP's BACT determination for NO_x emissions during startup and shutdown was clearly erroneous.

For the reasons stated above, the Board denies review of MassDEP's BACT analyses for particulate matter, greenhouse gases, and startup and shutdown emissions for oxides of nitrogen.

5. MassDEP Did Not Err in Removing the VOCs Emission Limits

MassDEP included emission limits for volatile organic compounds ("VOCs") in the draft permit.²⁰ But, after reviewing public comments, MassDEP decided they were unnecessary and did not include them in the final permit.²¹ MassDEP reasoned that PSD BACT

²⁰ MassDEP, Draft Prevention of Significant Deterioration Permit, Application No. NE-12-022 ("Draft Permit"), at 6 (Sept. 9, 2013) (A.R. 5-3) (specifying emissions limits for VOCs (no duct firing) at 0.0013 lb/MMBtu and VOCs (duct firing) at 0.0022 lb/MMBtu).

²¹ Although MassDEP determined that the PSD requirements did not mandate including VOCs limits in the final PSD permit, MassDEP imposed identical VOCs limits on the Salem facility in the Comprehensive Plan Approval pursuant to BACT requirements under Massachusetts regulatory requirements. *Compare* MassDEP, Salem: Air Quality Plan Approval at 25 (Jan. 30, 2014) (A.R. 8-5), *with* Draft Permit at 6; *see* MassDEP, Salem: Air Quality Plan Approval at 6 (Jan. 30, 2014) ("[T]he VOC emissions from the Facility are subject to, and must comply with, Best Available Control (continued...)

requirements did not apply to the potential VOCs emissions from the Salem facility because potential VOCs emissions do not exceed 40 tons per year (“tpy”). RTC at 8. According to Petitioners, however, the “plain language” of the applicable CAA regulations require that, if “the sum total” of emissions of all ozone precursors (including VOCs) from a source exceed 40 tpy, then the permit issuer must apply BACT to all ozone precursors whether or not they individually will exceed 40 tpy.²² Petition at 20. The parties do not dispute that the Salem project has the potential to emit two ozone precursors – nitrogen oxides and VOCs – at an aggregate level that well exceeds 40 tpy (nitrogen oxides at 144 tpy and VOCs at 28 tpy). Hence, Petitioners claim that MassDEP clearly erred in removing the VOCs emission limits from the permit as a PSD requirement.

Several interconnected provisions in EPA’s regulations address what pollutants BACT requirements cover. Generally, a new major stationary source must “apply best available control technology for each regulated NSR pollutant that it would have the potential to emit in significant amounts.” 40 C.F.R. § 52.21(j)(2); *see also* CAA § 165(a)(4),

²¹(...continued)

Technology (BACT) pursuant to 310 CMR [Code of Massachusetts Regulations] 7.02.”).

²²MassDEP and Footprint argue that Petitioners waived this issue because they failed to raise it in their comments on the draft permit. To preserve an issue for Board review, a petitioner must show either that the issue was raised during the public comment period or public hearing on the draft permit or that the issues or arguments were not reasonably ascertainable at that time. 40 C.F.R. §§ 124.13, .19(a)(4)(ii); *see, e.g., In re City of Attleboro*, 14 E.A.D. 398, 405, 431, 441-42 (EAB 2009). MassDEP and Footprint suggest that Petitioners could have gleaned MassDEP’s rationale for not including the VOCs emission limits in the final Permit from a table in the Fact Sheet on the draft permit. The table showed that VOCs emissions would fall below the 40 tpy threshold for applying PSD review. Draft PSD Fact Sheet at 7. MassDEP and Footprint note that no one objected to this conclusion during the public comment period. The VOCs emission limits – the permit provision that Petitioners are insisting be reinstated – clearly appeared in the draft permit described by the Fact Sheet, however. Draft Permit at 6. Given these conflicting signals in MassDEP’s draft permit and Fact Sheet, it was not reasonably ascertainable that MassDEP would remove the VOCs emission limits from the final Permit. Thus, this issue is properly before the Board.

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42 U.S.C. § 7475(a)(4). Two critical defined phrases in this requirement are “regulated NSR pollutant” and “potential to emit in significant amounts.” “Regulated NSR pollutants” include pollutants “for which a national ambient air quality standard has been promulgated” and designated precursors of such pollutants. 40 C.F.R. § 52.21(b)(50)(i). Relevant to VOCs, EPA has promulgated a national ambient air quality standard for ozone, *id.* § 50.15, and designated VOCs and nitrogen oxides as ozone precursors in all attainment and unclassifiable areas, *id.* § 52.21(b)(50)(i)(a). Therefore, ozone, VOCs, and nitrogen oxides all qualify as regulated NSR pollutants. The “potential to emit significant amounts” is defined for “ozone” as an emission rate that would equal or exceed “40 tpy of volatile organic compounds or nitrogen oxides.” *Id.* § 52.21(b)(23)(i). EPA established this threshold level of 40 tpy under its inherent authority to exempt from regulation substances posing no greater than “de minimis” or trivial risks. Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans, 45 Fed. Reg. 52,676, 52,722-23 (Aug. 7, 1980) (citing *Alabama Power Co. v. Costle*, 636 F.2d 323 (D.C. Cir. 1979)).

The Board disagrees with Petitioners’ claim that this complex set of interwoven provisions plainly commands that the permit issuer apply BACT to potential VOCs emissions from the Salem project. Citing no authority, Petitioners contend that the phrase “40 tpy of volatile organic compounds or nitrogen oxide” should be read as 40 tpy of “the sum total” of “all ozone precursors (including VOCs).” Petition at 20. Having made this leap, Petitioners then claim – again without explanation – that, if aggregate ozone precursor emissions potentially exceed 40 tpy, BACT must be applied to all “ozone precursors of *whatever* type.” *Id.* (emphasis in original). This argument fails at its inception. Petitioners offer no reason why the conjunction “or” in the phrase “40 tpy of volatile organic compounds or nitrogen oxides” requires aggregating VOCs and nitrogen oxides. In common usage, the

conjunction “or” functions to introduce alternatives.²³ Thus, the term “or” strikes us as an unlikely choice by which to impose an aggregation requirement. Notably, in the provision establishing “significant” emission amounts for municipal waste combustor gases, EPA used much more precise language to communicate its intended substances to be combined to determine the significance of emission levels. There, EPA specified:

Municipal waste combustor acid gases (*measured as sulfur dioxide and hydrogen chloride*): 36 megagrams per year (40 tons per year)

40 C.F.R. § 52.21(b)(23)(i) (emphases added). This provision clearly directs permit issuers to aggregate the substances sulfur dioxide and hydrogen chloride in determining whether municipal waste combustor acid gases equaled or exceeded 36 megagrams per year.

A more plausible interpretation of BACT applicability to ozone precursors has been offered by EPA in a supplemental brief filed at the Board’s request. EPA first observes that 40 C.F.R. § 52.21(j)(2) specifically requires BACT for “each” regulated NSR pollutant that is potentially emitted in significant amounts and that VOCs and nitrogen oxides are each designated as regulated NSR pollutants. EPA Office of Air and Radiation’s Supplemental Brief in Response to Board’s Order of July 14, 2014, (“EPA Brief”) at 5. EPA then argues that it interprets the command in section 52.21(j) to apply BACT to “each” regulated NSR pollutant “to mean that each precursor is individually addressed as a separate pollutant for purposes of determining BACT applicability.” *Id.* Additionally, EPA contends that designating VOCs and nitrogen oxides as ozone precursors and regulated NSR pollutants supports reading the significance definition for ozone to create two alternative tests for significance – either 40 tpy of VOCs or 40 tpy of nitrogen oxides – rather than to require aggregation of VOCs and nitrogen oxides.

²³ See Webster’s Third New International Dictionary 1585 (1993) (defining “or” as “a function word to indicate an alternative between different or unlike things”).

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Id. at 6. This interpretation, EPA explains, is further supported by the plain language of the significance definition, which “uses the term ‘or’ and not ‘and.’” *Id.* The Board finds this interpretation to be more faithful to the underlying regulatory language than Petitioner’s. It also gives full recognition to the “de minimis” nature of the 40 tpy threshold by not compelling EPA regulation of pollutant levels already determined to be trivial.²⁴

In responding to EPA, Petitioners assert that the question is not whether the significance level for ozone requires aggregating VOCs and nitrogen oxides but which ozone precursors should be subjected to BACT once it is clear that only one precursor exceeds the significance level. Petitioners’ Supplemental Brief in Response to Board’s Order of July 14, at 3. Petitioners claim that in these latter circumstances, it is “consistent with [section 52.21(b)(23)(i)’s] plain language” and with “common sense” to construe the regulation as requiring all precursors be subject to BACT (even one that is below the 40 tpy threshold). *Id.* at 4. Petitioners claim their interpretation to be commonsensical because ozone is produced from the combination of nitrogen oxides and VOCs. *Id.*

For several reasons, Petitioners’ switch in focus in their response weakens their earlier argument without providing a convincing alternate basis. First, by now contending only that their argument is “consistent with” the plain language of section 52.21(b)(23)(i), Petitioners all but concede that section 52.21(b)(23)(i) does not legally compel the result they seek. The Board agrees. The regulation does not expressly speak to precisely how BACT is to be applied to ozone when the significance threshold for ozone is exceeded by only one of the ozone precursors. Second, the Board rejects Petitioners’ new assertion that interpreting whether the ozone significance test requires aggregation of VOCs and nitrogen oxides is irrelevant to how to apply BACT requirements to

²⁴ EPA points out that multiple federal and state permitting authorities have followed its interpretation of when BACT must be applied to VOCs and nitrogen oxides. EPA Brief at 9-10.

ozone when only one of the two named precursors exceeds 40 tpy. To the contrary, the Board finds that EPA's decision in its regulation to evaluate ozone precursors separately for the significance test is highly relevant to how EPA may have envisioned the application of BACT. Finally, Petitioners have neither provided authority nor persuasive reasons for their appeal to common sense. Specifically, Petitioners fail to take into account that section 52.21(b)(23)(i)'s significance standards were based on the de minimis theory. 45 Fed. Reg. at 52,722-23. The mere fact that nitrogen oxides and VOCs are necessary ingredients in ozone cannot explain why a permit issuer should be concerned by the combination of a significant amount of nitrogen oxides and a trivial amount of VOCs.

Accordingly, the Board concludes that MassDEP did not clearly err in removing the PSD-based emission limits for VOCs from the Permit.

6. *Reopening Public Comment Period on the "New" BACT Analysis Is Not Warranted*

Petitioners argue that even if the Board does not remand the permit for a new BACT analysis, it should remand the permit to allow public comment on the final, revised BACT analysis included in the Response to Comments document. Petition at 12. According to Petitioners, because of the substantial "additions" to the final BACT analysis, MassDEP should have provided an opportunity for additional public comment. *Id.* at 13. The Board disagrees.

A decision whether to reopen the public comment period on a permit is "largely discretionary" with the permit issuer. *Dominion I*, 12 E.A.D. at 695. A permit issuer may reopen public comment "[i]f any data[,] information[,] or arguments submitted during the public comment period * * * appear to raise substantial new questions concerning a permit." 40 C.F.R. § 124.14(b). At the same time, a permit issuer is not required to reopen the public comment period simply because it receives new information or revises its analysis or decision in response to public

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comments. *In re City of Palmdale*, PSD Appeal No. 11-07, slip op. at 22 (EAB Sept. 17, 2012), 15 E.A.D. __; *Dominion I*, 12 E.A.D. at 695. To the contrary, EPA's permit regulations require a permit issuer to "respond to all significant comments" and authorize the permit issuer to rely on "new materials" in documenting a response to "new points * * * raised or new materials supplied during the public comment period." 40 C.F.R. § 124.17(a)(2), (b). Moreover, the appellate review process before the Board can provide parties with an opportunity to contest new materials relied upon or a revised decision in response to comments. *City of Attleboro*, 14 E.A.D. at 463; *In re Dominion Energy Brayton Point, LLC*, ("Dominion IP"), 13 E.A.D. 407, 416 (EAB 2007).

Previous Board decisions discussing whether the permit issuer erred in not reopening the comment period have focused on four factors: (1) whether there has been a change in a permit condition; (2) whether new material or analysis has raised substantial new questions; (3) whether the permit issuer adequately explained any changes made and the relevance of new information included in the record; and (4) whether there would be a significant impact from the additional delay resulting from a reopening of the comment period. *See City of Palmdale*, slip op. at 23, 15 E.A.D. at __; *see also Dominion II*, 13 E.A.D. at 416 n.10. In evaluating the first two factors, the Board has examined whether the new permit condition was added or the material developed in response to public comments. *City of Palmdale*, slip op. at 22, 15 E.A.D. at __; *Dominion II*, 13 E.A.D. at 416 n.10. As the discussion below indicates, none of these factors support reopening the comment period on the revised BACT analysis.

First, MassDEP's revised BACT analysis did not result in any permit changes of significance to Petitioner. As the Petitioner admits, "the new [BACT] analysis still produced emissions limits that were essentially identical to the prior analysis."²⁵ Petition at 3.

²⁵ In fact, Footprint argues that the revised PSD analysis led to "significant reductions to air pollutant emissions limits proposed in the Draft PSD permit." Footprint
(continued...)

Second, MassDEP did not raise a substantial new question by expanding and revising its BACT analysis in response to comments. The dispute here centers on how the BACT analysis evaluated what emission levels could be achieved by control technology in permitted facilities similar to the proposed Salem plant. Petitioners claim that the draft BACT analysis relied upon “an anecdotal survey of other facilities * * * and did not provide a comprehensive list of emissions limits at the many similar facilities listed in the EPA BACT database.” Petition at 2. In response to comments, MassDEP expanded the number of facilities it considered in the final BACT analysis. *See* RTC at 8-10, 48-50, 54-55, 63-64, 68-70, 72-73. Petitioners argue that this change to the BACT analysis was “clearly substantial” because it identified “so many lower emission limits set by or on behalf of EPA.” Petition at 13. The issue, however, is not whether the changes MassDEP made in the BACT analysis are “clearly substantial,” but whether the changes raise substantial *new* questions. Petitioners have not identified a new question but rather a question – what emission reductions could be achieved by available control technology – that was already a focus of the draft BACT analysis. Draft PSD Fact Sheet at 9-16. In the final BACT analysis, MassDEP responded to comments by expanding the number of permitted facilities it considered and revising its analysis of what emission reductions could be achieved by available control technology. But expanding and revising a pre-existing and clearly defined issue in response to comments does not convert that issue into a substantial *new* question. *See City of Palmdale*, slip op. at 24, 15 E.A.D. at __ (refining the Agency’s rationale for excluding a control technology from BACT consideration, “rather than raising substantial new issues, simply responded to comments on an issue that already had been part of the permit proceedings”).

²⁵(...continued)

Response at 27. As Footprint explained, it “was able to work with the proposed turbine vendor to clarify its operating assumptions and to obtain important guarantees of lower emissions rates.” *Id.* Clearly, Petitioners did not deem these changes to be significant and would have preferred much greater reductions.

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Third, as the Board's rulings on Petitioners' substantive BACT challenges in Parts V.A.2-.4 of this decision show, MassDEP's revised BACT analysis provides an adequate basis for Board review of MassDEP's decision. The Board rejects Petitioners' claim that "any meaningful appellate review of MassDEP's decisions is essentially impossible, because so many of the judgments it belatedly adopted are * * * vague and difficult to understand." Petition at 13. As we explained in responding to Petitioners' BACT challenges, Petitioners' attacks on MassDEP's BACT explanations failed, in large part, because Petitioners did not address the reasons MassDEP gave for its decisions. Thus, this is not a case where a permit issuer failed to provide an adequate rationale that made it difficult for a petitioner to properly frame a challenge for Board review. *See In re Indeck-Elwood, LLC*, 13 E.A.D. 126, 147-48 (EAB 2006) (remanding a permit for additional public comment because permit issuer failed to provide a "meaningful analysis" explaining a change in the permit).

Finally, the Board concludes that remanding the permit to reopen the comment period would cause a significant delay. We generally consider PSD permitting to be a time-sensitive proceeding. *City of Palmdale*, slip op. at 17 n.5, 15 E.A.D. at __. Additionally, for this specific power plant, the Massachusetts Department of Public Utilities has found that "there is a need for additional [electricity generating] capacity resources in [Northeastern Massachusetts]/Boston by the 2016/2017 capacity year."²⁶

In similar circumstances, the Board has repeatedly denied claims that the permitting authority erred in not reopening the public comment period. *See, e.g., City of Palmdale*, slip op. at 20-24, 15 E.A.D. at __

²⁶ Mass. Dep't of Pub. Utils., D.P.U. 12-77, *Investigation by the Department of Public Utilities on its own motion into the need for additional capacity in NEMA/Boston within the next ten years, pursuant to Chapter 209, Section 40 of the Acts of 2012 "An Act Relative to Competitively Priced Electricity in the Commonwealth" and pursuant to G.L.c. 164 § 76*, at 17 (Mar. 13, 2013), available at <http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=12-77%2f12-77-Order-1938.pdf>.

(expanded discussion of economic feasibility to justify excluding a control technology did not require the reopening of the public comment period where expansion responded to a public comment and permit issuer did not change the permit); *In re Metcalf Energy Ctr.*, PSD Appeal Nos. 01-07 & 01-08, at 27-30 (EAB Aug. 10, 2001), (Order Denying Review) (including top-down BACT analysis and applicant's supplemental BACT analysis in the record after the close of the comment period did not require the permit issuer to reopen the public comment period where new analysis responded to comments), *aff'd sub. nom Santa Teresa Citizen Action Grp. v. EPA*, 51 F. App'x 702 (9th Cir. 2002).²⁷ Accordingly, as the Board concluded in *Metcalf Energy Center*, "[t]he Petitioners' recourse in this situation is an appeal to the Board, not a reopening of the public comment period, as they have requested." *Metcalf* at 30.

B. MassDEP's Air Quality Analysis Was Sufficient

The Board next addresses Petitioners' two challenges to the air quality analysis for the Salem facility. Petitioners challenge both whether MassDEP lawfully conducted the air quality analysis and whether MassDEP relied upon adequate monitoring data.

An applicant for a PSD permit must conduct an ambient air quality and source impact analysis that evaluates, among other things,

²⁷ Petitioners argue that reopening the comment period is required based on the Board decisions in *Pio Pico*, *Indeck-Elwood*, and *Hawaii Electric Light Company*. See Petition at 13. But each of those cases involved markedly different circumstances. See *Pio Pico*, slip op. at 92-97, 16 E.A.D. at ___ (remanding permit where a condition in the final permit significantly changed and the permit issuer had not addressed all relevant data relating to the change); *Indeck-Elwood*, 13 E.A.D. at 147-48 (remanding permit to reopen the public comment period where the final permit contained a significant new permit term and the record contained no "meaningful analysis of, or sufficient justification for, the permit change"); *In re Hawaii Electric Light Co.*, 8 E.A.D. 66, 102-03 (EAB 1998) (remanding permit and requiring permit issuer to prepare an updated air quality impact report and to allow further public comment where permit issuer relied, on appeal, on data not in the record, and the permit issuer inadequate responded to comments).

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whether a proposed source will cause or contribute to a violation of the NAAQS. CAA § 165(a)(3), (e)(1), 42 U.S.C. § 7475(a)(3), (e)(1); 40 C.F.R. § 52.21(k). EPA guidance recommends that air quality analyses proceed in two stages. *NSR Manual* at C.24 - C.26. First, the applicant should conduct a “preliminary analysis” to determine whether the source’s potential emissions will be sufficiently low that the applicant need not conduct a more in-depth analysis to assess the NAAQS violation question. *Id.* at C.24. If this preliminary analysis does not rule out NAAQS violations, then the applicant should commence the second stage of the air quality analysis, called the “full” or “cumulative” impact analysis, which comprehensively examines the combined level of potential emissions from the new source and emissions from existing sources as well as monitored background pollutant levels.²⁸ *Id.* at C.25; Office of Air Quality Planning & Standards, U.S. EPA, *Guidance for PM_{2.5} Permit Modeling* 20 (May 20, 2014). Further, in conjunction with the air quality analysis, the applicant must also submit preconstruction “continuous air quality monitoring data” to document existing pollutant levels in the vicinity of the new source. 40 C.F.R. § 52.21(m)(1)(iv); *see also* CAA § 165(a)(7), (e)(2), 42 U.S.C. § 7475(a)(7), (e)(2).

Petitioners argue that MassDEP erred as a matter of law in the second stage of the Salem facility’s air quality analysis – the cumulative impact analysis – because it did not consider whether all of the proposed facility’s emissions, including “insignificant” emissions, may cause or contribute to a violation of the NAAQS.²⁹ Petition at 19. Petitioners also claim that MassDEP clearly erred by accepting and relying on existing air quality monitoring that allegedly did not represent ambient

²⁸ Where the Board refers only to background pollutant levels in this opinion, that term is meant to include all pollutants not emitted by the proposed source.

²⁹ As required by the CAA and EPA regulations, Footprint submitted an air quality analysis for the Salem facility to MassDEP. *See* Application at 5.0. MassDEP accepted and relied on that analysis in approving the permit for the facility. Final PSD Fact Sheet at VI. MassDEP also refined the analysis in responding to public comments. RTC at 4, 8-15. For the sake of convenience, this opinion refers to MassDEP alone as having responsibility for the analysis.

air quality at the Salem facility. We discuss these two issues separately below.

1. *Petitioners' Challenge to the Use of SILs in the Cumulative Impact Analysis Was Not Preserved for Board Review*

Petitioners claim that MassDEP illegally relied upon a regulatory tool known as significant ambient impact levels ("SILs") during the second, or cumulative impact, stage of the air quality analysis. According to Petitioners, by using SILs in the cumulative impact part of the analysis, MassDEP failed to consider whether insignificant emissions from the Salem facility combined with background pollutant levels might result in a NAAQS violation. *Id.* Petitioners argue that this use of SILs violates the D.C. Circuit's holding in *Sierra Club v. EPA*, 705 F.3d 458 (D.C. Cir. 2013). There, the court vacated and remanded SILs regulations for PM_{2.5}, because the regulations did "not give permitting authorities that implement the SILs discretion to require a cumulative air quality analysis for sources that are below the SIL, but could nevertheless cause a violation of the NAAQS or increment" due to high background levels of pollutants. 705 F.3d at 465. Petitioners now seek to extend the reasoning of *Sierra Club* to MassDEP's use of SILs in the cumulative impact analysis, which did consider both emissions from the proposed source and background pollutant levels.

The Board denies review of Petitioners' claim regarding use of SILs in the cumulative impact analysis because Petitioners have not preserved this issue for review. To obtain Board review, a petitioner must demonstrate that "each issue being raised in the petition was raised during the public comment period," 40 C.F.R. § 124.19(a)(4)(ii), or show that the issue was not reasonably ascertainable at that time. *See* 40 C.F.R. § 124.13; *see also In re Christian Cnty. Generation, LLC*, 13 E.A.D. 449, 457-58 (EAB 2008). Importantly, commenters must raise issues with sufficient specificity and clarity that the permitting authority has an opportunity to address the concerns raised before it issues the permit. *In re Westborough*, 10 E.A.D. 297, 304 (EAB 2002). Petitioners have not made that showing here. They rely solely on a comment from

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EPA Region 1 (“Region”) on MassDEP’s use of SILs to argue that their claim has been preserved for review. Petition at 17. As the discussion below shows, however, the Region’s comments did not raise the specific issue Petitioners now present.

SILs are regulatory and analytical tools that identify pollutant levels that have an insignificant or de minimis effect on ambient air quality relative to the NAAQS or PSD increments.³⁰ Prevention of Significant Deterioration for Particulate Matter Less Than 2.5 Micrometers – Increments, Significant Impact Levels and Significant Monitoring Concentrations, 72 Fed. Reg. 54,112, 54,138-39 (Sept. 21, 2007); 75 Fed Reg. 64,864, 64,891 (Oct. 20, 2010). They have multiple, distinct uses in air quality analyses. 75 Fed Reg. at 64,890-91. As explained below, MassDEP used SILs for two different purposes in the Salem facility air quality analysis. Importantly, the Region’s comment concerned the first of these uses, and Petitioners now challenge the second.

MassDEP first used SILs as a screening tool in the preliminary stage of the air quality analysis. Focusing only on the Salem facility’s projected emissions, MassDEP used SILs to determine if it could conclude, at the preliminary stage, that the projected emissions would not cause or contribute to a NAAQS violation or if could not make that determination without a cumulative impact analysis of the source’s projected emissions, emissions from existing sources, and background pollutant levels. Draft PSD Fact Sheet at 19. MassDEP’s use of SILs as a screening tool rendered mixed results. Projected emissions from the Salem facility fell below the SILs for 24-hour PM₁₀, annual PM_{2.5}, and annual NO_x. *Id.* Thus, MassDEP assumed that the Salem facility would not cause or contribute to a violation of the NAAQS for these pollutant standards. Projected emissions exceeded the SILs, however, for 24-hour PM_{2.5} and 1-hour NO_x. Accordingly, MassDEP conducted a cumulative impact analysis – which assessed the combined level of emissions from

³⁰ SILs are present in both the CAA regulations and EPA guidance documents. See 40 C.F.R. § 51.165(b)(2); *NSR Manual* at C.28 tbl.C-4.

the proposed and existing sources as well as background pollutant levels – to evaluate NAAQS compliance for 24-hour PM_{2.5} and 1-hour NO_x. *Id.*

During the public comment period, the Region commented on MassDEP's conclusion that NAAQS compliance “had been demonstrated for all pollutants and the averaging periods for which the impacts *are below the SILs.*” Region Comments at 2 (quoting MassDEP's PSD Draft Fact Sheet determination as to 24-hour PM₁₀, annual PM_{2.5}, and annual NO_x) (emphasis added). As to these particular NAAQS determinations, the Region questioned MassDEP's use of SILs “alone as a screening tool to show compliance with [the NAAQS].” Region Comments at 2. Referencing the *Sierra Club* decision, the Region expressed concern that relying solely on SILs may be inappropriate because “there may by [sic] locations where the background concentration is close to the NAAQS.” *Id.* Instead, the Region recommended that “MassDEP compile information on the background concentration levels in the areas where the project is located” and examine whether the difference between the NAAQS and background levels exceeds the SILs. *Id.* If so, the Region thought that a permit issuer could rely upon emissions below a SIL to show NAAQS compliance “without any additional modeling.”³¹ *Id.* The Region did not comment on MassDEP's conclusion that its cumulative impact analysis showed NAAQS compliance for 24-hour PM_{2.5} and 1-hour NO_x. MassDEP responded to the Region's comment by abandoning use of SILs as a stand alone determinant of whether it needed to conduct a cumulative impact analysis to assess NAAQS compliance. Instead, as the Region suggested, MassDEP considered whether the SILs for

³¹ This recommendation directly tracks guidance that EPA's Office and Air Quality Standards and Planning issued following the *Sierra Club* decision. There, EPA advised that permit issuers “should not rely on the PM_{2.5} SILs alone to demonstrate that the source will not cause or contribute to a violation of the PM_{2.5} National Ambient Air Quality Standard” but should also consider “monitored PM_{2.5} background concentrations.” Office of Air Quality Standards & Planning, U.S. EPA, *Circuit Court's Decision on PM_{2.5} Significant Impact Levels and Significant Monitoring Concentration* (Mar. 4, 2013) (A.R. 1-16). Similar advice is contained in the preamble to the PM_{2.5} SILs regulation. 75 Fed. Reg. at 64,892.

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24-hour PM₁₀, annual PM_{2.5}, and annual NO_x (the SILs that were not exceeded), in combination with background levels of those pollutants, exceeded the NAAQS. RTC at 18. It concluded they did not.³² *Id.*

MassDEP also used SILs in a second way in the air quality analysis. This second use occurred not in the preliminary stage of the analysis but as part of the cumulative impact analysis, which examined whether combined residues from the proposed source and existing sources would violate the NAAQS for 24-hour PM_{2.5} and 1-hour NO_x. For cumulative impact analyses, the NSR Manual recommends that permit issuers rely on SILs to establish the size of the geographical area studied. *NSR Manual* at C.26; *accord* 75 Fed. Reg. at 64,890. The NSR Manual explains that the area for study should include "all locations where the [modeled] significant increase in the potential emissions of a pollutant from a new source * * * will cause a significant ambient impact (i.e., equal or exceed the applicable significant ambient impact level * * *)." ³³ *NSR Manual* at C.26. Following this guidance, MassDEP relied upon the findings under the SILs for 24-hour PM_{2.5} and 1-hour NO_x to define the scope of the geographic area studied in the cumulative impact analysis. RTC at 23. The cumulative impact analysis found no NAAQS violations. Final PSD Fact Sheet at 21-22.

³² MassDEP also included the SILs for 24-hour PM_{2.5} and 1-hour NO_x in this new screening analysis that took into account background pollutant levels. These SILs combined with background pollutant levels are also below the NAAQS. Because Petitioners did not preserve their claim, the Board need not reach the issue of whether this revised screening level analysis of SILs and background pollutant levels in conjunction with the cumulative impact analysis sufficiently addresses Petitioners' concern that MassDEP has ignored insignificant emissions in the air quality analysis.

³³ The actual area examined is not rigidly limited to what locations are projected to have SIL exceedances but encompass "a circular area with a radius extending from the source to (1) the most distant point where approved dispersion modeling predicts a significant ambient impact will occur, or (2) a modeling receptor distance of 50 km, whichever is less." *NSR Manual* at C.26. This manner of constructing the area studied may result in an area "comprised of pockets of significant impact separated by pockets of insignificant impacts." *Id.*

Petitioners now challenge the second manner in which MassDEP relied upon SILs: to determine the size of the geographical area, and thus the modeling locations or receptors, considered in the cumulative impact analysis for 24-hour $PM_{2.5}$ and 1-hour NO_x . And Petitioners are quite clear about this. They specifically disavow challenging the use of SILs to eliminate the need for a cumulative analysis, emphasizing that they “are contesting *only* the use of SILs to avoid culpability for a [NAAQS] violation *once the cumulative analysis has been undertaken.*” Petition at 19 n.18 (emphasis added). More specifically, Petitioners argue that MassDEP erred because “[t]he cumulative analysis was limited to whether there was a NAAQS violation at the receptor points where [the Salem facility’s] contribution was ‘significant,’ i.e., above the NO_2 SIL of $7.5 \mu g/m^3$ at that receptor point.” Petition at 19. Citing the reasoning of the *Sierra Club* decision, Petitioners contend that MassDEP should instead have structured the cumulative impact analysis so that it considered “whether [the Salem facility’s] ‘insignificant’ emissions may be causing a NAAQS violation at any receptor.” *Id.*

The Board concludes that the Region’s comment did not raise the issue upon which Petitioners seek review with the required degree of clarity and specificity. Although both the Region’s comment and Petitioners’ claim concern SILs, the differences between the two could not be more stark. Petitioners challenge separate NAAQS compliance determinations than those commented on by the Region, and the Petitioners’ challenge presents distinctly different technical and legal questions than the Region’s comment.

To recap, the Region’s comment only addressed MassDEP’s NAAQS compliance determinations for 24-hour PM_{10} , annual $PM_{2.5}$, and annual NO_x . MassDEP based these determinations on a comparison of projected emissions from the Salem facility to SILs without taking background pollutant levels into account through a cumulative impact analysis. In its comment, the Region questioned whether SILs may be used to completely eliminate consideration of background pollutant levels in evaluating whether a proposed source will cause or contribute to a NAAQS violation. In support of this comment, the Region

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referenced the precise issue addressed and decided in *Sierra Club*: the legality of a total bar on considering background pollutant levels in the NAAQS compliance determination calculus.

On the other hand, Petitioners challenge the NAAQS compliance determinations for which a cumulative impact analysis was performed – 24-hour PM_{2.5} and 1-hour NO_x – and not the determinations based only on SILs – 24-hour PM₁₀, annual PM_{2.5}, and annual NO_x. See *City of Attleboro*, 14 E.A.D. at 431 (holding that an argument was not preserved for review of a nitrogen effluent limit by a comment raising the argument as to a phosphorus limit in the same permit). Further, unlike the Region's comment on the use of SILs to exclude consideration of background pollutant levels, Petitioners challenge whether SILs may be used as part of a NAAQS compliance analysis that fully incorporates background pollutant levels. Finally, Petitioners' challenge does not rely, like the Region's comment, on the precise holding in *Sierra Club*; rather, Petitioners seek to extend the reasoning of that decision to the different factual context presented by MassDEP's NAAQS compliance determinations for 24-hour PM_{2.5} and 1-hour NO_x.

Given these fundamental differences, we do not think MassDEP could have reasonably inferred Petitioners' claim from the Region's comment.³⁴ See *In re New Eng. Plating Co.*, 9 E.A.D. 726, 735

³⁴ If Petitioners had specifically raised during the comment period their challenge to MassDEP's use of SILs in the cumulative impact analysis, MassDEP – an entity, unlike the Board, which has expertise in cumulative impact analyses – would have had the opportunity to address the complex technical/legal questions posed by Petitioners' claim. See *In re W. Bay Exploration Co.*, UIC Appeal No. 14-67, at 4 (July 3, 2014) (Order Denying Review) (requiring issues to be raised during the comment period ensures that technical questions are resolved in the first instance by the body with the necessary expertise). Further, if MassDEP had concluded its use of SILs was problematic, MassDEP would have had a chance prior to finalizing the Permit to conduct further analysis of the potential for insignificant emissions causing a NAAQS violation as it did with the SILs issue raised by EPA. See *New Eng. Plating*, 9 E.A.D. at 732 (requiring issues to be raised during the comment period ensures that the permit issuer "has an opportunity to address potential problems with the draft permit before the permit (continued...)

(EAB 2001) (holding that a permit issuer “is under no obligation to speculate about possible concerns that were not articulated in the comments”). Accordingly, because Petitioners rely solely on EPA’s comment to show that their claim regarding SILs’ role in the cumulative impact analysis was raised during the comment period, they have not met their burden under section 124.19(a)(4)(ii) to demonstrate that the issue was preserved for review.

2. *MassDEP Reasonably Relied on Existing Air Monitoring Data*

Petitioners argue that MassDEP clearly erred when it allowed Footprint to submit existing regional air monitoring data from the monitoring station located in Lynn, Massachusetts (“Lynn monitor”), to comply with CAA sections 165(a)(7) and (e), 42 U.S.C. § 7475(a)(7), (e). Petition at 14-17. They claim that the area surrounding the Lynn monitor is not representative of the Salem facility site.³⁵ For reasons explained below, we conclude the Petitioners have not met their burden in demonstrating that the MassDEP clearly erred in resolving this technical issue.

Pursuant to the NSR Manual, permitting authorities may rely on existing monitoring data to fulfill section 165 monitoring requirements where these data are “representative of the air quality for the area in

³⁴(...continued)
becomes final”).

³⁵ Petitioners also claim, again citing *Sierra Club v. EPA*, 705 F.3d 458 (D.C. Cir. 2013), that MassDEP improperly justified using existing monitoring data by relying on significant monitoring concentrations (“SMCs”). Petition at 15. Petitioners correctly note that the D.C. Circuit, in *Sierra Club*, vacated the SMC for PM_{2.5}. But MassDEP did not rely on the SMC for PM_{2.5}, and the court invalidated the SMC only for PM_{2.5}. RTC at 18-19. Further, MassDEP also justified its decision to rely on the existing monitoring data from Lynn on the ground that it represents the air quality at the Salem facility site. *Id.* at 19-20. Petitioners do not dispute this as the appropriate standard for judging whether existing monitoring data are acceptable regardless of the status of the SMCs.

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which the proposed project would construct and operate.” *NSR Manual* at C.18. EPA’s Ambient Monitoring Guidelines further elucidate this standard, explaining that the monitoring data should be representative of the area that will have maximum emissions from the new source, the area that has maximum emissions from existing sources, and the area that will have maximum impact from both the new source and existing sources. Office of Air Quality Planning & Standards, U.S. EPA, No. EPA-450/4-87-007, *Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)* § 2.4.1, at 6 (May 1987).

As with all technical questions such as this, “the Board typically defers to the expertise of the permit issuer on such matters if the permit issuer adequately explains its rationale and supports its reasons in the record.” *In re Bear Lake Props., LLC*, UIC Appeal No. 11-03, slip op. at 22, 15 E.A.D. ___ (EAB June 28, 2012) (citing cases). In particular, the Board has specifically held that “[t]he choice of appropriate data sets for the air quality analysis is an issue largely left to the discretion of the permitting authority.” *In re Knauf Fiberglass GmbH*, 8 E.A.D. 121, 147 (EAB 1999); accord *In re Hibbing Taconite Co.*, 2 E.A.D. 838, 851 (Adm’r 1989).

MassDEP justified its decision to accept the data from the Lynn monitor on the basis that the data were both “representative” and “conservative.”³⁶ Final PSD Fact Sheet at 20. MassDEP cited the proximity of the Lynn monitor to the Salem facility (5.9 miles) to support its finding that the data are “representative.” MassDEP further claimed the Lynn monitoring data are “conservative” because Lynn is more densely populated and industrialized than Salem, and Lynn is closer to Boston metropolitan area than Salem. Petitioners dispute these conclusions. Petition at 16. They challenge MassDEP’s description of the Lynn data as representative simply because it is collected 5.9 miles from the Salem facility. Petitioners also emphasize that the Lynn

³⁶ The data are also very current, having been collected in the years 2010-2012. Letter from Keith H. Kennedy, Tetra Tech, to James Belsky, Permit Chief, MassDEP Ne. Reg’l Office at 4 & tbl.6-10 (Apr. 12, 2013) (A.R. 4-29).

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monitor is located immediately adjacent to a large public park in Lynn, the Lynn Woods Reservation.³⁷ Finally, they characterize Salem as “a densely settled Boston suburb.” *Id.*

We find that MassDEP has provided a reasonable rationale for its conclusions and adequately responded to Petitioners’ objections. MassDEP correctly observed that Lynn is more densely settled than Salem. Census data shows that Lynn has almost twice as many people per square mile of land area as Salem.³⁸ The record also shows the Lynn area is the more industrialized of the two. MassDEP’s air quality analysis identified two major pollution sources in close proximity to the Lynn monitor: the General Electric Aircraft Engine facility and the Wheelabrator Saugus waste-to-energy plant. Both of these facilities are within two miles of the Lynn monitor but seven miles from the Salem facility. Final PSD Fact Sheet at 20. On the other hand, MassDEP identified no major pollution sources in Salem other than the existing coal-fired Salem power plant, which will be replaced by the proposed facility.³⁹ *Id.* at 21. Notably, the Lynn monitor is likely to have captured emissions from the to-be-replaced Salem power plant, adding to the

³⁷ See Div. of Air & Climate Programs, MassDEP, *Massachusetts 2012 Air Quality Report* app. A, at 43 (July 2013) (detailing location of the Lynn monitor) (A.R. 2-9).

³⁸ The U.S. Census Bureau reports the 2010 population density of Salem as 4,992.8 persons per square mile of land area and the density of Lynn as 8,409.7 persons per square mile of land area. U.S. Census Bureau, *State and County Quick Facts*, <http://quickfacts.census.gov/qfd/index.html> (last visited on Aug. 25, 2014). See *In re Russell City Energy Ctr, LLC*, PSD Appeal Nos. 10-01 through 10-05, slip op. at 47 (EAB Nov. 18, 2010), 15 E.A.D. ___ (the Board may take “official notice” of “public documents such as statutes, regulations, judicial proceedings, public records, and Agency documents”) *aff’d sub. nom Chabot-Las Positas Cmty. Coll. Dist. v. EPA*, 482 F. App’x 219 (9th Cir. 2012).

³⁹ In the cumulative modeling analysis, MassDEP did identify three minor pollution sources in or near Salem: Rousselot Peabody facility (formely Eastman Gelation Corp.), Peabody Municipal Light, and Marblehead Municipal Light. The combined NO_x emissions for these three facilities are 21.74 tons per year compared to 970.1 tons per year for the General Electric and Wheelabrator facilities. Final PSD Fact Sheet at 21.

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conservative nature of the measurements from the Lynn monitor. *Id.* at 20. Further, Petitioners do not dispute that Lynn is closer than Salem to the heart of the Boston metropolitan area, and thus closer to the pollution attributable to a major metropolitan area. Finally, Petitioners' emphasis on the Lynn monitor's location next to a large wooded park carries little weight. After all, the Salem facility fronts on Salem Harbor, a large body of water directly connected to the Atlantic Ocean. RTC at 17; see Letter from Keith H. Kennedy, Tetra Tech, to James Belsky, Permit Chief, MassDEP Ne. Reg'l Office at 6 (Apr. 12, 2013) (A.R. 4-29) (illustrating locations of the proposed facility and the Lynn monitor on a map).

Taking all of these considerations into account, the Board defers to MassDEP's technical expertise in characterizing the Lynn monitoring data as a conservative measure of ambient pollution levels in the area of the Salem facility.⁴⁰ Thus, the data satisfy the concept of "representativeness" as explained in the NSR Manual and the Ambient Monitoring Guidelines.⁴¹ See *Knauf*, 8 E.A.D. at 146-48 (upholding data as representative where data were a "conservative" estimate of conditions at the proposed facility because data represented an area more densely populated with pollutant sources). We therefore deny Petitioners' challenge to MassDEP's reliance on these data.

⁴⁰ MassDEP notes that the proximity of these General Electric and Wheelabrator facilities to the Lynn monitor further increase the conservativeness of MassDEP's air quality analysis because the emissions from these facilities are included in two separate inputs to the cumulative impact analysis, the Lynn monitoring data and the modeling of emissions from existing major sources. Final PSD Fact Sheet at 20.

⁴¹ Petitioners fault MassDEP for not specifically making findings regarding each of the three areas of maximum emission levels noted in the Ambient Monitoring Guidelines. Petition at 17. But given that MassDEP explicitly addressed the "representativeness" issue and no party specifically raised these factors bearing on representativeness during the comment period, we can find no error by MassDEP. See *Knauf*, 8 E.A.D. at 146-48 (upholding "generic" response by permit issuer to "generic" comments challenging the representativeness of ambient air monitoring data).

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VI. CONCLUSION AND ORDER

For the reasons stated above, the Board denies the petition of Jeff Brooks, Andrea Celestine, William Dearstyne, and Linda Haley for review of MassDEP's final permit decision for Footprint Power Salem Harbor Development, LP, PSD Permit Transmittal No. X254064, Application No. NE-12-022.

So ordered.

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Order Denying Review in the matter of Footprint Salem Harbor Development, LP, PSD Appeal No. 14-02, were sent to the following persons in the manner indicated:

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Dated: SEP 2 2014


Annette Duncan
Secretary

