

IN RE PALMDALE ENERGY, LLC

PSD Appeal No. 18-01

ORDER DENYING REVIEW

Decided October 23, 2018

Syllabus

The Center for Biological Diversity, Desert Citizens Against Pollution, California Communities Against Toxics, and Sierra Club (collectively “Conservation Groups” or “Groups”) petition the Environmental Appeals Board (“Board”) to review a Clean Air Act prevention of significant deterioration permit that the U.S. Environmental Protection Agency (“EPA”), Region 9 (“Region”), issued to Palmdale Energy, LLC (“Palmdale”). The permit authorizes Palmdale to construct and operate the Palmdale Energy Project (“PEP”), a 645-megawatt combined-cycle natural gas-fired electrical power plant, in Palmdale, California, adjacent to the U.S. Air Force’s Plant 42 aeronautical facility (“Plant 42”). The Conservation Groups challenge certain aspects of the Region’s final permit decision, specifically the Region’s “Best Available Control Technology” (“BACT”) and ambient air quality modeling analyses for the PEP facility.

HELD: The Board denies the Conservation Groups’ petition for review of the Region’s final permit decision.

BACT Issues. In comments on the draft permit, the Conservation Groups proposed a new control technology configuration – namely, replacing the combined-cycle turbines’ duct burners with battery storage – that neither Palmdale nor the Region had identified as a potential control technology in the original BACT analysis. In its response to comments, the Region rejected the Groups’ proposal as, among other things, technically infeasible.

The Board holds that the Groups fail to carry their burden of demonstrating that the Region’s permitting decision is clearly erroneous or otherwise warrants review. The Region explained that it was unaware of the Groups’ proposed design being applied on any source similar to the PEP facility, and none of the facilities the Groups identified use batteries in the fashion advocated by the Groups. And even if battery systems exist that could supply power for the length of the PEP facility’s peak demand, the Board determined that that fact alone does not show that batteries can replace duct burners at the PEP facility because the purposes and functions of the duct burners are not limited to providing energy during peak demand times.

Air Quality Issues. With respect to air quality modeling, the Conservation Groups contend that the Region clearly erred by: (a) failing to consider aircraft emission impacts on modeling receptors outside Plant 42 boundaries in the PEP facility's cumulative impacts analysis for nitrogen dioxide ("NO₂") averaged over one hour; (b) excluding impacts from Plant 42 emissions sources on Plant 42 modeling receptors in that same cumulative impacts analysis; and (c) failing to require cumulative impacts analyses for carbon monoxide ("CO") emissions and annual NO₂ emissions.

The Board holds that, as to aircraft emission impacts on modeling receptors outside Plant 42 boundaries, the Conservation Groups do not meaningfully confront the Region's analysis, instead expressing their general disagreement with the Region's technical judgments for accepting, as representative of the aircraft emissions, background monitoring data collected at an urban air monitoring station 2.5 miles away from the PEP facility site. With respect to impacts from Plant 42 emissions sources on Plant 42 modeling receptors, the Board finds that the Conservation Groups' arguments over whether Plant 42 is open to the public, and thus the atmosphere within Plant 42 boundaries properly considered "ambient air," are not preserved for review. (The Board notes that the Region also conducted a supplemental analysis, in Appendix 6 of the Fact Sheet, that included Plant 42 impacts on Plant 42 receptors and demonstrated that the PEP facility's cumulative one-hour NO₂ impacts fell beneath the national ambient air quality standards, demonstrating compliance.) Regarding cumulative impacts analyses for CO and annual NO₂, the Board holds that the Groups fail to carry their burden of demonstrating that the Region's decision to use "significant impact levels" in deciding against conducting cumulative impact analyses for these pollutants was clearly erroneous or otherwise warrants review.

Before Environmental Appeals Judges Aaron P. Avila, Mary Kay Lynch, and Kathie A. Stein.

Opinion of the Board by Judge Avila:

I. STATEMENT OF THE CASE

On May 29, 2018, the Center for Biological Diversity, Desert Citizens Against Pollution, California Communities Against Toxics, and Sierra Club (collectively "Conservation Groups" or "Groups") timely filed with the Environmental Appeals Board ("Board") a petition for review of a decision by the U.S. Environmental Protection Agency ("EPA" or "Agency"), Region 9 ("Region"), to issue a prevention of significant deterioration ("PSD") permit to Palmdale Energy, LLC ("Palmdale"), pursuant to Clean Air Act § 165, 42 U.S.C. § 7475. The permit authorizes Palmdale to construct and operate the Palmdale Energy Project ("PEP"), a 645-megawatt combined-cycle natural gas-fired

electrical power plant, in Palmdale, California, adjacent to the U.S. Air Force's Plant 42 aeronautical facility ("Plant 42").

In their petition for review, the Conservation Groups challenge certain aspects of the Region's "Best Available Control Technology" ("BACT") and ambient air quality modeling analyses for the PEP facility. First, with respect to BACT, the Groups contend that the Region clearly erred by rejecting battery storage in lieu of duct burners as the basis for applying BACT emissions limits to PEP's combustion turbine/duct burner units. Second, with respect to air quality modeling, the Groups contend that the Region clearly erred by: (a) failing to consider aircraft emission impacts on receptors outside Plant 42 in the PEP facility's cumulative impacts analysis for nitrogen dioxide averaged over one hour; (b) excluding impacts from Plant 42 emissions sources on Plant 42 receptors in that same cumulative impacts analysis; and (c) failing to require cumulative impacts analyses for carbon monoxide emissions and annual nitrogen dioxide emissions. The Board held oral argument in this matter on August 30, 2018. For the reasons set forth below, the Board denies the Conservation Groups' petition for review.

II. PRINCIPLES GOVERNING BOARD REVIEW

The Board's review of PSD permits is governed by EPA permitting rules at 40 C.F.R. part 124, which assign to petitioners the burden of demonstrating that review is warranted. *See* 40 C.F.R. § 124.19(a)(4). In promulgating these rules, EPA expressed its intent that the power to grant review "should be only sparingly exercised," and most permit conditions "should be finally determined at the [permit issuer's] level." Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,412 (May 19, 1980); *see also* Revisions to Procedural Rules Applicable in Permit Appeals, 78 Fed. Reg. 5281, 5282 (Jan. 25, 2013). Accordingly, the Board ordinarily denies review of a permit decision unless a petitioner demonstrates that the permit decision 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. 40 C.F.R. § 124.19(a)(4)(i)(A)-(B); *see In re La Paloma Energy Ctr., LLC*, 16 E.A.D. 267, 269 (EAB 2014). When evaluating a challenged permit decision for clear error, the Board examines the administrative record that serves as the basis for the permit to determine whether the permit issuer exercised "considered judgment" in issuing the permit. *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) (holding that permit issuer must articulate, with reasonable clarity, reasons supporting its conclusions and significance of crucial facts it relied on in reaching its conclusions).

III. OVERVIEW OF PSD LEGAL REQUIREMENTS

In 1977, Congress enacted the PSD provisions of the Clean Air Act (“CAA” or “Act”). Among other things, Congress intended “to insure that economic growth will occur in a manner consistent with the preservation of existing clean air resources.” CAA § 160(3), 42 U.S.C. § 7470(3). Congress also intended “to assure that any decision to permit increased air pollution in any area to which this section applies is made only after careful evaluation of all the consequences of such a decision and after adequate procedural opportunities for informed public participation in the decisionmaking process.” CAA § 160(5), 42 U.S.C. § 7470(5).

Toward those ends, Congress established a PSD permitting program that is applicable in areas of the country deemed to be in “attainment” or “unclassifiable” with respect to federal air quality standards called “national ambient air quality standards,” or “NAAQS.” *See* CAA §§ 161, 165, 42 U.S.C. §§ 7471, 7475. Congress charged EPA with developing NAAQS for air pollutants whose presence in the atmosphere above certain concentration levels could “reasonably be anticipated to endanger public health or welfare.” CAA § 108(a)(1)(A), 42 U.S.C. § 7408(a)(1)(A); *see* CAA § 109, 42 U.S.C. § 7409. To date, EPA has promulgated NAAQS for six air contaminants: (1) sulfur oxides (measured as sulfur dioxide (“SO₂”)); (2) particulate matter (measured as “PM₁₀,” denoting particulates 10 micrometers or smaller in diameter, or as “PM_{2.5},” denoting particulates 2.5 micrometers or smaller in diameter); (3) carbon monoxide (“CO”); (4) ozone (measured as volatile organic compounds (“VOCs”) or as nitrogen oxides (“NO_x”)); (5) nitrogen dioxide (“NO₂”); and (6) lead. 40 C.F.R. §§ 50.4-12.

In geographical areas deemed to be in “attainment” for any of those pollutants, the “ambient air” (i.e., “that portion of the atmosphere, external to buildings, to which the general public has access,” 40 C.F.R. § 50.1(e)) contains concentrations that meet or are below the NAAQS for that pollutant. CAA § 107(d)(1)(A)(ii), 42 U.S.C. § 7407(d)(1)(A)(ii). In areas designated “unclassifiable,” ambient air quality cannot be classified on the basis of available information as either meeting or not meeting the NAAQS. CAA § 107(d)(1)(A)(iii), 42 U.S.C. § 7407(d)(1)(A)(iii). Areas may also be designated as “nonattainment,” meaning that the concentration of a pollutant in the ambient air exceeds the NAAQS for that pollutant. CAA § 107(d)(1)(A)(i), 42 U.S.C. § 7407(d)(1)(A)(i). The PSD program does not apply, however, in nonattainment areas. *See* CAA § 161, 42 U.S.C. § 7471.

An entity desiring to construct a “major emitting facility”¹ in an attainment or unclassifiable area must obtain preconstruction approval, in the form of a PSD permit, to build such a facility. CAA § 165, 42 U.S.C. § 7475. An applicant for a PSD permit must show that its proposal will achieve emissions limits established by the “best available control technology,” or “BACT,” for pollutants emitted from its facility in amounts greater than applicable levels of significance.² CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(b)(23), (j)(2)-(3). A BACT analysis is a site-specific, pollutant-specific determination that results in the selection of emissions limits representing application of air pollution control technologies or methods appropriate for the facility in question.³ *In re N. Mich. Univ.*, 14 E.A.D. 283, 291 (EAB 2009) (noting that BACT definition in CAA requires permit issuers to “proceed[] on a case-by-case basis, taking 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”) (citations and quotations omitted).

Such an analysis typically unfolds in accordance with a five-step, top-down process suggested by Agency guidance. *See* Office of Air Quality Planning & Standards, U.S. EPA, *New Source Review Workshop Manual*, at B.5-.55 (draft Oct. 1990), *available at* <https://www.epa.gov/sites/production/files/2015-07/documents/1990wman.pdf> (“*NSR Manual*”). In Step 1, all available control options

¹ A “major emitting facility” is a stationary source in any of certain listed stationary source categories that, in new or modified form, emits or has the potential to emit 100 tons per year (“tpy”) or more of any air pollutant, or any other new or modified stationary source that has the potential to emit 250 tpy or more of any air pollutant. *See* CAA § 169(1), (2)(C), 42 U.S.C. § 7479(1), (2)(C).

² EPA regulations define the level of significance for various pollutants, including, for example, 100 tpy for CO, 40 tpy for NO_x, 40 tpy for SO₂, 25 tpy for total particulate matter, and 15 tpy for PM₁₀. 40 C.F.R. § 52.21(b)(23)(i). The level of significance for any other pollutant regulated under the Act but not listed in 40 C.F.R. § 52.21(b)(23)(i) is “any emissions rate.” *Id.* § 52.21(b)(23)(ii).

³ The CAA defines “BACT” as an emission limit that is based on a “case-by-case” analysis of the “maximum degree of reduction of each pollutant subject to regulation * * * from any major emitting facility * * * taking into account energy, environmental, and economic impacts and other costs,” that is “achievable” by employing certain identified processes, techniques, or technologies. CAA § 169(3), 42 U.S.C. § 7479(3); *accord* 40 C.F.R. § 52.21(b)(12).

with potential application to the source and the targeted pollutant are identified, and in Step 2 the technical feasibility of each control option identified in Step 1 is analyzed. In Step 3, options deemed technically feasible are ranked in order of effectiveness, while in Step 4 the energy, environmental, and economic impacts of the options are evaluated. Finally, in Step 5, the emission limitation achievable by the most effective control option not eliminated in a preceding step is selected as BACT for that pollutant. Notably, the NSR Manual is not a binding Agency regulation, so strict application of the methodology in the Manual is not mandatory. *See In re Cardinal FG Co.*, 12 E.A.D. 153, 162 (EAB 2005). The Manual's methodology is nonetheless often used by permitting authorities because it "provides a framework that assures adequate consideration of the regulatory criteria and consistency within the PSD permitting program." *Id.*; *see also Alaska Dep't of Env'tl. Conserv. v. EPA*, 540 U.S. 461, 476 n.7 (2004) (observing that top-down process is "commonly" used by permitting authorities); *N. Mich. Univ.*, 14 E.A.D. at 291-92; *Steel Dynamics*, 9 E.A.D. at 183 & n.22.

An applicant also must demonstrate that its facility's emissions will not cause or contribute to an exceedance of any applicable air quality standard or related criterion. *See* CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3); 40 C.F.R. § 52.21(k)-(m). An air quality modeling analysis typically unfolds in accordance with implementing regulations promulgated by the Agency, called the "Guideline on Air Quality Models," or "GAQM." 40 C.F.R. pt. 51, app. W (2005, rev. 2017).⁴ To demonstrate that emissions from a proposed project will not cause or contribute to violations of applicable NAAQS, CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3); 40 C.F.R. § 52.21(k), an applicant conducts an ambient air quality modeling

⁴ EPA issued a version of the GAQM in 2005 and revised it in January 2017, with an effective date of May 22, 2017. *See* Revisions to the Guideline on Air Quality Modeling, 82 Fed. Reg. 5128 (Jan. 17, 2017); *see also* Further Delay of Effective Dates of EPA Rules, 82 Fed. Reg. 14,324, 14,325 (Mar. 20, 2017). Due to the timing of its application, Palmdale prepared the air quality modeling for the PEP facility in accordance with the requirements of the 2005 GAQM. *See* U.S. EPA Region 9, *Fact Sheet for Palmdale Energy Project, PSD Permit SE 17-01* § 7.2, at 49 (Aug. 2017) (A.R. 2.2). The Region accepted the modeling protocol as appropriate and sufficiently stringent, *id.*, and the Conservation Groups have not challenged that determination. In some places in this decision, the Board provides citations to both 2005 and 2017 provisions to clarify changes in terminology and content.

analysis for pollutants the proposed facility has the potential to emit in significant amounts, 40 C.F.R. § 52.21(m)(1)(a).

An ambient air quality analysis generally proceeds in two stages. First, the applicant conducts a “single-source” impact analysis (sometimes called a “project-only” or “preliminary” analysis) using dispersion modeling to evaluate whether project-only emissions will have a significant effect on ambient air quality. *See* GAQM § 9.2.3(a)(i), (b)-(c) (2017); GAQM § 10.2.1(b) (2005); *NSR Manual*, at C.24. Second, if the new project-only emissions are significant, a “cumulative impact analysis” (sometimes called a “full impact analysis”) is conducted. That analysis combines project-only emissions with ambient background concentrations and emissions from appropriate nearby sources and then compares the resulting air pollutant concentrations to the NAAQS to determine compliance with PSD requirements. *See* GAQM § 9.2.3(a)(ii), (d) (2017); GAQM § 8.2.3 (2005); *NSR Manual*, at C.24-25.

IV. PROCEDURAL AND FACTUAL HISTORY

In October 2015, Palmdale filed an application with the Region for a PSD permit to construct and operate the Palmdale Energy Project, a new major stationary source, on fifty acres of land in the City of Palmdale, California. *See* Atmospheric Dynamics, Inc., *PSD Permit Application for the Palmdale Energy Project* (Oct. 2015) (Administrative Record Index No. (“A.R.”) 1.1) (“Permit Appl.”). The area in which the facility is to be located is categorized as attainment or unclassifiable for all air pollutants covered by the NAAQS except ozone. *See* U.S. EPA Region 9, *Fact Sheet for Palmdale Energy Project, PSD Permit SE 17-01* § 2, at 1 (Aug. 2017) (A.R. 2.2) (“Fact Sheet”). As proposed, the PEP facility consists of two natural gas-fired combustion turbine generators, each of which is equipped with a natural gas-fired duct burner. Each of the two combustion turbine/duct burner combinations vents heat energy to its own dedicated heat recovery steam generator (“HRSG”), and steam from both HRSGs is routed to a single steam turbine generator. *See* Permit Appl. § 1, at 1-1, § 5.4, at 5.4-1. The duct burners boost the total heat input to the HRSGs, which increases steam output from the HRSGs and concomitantly the amount of electricity the steam generator, and thus the entire facility, produces. The PEP facility is designed to function as an “intermediate load-following” or “flexible capacity” facility. Fact Sheet § 6.3.4, at 26. As summarized by the Region:

This type of facility primarily operates to meet the energy market’s ramping and peak load requirements in the morning and late afternoon, helping to integrate the ramp up and ramp down of solar

generation. The purpose of the PEP is to be able to respond to changes in demand from the electric grid, making this the fundamental business purpose of the facility. In this case, the source's ability to respond to ramping and peak load needs, as well as operating in different modes in response to market demand, is inherent to [Palmdale's] basic business purpose and design.

Id. (footnotes omitted); *see* Permit Appl. § 2, at 2-1.

Palmdale's application contained a detailed BACT analysis for the combustion turbine/duct burner units, along with air quality modeling of PEP-only emissions impacts and cumulative emissions impacts. Permit Appl. § 5.4, at 5.4-1 to -28, § 6, at 6-1 to 6.5-14, § 7, at 7.1 to 7.6-9. After a preliminary review of the application, the Region sought and received additional information from Palmdale on CO and greenhouse gas ("GHG") BACT for the combustion turbine/duct burner units. *See* E-Mail from Lisa Beckham, Env'tl. Eng'r, U.S. EPA Region 9, to Gregory Darvin (Dec. 5, 2016) (A.R. 1.4); Letter from Gregory S. Darvin, Sr. Meteorologist, Atmospheric Dynamics, Inc., to Lisa Beckham, U.S. EPA Region 9 (May 12, 2017) (A.R. 1.7). The Region later sought and received additional information about GHG BACT as related to solar thermal technology and a particular type of battery storage technology. *See* E-Mail from Lisa Beckham, Env'tl. Eng'r, U.S. EPA Region 9, to Gregory Darvin (July 18, 2017) (A.R. 1.8); Letter from Gregory S. Darvin, Sr. Meteorologist, Atmospheric Dynamics, Inc., to Lisa Beckham, U.S. EPA Region 9 (July 27, 2017) (A.R. 1.9).

On August 17, 2017, the Region issued and invited public comment on a draft PSD permit for the construction and operation of, including the regulation of emissions from, the proposed PEP facility. *See* U.S. EPA Region 9, *Proposed PSD Permit No. SE 17-01 for Palmdale Energy Project* (Aug. 2017) (A.R. 2.1). The Region also issued a "Fact Sheet" containing technical and explanatory information on the draft permit. *See generally* Fact Sheet.

In the Fact Sheet, based on the BACT analysis and supplemental information provided by Palmdale, the Region summarized its analysis and conclusions as to BACT for emissions from the combustion turbines and the duct burners together.⁵

⁵ As to why emissions from the combustion turbines and the duct burners were considered together, Palmdale explained the following in its application:

The exhaust from the turbines will be combined with the exhaust from the duct burners. In a combined-cycle plant the duct burners cannot normally be fired without the turbine[s] being on line. This is the case for the

See id. § 6.3, at 14-35; Permit Appl. § 5.4, at 5.4-1 to -28. With respect to air quality analyses, the Region explained that it had approved use of a monitoring station on Division Street in the City of Lancaster, 2.5 miles away from the PEP site, to represent background ambient air pollution concentrations at PEP. Fact Sheet § 7.3.2, at 51. The Region conducted cumulative air quality impacts analyses by combining background concentrations, PEP's projected emissions, and emissions from "nearby" stationary sources on Plant 42 to evaluate the PEP facility's impact relative to the NAAQS. *Id.* § 7.4.2.2, at 66-67.

During the public comment period, the Conservation Groups submitted comments on the draft permit. *See generally* Letter from Lisa T. Belenky & Robert Ukeiley, Senior Attorneys, Center for Biological Diversity, to Lisa Beckham, Air Permits Office, U.S. EPA Region 9 (Oct. 6, 2017) (A.R. 11.6) ("Comment Letter"). Among many other things, the Groups commented that the BACT analyses the Region conducted for NO_x, CO, and GHGs emissions from the combustion turbine/duct burner pairs were deficient because the analyses failed to consider using batteries instead of duct burners to meet peak demand. *See id.* at 4-6, 8, 10-11. The Groups also commented that the cumulative air quality impacts analyses failed to include emissions from aircraft using Plant 42 runways and ambient air impacts on Plant 42 receptors caused by Plant 42 emissions sources. *Id.* at 15-16.

In April 2018, the Region issued a final PSD permit to Palmdale, along with a detailed response-to-comments document. *See* U.S. EPA Region 9, *PSD Permit No. SE 17-01 for Palmdale Energy, LLC's Palmdale Energy Project* (Apr. 25, 2018) (A.R. 13.1) ("Final Permit"); U.S. EPA Region 9, *Response to Public Comments on Proposed PSD Permit No. SE 17-01 for Palmdale Energy Project* (Apr. 2018) ("A.R. 13.2") ("Response to Comments"). On May 29, 2018, the Conservation Groups timely filed a petition for review of Palmdale's permit. *See generally* Petition for Review ("Pet."). On June 19, 2018, the Region filed a response to the Groups' petition. *See* Response to Petition for Review ("R9 Resp."). With permission of the Environmental Appeals Board, the Groups filed a reply brief on June 29, 2018. *See* Reply Brief ("Reply"). The Board held

proposed PEP design. Add-on control devices that would control emissions from the turbines will also control emissions from the duct burners. As a result, for the add-on control methods reviewed, emissions from the duct burners and turbines are analyzed together.

Permit Appl. § 5.4, at 5.4-1.

oral argument in this case on August 30, 2018. *See* Oral Argument Transcript (“Oral Arg. Tr.”). For the reasons that follow, the Board denies the petition for review.

V. ANALYSIS

A. BACT Issues

1. *Nature of the Conservation Groups’ Challenge*

As recounted previously, Palmdale submitted a BACT analysis with its permit application, and the Region reviewed that BACT analysis and solicited additional information from Palmdale on at least two occasions. The Region then summarized its analysis and conclusions as to BACT in the Fact Sheet for the draft permit that underwent public comment. The Conservation Groups’ challenge to the Region’s BACT determination for this PSD permit is somewhat atypical. Here, the Groups’ comments on the draft permit did not assert that the Region erroneously eliminated an identified control technology during its BACT analysis. Instead, the Groups’ comments identified a new control technology configuration never before identified – replacing the combined-cycle turbines’ duct burners with battery storage – that neither Palmdale nor the Region had identified as a potential control technology in the original BACT analysis. The Groups asserted in their comment letter that the Region should have considered the Groups’ newly identified potential control technology in the Region’s BACT analysis. Comment Letter at 4;⁶ *see* Oral Arg. Tr. at 8 (counsel for Conservation Groups explaining that their position is that “the duct burners should not exist and they should be completely replaced with batteries that will provide that same functionality”). In their petition for review, the Groups claim the Region erred when the Region responded to the Groups’ comment and concluded that the Groups’ newly identified control technology is not BACT.

The Region considered the Conservation Groups’ suggestion of replacing the duct burners with battery storage as well as the supporting information the Groups included in their comment letter. In its response to comments, the Region determined that using battery storage to replace duct burners could be rejected as BACT under Step 2 (technical feasibility), Step 3 (effectiveness rank), and Step 4

⁶ Although the heading for that argument in the Conservation Groups’ comment letter referred only to BACT for NO_x and CO emissions, the Groups assert in the body of the comment that “[b]atteries would reduce both CO and NO_x as well as GHG” emissions. Comment Letter at 4.

(the energy, environmental, and economic impacts of the options).⁷ Response to Comments at 16-18. Before the Board, the Conservation Groups challenge the Region's determination on each of those three steps of the BACT analysis.

As set forth below, the Board concludes that the Conservation Groups fail to demonstrate that the Region clearly erred or that review is otherwise warranted when the Region rejected the Groups' proposal under BACT Step 2 (technical feasibility). Because the Board concludes that the Conservation Groups fail to carry their burden as to the Region's rejection of the Groups' proposal at Step 2 of the BACT analysis, the Board need not, and does not, address whether the Groups' carry their burden as to the Region's Step 3 and Step 4 BACT analysis of the Groups' proposal. *See In re Cardinal FG Co.*, 12 E.A.D. 153, 168 & n.12 (EAB 2005) (declining to reach BACT Step 4 issues after denying review at Step 2); *see also* Oral Arg. Tr. at 19-21 (counsel for Conservation Groups agreeing that, if Board concludes that Groups' arguments as to any step of BACT analysis fail, petition for review must be denied). The Board therefore denies review on this issue.

2. *The Conservation Groups Fail to Demonstrate Clear Error or That Review Is Otherwise Warranted with Respect to the Region's Rejection of Replacing Duct Burners with Batteries Under BACT Step 2, Technical Feasibility*

The question of a control technology's "technical feasibility" under Step 2 of the BACT analysis typically entails first determining whether the technology in question has been "demonstrated." *NSR Manual*, at B.17. A control technology is generally considered "demonstrated" if it "has been installed and operated successfully on the type of source under review." *Id.* If "demonstrated," then the control technology "is technically feasible." *Id.* If not "demonstrated," then the inquiry turns to whether the technology is "available" and "applicable." *Id.* A technology is considered "available" if "it can be obtained by the applicant through commercial channels or is otherwise available within the common sense meaning of the term." *Id.* An "available" technology is considered "applicable" if "it can

⁷ It is common ground among the parties that the Region made no determination whether the Conservation Groups' proposal would impermissibly "redefine the source" under BACT Step 1. Oral Arg. Tr. at 23-24 (counsel for Conservation Groups), 31-32 (counsel for Region); *cf. In re Ariz. Pub. Servs. Co.*, 17 E.A.D. 324, 335-37 (EAB 2016) (explaining "redefining the source" legal principles).

reasonably be installed and operated on the source type under consideration.” *Id.* The NSR Manual further explains that “[a] source would not be required to experience extended time delays or resource penalties to allow research to be conducted on a new technique. Neither is it expected that an applicant would be required to experience extended trials to learn how to apply a technology on a totally new and dissimilar source type.” *Id.* at B.18. If a technology “is available and applicable [it] is technically feasible.” *Id.* at B.17.

In response to the Conservation Groups’ comment that BACT limits for certain emissions should be achieved by replacing the duct burners with battery storage, the Region explained that it was unaware of the Groups’ proposed design being applied on any source similar to the PEP facility. Response to Comments at 16. The Region also noted that the Conservation Groups had not provided any examples suggesting that the Groups’ proposal had been applied to any similar source. *Id.* Thus, the Region concluded that “using battery storage in lieu of duct burners” as the Conservation Groups proposed in their comment letter “has not been demonstrated to be technically feasible.” *Id.*; *see also* Oral Arg. Tr. at 11 (counsel for Conservation Groups acknowledging that he could identify no other combined-cycle plant using batteries to replace duct burners).

In their petition for review, the Conservation Groups do not explicitly challenge the Region’s determination that the Groups’ proposed configuration of replacing the duct burners in a combined-cycle natural-gas power plant with battery storage has not been “demonstrated.” Instead, the Groups contend their proposal is technically feasible based on the concept of “technology transfer” – that batteries have been used at sources similar to (yet different from) the PEP facility and that battery technology can be transferred to the PEP facility to replace the duct burners. Pet. at 27-31; *see NSR Manual*, at B.19 (discussing technology transfer); *Cardinal FG*, 12 E.A.D. at 164 (same).

The Region addressed that in its response to comments by first pointing out the energy production that the duct burners may provide. Response to Comments at 16. Specifically, the duct burners add approximately 52 megawatts (“MW”) to the PEP facility’s nominal output of 645 MW. *Id.* Under the permit, each duct burner at the PEP facility is limited to using the amount of fuel equivalent to 1500 hours of operation each year, with Palmdale controlling when to use those 1500 hours. *Id.*; *see also* Final Permit ¶ 21, at 7. Thus, considering the fuel use limitation for each duct burner, the PEP facility would produce approximately 78,000 megawatt-hours (“MWh”) per year for both duct burners (that is, 52 MW times 1500 hours equals 78,000 MWh). Response to Comments at 16.

The Region then turned to analyzing the power the largest battery configuration that the Conservation Groups had identified in their comments – a Tesla 100 MW lithium-ion battery storage facility for an Australian wind farm – could provide. *Id.* at 16 & n.11; *see also* Comment Letter at 4. The Region noted that the information available on the Tesla battery storage facility identified the facility as capable of providing 129 MWh at a time. Response to Comments at 16. That would mean, the Region explained, that the Tesla battery storage facility could provide the maximum amount of peak energy the duct burners here could provide (52 MW) for only about 2.5 hours before running out of energy and needing to be recharged. *Id.* The Region reasoned that such a result “would be extremely limiting” on the PEP facility because the PEP facility “otherwise could access 78,000 MWh per year from duct burners.” *Id.* The Region also noted that the Tesla example “is not likely to work for a load-following facility” such as the PEP facility, because it “may need to ramp up and down multiple times per day and provide additional power for more than 2.5 hours at a time.” *Id.* On the latter point, the Region noted that the evening peak energy demand relevant to the PEP facility can typically last about four hours.⁸ *Id.* at 16 n.12. Thus, according to the Region, when the PEP facility is operating to provide power at peak energy demand, the duct burners could supply 52 MW for that peak demand period whereas the Tesla battery facility would not be able to; the Tesla battery facility would be able to supply power for only 2.5 hours and then need to be recharged.⁹

Before the Board, the Conservation Groups argue that the Region’s analysis is clearly erroneous because battery systems that can provide four hours of power,

⁸ The Conservation Groups maintain that the source cited by the Region for the four-hour peak demand actually shows a three-hour peak demand. Pet. at 29 n.7. The Board need not resolve that question because the Groups do not contest the Region’s conclusion that the Tesla battery facility would be able to supply power for only 2.5 hours. Thus, regardless of whether the peak demand period lasts three or four hours, the Tesla battery facility would run out of energy and need to be recharged before the end of that period.

⁹ The Conservation Groups seem to admit that, even with the permit term limiting each duct burner at the PEP facility to using an amount of fuel equivalent to 1500 hours of operation each year, the duct burners would be able to supply 52 MW for approximately four hours per day. *See* Pet. at 29 n.7.

like the duct burners, do, in fact, exist. In support, the Groups point to examples of battery systems in the administrative record that the Groups say would offer the requisite four hours of energy storage to meet peak demand. Pet. at 20, 28-31 (referencing documents presented in Fact Sheet app. 3, “Summary of Battery Storage Literature Review”). Even accepting that proposition as true, the Board concludes that the Groups do not carry their burden of demonstrating that the Region’s analysis is clearly erroneous or otherwise warrants review.

First, none of the examples identified by the Conservation Groups use batteries in the fashion the Groups advocate for here – to replace duct burners on a combined-cycle generating system. *See id*; Fact Sheet app. 3, arts. 1, 7, 9. Second, at best the battery systems identified by the Conservation Groups show that viable battery systems exist that will supply power for the length of time of Palmdale’s peak demand. That fact alone, however, does not show that batteries can replace duct burners at the PEP facility because the purposes and functions of the duct burners are not limited to providing energy during peak demand times. The PEP facility is “intended to provide flexible capacity to the [California Independent Systems Operator], thus the [facility’s] actual dispatch profile must adapt to market conditions, which will result in different operational scenarios at different times.” Fact Sheet § 3.3, at 6. The PEP facility therefore may act like a “peaking” or “baseload” plant or “on an intermediate basis” in order “to meet the shifting demands of the electric grid.” *Id.*; *see also id.* § 3.4, at 7 (noting that PEP facility “is considered a load-following power plant”).

The duct burners fire natural gas to increase steam output from the heat recovery system generators to provide a boost of energy production when needed. And a boost of energy production may be required to meet any number of needs of the electrical grid, not just meeting peak demand. As the Region explained, for battery technology to replace the duct burners “to be reasonably feasible, the technology would need to be able to provide multiple ramps within a short period of time, for a sufficient duration, in order to meet the load-following needs of the grid.”¹⁰ Response to Comments at 18. While the Region acknowledged that some

¹⁰ In one sentence of the Fact Sheet, the Region states that the PEP facility “will be equipped with duct burners firing natural gas to increase steam output from the [heat recovery system generators] during periods of peak energy demand.” Fact Sheet § 3.3, at 5. That sentence does not mean that duct burners will be used *only* during overall peak energy demand. There is nothing in the permit or the design of the PEP facility that limits Palmdale’s use of the duct burners to only meeting overall peak energy demand. When that sentence is read considering that the Region “based” its BACT analysis “on the worst-

battery configuration may exist “that could theoretically accomplish” those multiple ramps, such a design “has not been demonstrated in practice.” *Id.* Significantly, evidence in the record suggests that, under the current state of battery technology, “frequent charging and discharging is hard on [battery] cells and causes them to age more quickly,” and that batteries subjected to that “high stress” have “the most frequent incidence of fires.” Fact Sheet app. 3, art. 5 (Todd Kiefer, *CAISO Battery Storage Trial*, T&D World, The Grid Optimization Blog ¶ 3 (Nov. 21, 2016), available at <http://www.tdworld.com/blog/caiso-battery-storage-trial>) (A.R. 7.60). Thus, the Conservation Groups’ reliance on examples of battery systems in the administrative record that may be able to supply electricity for the duration of peak demand fails to establish that the Region clearly erred in determining that replacing duct burners with battery storage has not been shown to be technically feasible here.¹¹

The Conservation Groups also assert that the type of “technology transfer” they are advocating may be excluded under Step 2 of the BACT analysis only based on “differences in chemical or physical characteristics,” and the Region clearly erred because the Region failed to identify any such differences. Pet. at 31; *see also* Oral Arg. Tr. at 12-13 (counsel for Conservation Groups arguing that “when you’re looking at technology transfer, it’s incumbent on the agency or the permittee

case operating conditions” and the entirety of the record, it seems clear (as confirmed by the Region in its brief and at oral argument) that the duct burners are designed, and may be used, to provide a boost of electricity output from the PEP facility during the highest demand for the facility to meet the shifting needs of the electric grid, not solely during overall peak demand. *See, e.g.*, Fact Sheet §§ 3.3, 7.5.4, at 6, 74; Response to Comments at 16-18; R9 Resp. at 8 n.10 (“Duct burners are an economical method to produce additional steam for the heat recovery steam generator of a combined cycle unit during highest demand for the facility, but not necessarily only during the overall peak of energy demand from the grid.”); Oral Arg. Tr. at 34 (counsel for Region explaining that “duct burners allow you to not have to upsize your turbine when you only anticipate needing that extra little energy part of the time.”), 57-58 (counsel for Region explaining that duct burners may be used “to provide quick additional energy” and to provide a “quick jump-up” in energy production).

¹¹ Given the Board’s conclusion on this issue, the Board need not resolve the Region’s suggestion that the Conservation Groups cannot rely on the battery examples identified in their petition that were not included in their comment letter. *See* R9 Resp. at 8-9.

to identify any physical or chemical differences that would prohibit or at least challenge a technology transfer”). The Board disagrees.

The NSR Manual states that “decisions about technical feasibility are within the purview of the review authority.” *NSR Manual*, at B.19. It then provides that “a presumption of technical feasibility *may* be made by the review authority based solely on technology transfer.” *Id.* (emphasis added). The Manual then states, “For example, in the case of add-on controls, decisions of this type would be made by comparing the physical and chemical characteristics of the exhaust gas stream from the unit under review to those of the unit from which the technology is to be transferred.” *Id.* The Board finds the Conservation Groups misconstrued the nature of a permissive presumption and their focus on that and a single “example” directed at “add-on controls” is misplaced.¹²

Elsewhere, the NSR Manual makes clear that a permitting authority is not limited to chemical and physical characteristics in making a technical feasibility determination. For example, the Manual states, “[A] showing of unresolvable technical difficulty with applying the control would constitute a showing of technical infeasibility (e.g., size of the unit, location of the proposed site, and operating problems related to specific circumstances of the source).” *Id.* The Manual also provides that “[a] demonstration of technical infeasibility is based on a technical assessment considering physical, chemical, and engineering principles and/or empirical data showing that the technology would not work on the emissions unit under review, or *that unresolvable technical difficulties would preclude the successful deployment of the technique.*” *Id.* at B.20 (emphasis added). Given that language in the NSR Manual, and the non-binding nature of the NSR Manual, the Board concludes that the Conservation Groups’ argument regarding the need to identify differences in chemical or physical characteristics fails to establish that the Region’s analysis here is clearly erroneous or otherwise warrants review.

¹² “[A]dd-on controls” in this context are generally understood to be “devices that control and reduce emissions after they are produced.” *NSR Manual*, at B.10. It is far from clear whether the Conservation Groups’ proposal of replacing the duct burners with batteries is properly characterized as an “add-on control.” *See id.* (describing “inherently lower-emitting processes/practices” as “including the use of materials and production processes and work practices that prevent emissions and result in lower ‘production-specific’ emissions”).

Finally, at oral argument, while counsel for the Conservation Groups acknowledged that the Region performed “some” BACT analysis in the response to comments, counsel asserted that the Region should have done a “wholly new BACT analysis.” Oral Arg. Tr. at 20 (counsel for Conservation Groups stating, “Obviously, there’s some analysis performed in response to comments, but a wholly new BACT analysis should be subject to public comment. That’s not what happened here.”). The Board again disagrees.

The Conservation Groups’ letter submitted during the public comment period argued that the Region should consider a unique, never-before-developed configuration as BACT for a combined-cycle plant. Under the relevant regulations, the Region is to “[b]riefly describe and respond to all significant comments on the draft permit * * * raised during the public comment period, or during any hearing.” 40 C.F.R. § 124.17(a)(2); *id.* § 52.21(q) (requiring agency to follow applicable procedures of 40 C.F.R. part 124 in processing PSD permits); *see also In re FutureGen Indus. All., Inc.*, 16 E.A.D. 717, 754 (EAB 2015) (holding that “the depth of a permit issuer’s response need only be commensurate with the depth of the comments provided”); *cf. In re Prairie State Generating Co.*, 13 E.A.D. 1, 33 (EAB 2006) (noting that, under CAA PSD provisions, “the permit issuer does not have an independent duty to investigate alternatives raised in public comments” and “permit issuer is only required to consider the analysis submitted during the public comment period, and it may engage in additional analysis as it sees fit, provided that the permit issuer’s response to comments is sufficient to demonstrate that all significant comments were considered”) (internal quotation marks and citation omitted), *aff’d sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007). That is what the Region did here and, as explained above, the Board finds that the Groups have failed to demonstrate any clear error by the Region or that review is otherwise warranted. While there may be circumstances where it is appropriate for a permitting authority to supplement the original BACT analysis beyond whatever was done in the response to comments and provide an opportunity for public comment, *see, e.g., In re Pio Pico Energy Ctr.*, 16 E.A.D. 56, 150 (EAB 2013), in the circumstances of this case, the Conservation Groups have failed to provide the Board with any basis to conclude that the Region here must further supplement its BACT analysis.

In sum, the Board concludes that the Conservation Groups fail to meet their burden of establishing that the Region’s analysis is clearly erroneous or otherwise warrants review. 40 C.F.R. § 124.19(a)(4); *see also In re Footprint Power Salem Harbor Dev., LP*, 16 E.A.D. 546, 555 (EAB 2014) (“Petitioners’ challenge to [the

permit issuer'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"). The Board therefore denies the Groups' petition for review on the BACT issues. The Board observes that its decision is based on the record in this matter and its decision should not be taken to suggest that the Conservation Groups' proposal can never be BACT for a particular facility. As the Board noted above, BACT is an emission limit that is based on a "case-by-case" analysis, *see* Fact Sheet § 3.4, at 7 ("PSD permits are issued on a case-by-case basis"), and the Region recognizes that "[e]nergy storage technology is a rapidly growing development in the electrical power supply sector," Response to Comments at 28. Thus, what may not be BACT for purposes of this permit application may be BACT for a future permit application.

B. *Air Quality Analysis Issues*

As noted in Part III above, and as relevant to the Conservation Groups' arguments before the Board, the Clean Air Act and implementing regulations require PSD permit applicants to demonstrate that emissions from their proposed projects will not cause or contribute to violations of applicable NAAQS. CAA § 165(a)(3), 42 U.S.C. § 7475(a)(3); 40 C.F.R. § 52.21(k). Applicants conduct preliminary ambient air quality analyses by modeling their project-only impacts and then, if the project-only impacts are expected to be significant, by evaluating cumulative impacts that encompass background pollutant concentrations, project-only emissions, and emissions from nearby sources. *See* GAQM § 9.2.3(a)(i)-(ii), (b)-(d) (2017); GAQM §§ 8.2.3, 10.2.1(b) (2005); *NSR Manual*, at C.24-.25.

Palmdale began by defining a network of air quality modeling receptors¹³ in a circular pattern around the PEP facility site, out to a distance of ten or twenty kilometers from the center of the site. Response to Comments at 55; *see* Fact Sheet § 7.5.3, at 73-74; Permit Appl. § 6.4, at 6.4-1 & 6.5-10 to -11 figs.6-2 to 6-3. Palmdale then conducted a preliminary air quality analysis, which the Region reviewed and verified. The modeling analysis showed that impacts from the PEP facility alone exceeded "Significant Impact Levels," or "SILs," for NO₂ emissions averaged over one hour, PM₁₀ emissions averaged over twenty-four hours, and PM_{2.5} emissions averaged over twenty-four hours and annually. Fact Sheet § 7.3.3.1, at 57 tbl.24; *see NSR Manual*, at C.28 tbl.C-4 (listing SILs). Palmdale

¹³ "Receptors" are "spatial locations at which to estimate pollutant concentrations." Fact Sheet § 7.2, at 49 n.77; *see NSR Manual*, at C.39-.42.

therefore conducted cumulative impacts analyses for those pollutants and averaging times, and the Region reviewed and verified Palmdale's analyses. *See* Fact Sheet § 7.3.3, at 51-52, § 7.3.3.1, at 57 & tbl.24, § 7.3.4, at 58 & tbl.25. Palmdale did not conduct, and the Region did not require, cumulative impacts analyses for CO or annual NO₂, as the PEP-only modeled impacts for these pollutants fell below the SILs. *See id.* § 7.3.3.1, at 52, 57 tbl.24.

In the cumulative analyses for one-hour NO₂, PM₁₀, and PM_{2.5}, Palmdale modeled emissions impacts from its facility alone, combined with background concentrations and emissions from nearby sources. Palmdale chose the Lancaster-Division Street monitoring station, 2.5 miles away from the PEP facility in the City of Lancaster, to represent background ambient air pollution concentrations at PEP. *Id.* § 7.3.2, at 51. The Region approved use of that monitor, noting that it was the "nearest station available." *Id.* Palmdale then determined that "nearby sources" consisted of stationary sources on the U.S. Air Force's Plant 42, which is used for the development, manufacturing, and testing of high-performance military aircraft. *Id.* § 7.4.2.2, at 67; *see* Cal. Energy Comm'n, *Air Force Plant 42 Air Installation Compatible Use Zone Study* § 2.4, at 2-7 (Feb. 17, 2017) (A.R. 12.26) ("AICUZ Study"). The defense contractors Boeing, Lockheed-Martin, and Northrup-Grumman operate eight separate production facilities on Plant 42. *See* Permit Appl. at 7.6-8 fig.7-6; Fact Sheet § 3.1, at 4 fig.2, § 7.3.3.1, at 53 fig.4; Response to Comments at 54-55. Palmdale Regional Airport, which purportedly has not had commercial operations since 2008, Response to Comments at 55 n.57, is also located on Plant 42 and is used by the U.S. Air Force and defense contractors for flight testing. *See* Fact Sheet § 7.4.2.2, at 66-67; Response to Comments at 54-55. Neither Palmdale nor the Region specifically modeled aircraft emissions from takeoffs and landings at the airport as "nearby sources." Instead, the Region determined that such emissions were sufficiently represented in the ambient background concentrations measured at the Lancaster-Division Street monitor. *See* Fact Sheet § 7.4.2.2, at 66-67.

In discussing the geographic locations selected as air quality modeling receptor sites, the Region explained that "[r]eceptors need be placed only in ambient air, that is, locations 'external to buildings, to which the general public has access' (e.g., not inside the project fence line)." *Id.* § 7.5.3, at 73 (quoting 40 C.F.R. § 50.1(e) (definition of "ambient air")). The Region explained further:

Concentrations within the PEP fence line were not calculated as it is not considered ambient air. Similarly, impacts from USAF Plant 42 sources were not calculated for locations inside the Plant 42 fence

line in the NO₂ and PM₁₀/PM_{2.5} cumulative impact analyses. However, PEP's predicted impacts on all areas outside the PEP fence line, including within the Plant 42 fence line, were modeled by [Palmdale].

Id. § 7.5.3, at 74.¹⁴ The Region also explained in footnote 99 that it had “conducted an additional analysis that included impacts from USAF Plant 42 sources inside the Plant 42 fence line for the 1-hr NO₂ standard. The maximum impact was 175 µg/m³. A map of the impacts is shown in Appendix 6.” *Id.* § 7.5.3, at 74 n.99. Appendix 6 to the Fact Sheet shows that the highest impacts – which at 175 µg/m³ are below the NAAQS – are centered over the eastern half of the Northrup Grumman facility and near the eastern portions of the runways on Plant 42. *Id.* app. 6.

On appeal, the Conservation Groups contend that the Region clearly erred in evaluating the cumulative impacts of PEP's one-hour NO₂ emissions.¹⁵ Specifically, the Groups claim that the Region failed to consider in PEP's one-hour NO₂ cumulative analysis: (a) Plant 42 aircraft emissions impacts on the atmosphere *outside* Plant 42 boundaries, Pet. at 52-53; and (b) Plant 42 stationary source and aircraft emissions impacts on the atmosphere *within* Plant 42 boundaries, *id.* at 48-52. Finally, the Groups argue that the Region clearly erred by failing to require cumulative impacts analyses for one-hour and eight-hour CO and annual NO₂

¹⁴ The Region's explanation is consistent with how Palmdale described its modeling approach in its application:

Concentrations within the [PEP] facility fenceline [sic] were not calculated. Neither were impacts calculated for locations inside the Plant 42 fenceline [sic] in the NO₂ and PM₁₀/PM_{2.5} cumulative impact analyses which includes sources at the Lockheed-Martin, Northrup-Grumman, and Boeing facilities inside Plant 42 (Plant 42 is not open for public access).

Permit Appl. § 6.4, at 6.4-1 to -2.

¹⁵ The Conservation Groups' petition states that it is challenging the “cumulative 1-hour NO_x NAAQS analysis.” Pet. at 48. The Board understands the Groups to, in fact, be challenging the Region's analysis of cumulative 1-hour NO₂, not NO_x, as NO₂ is the pollutant with an identified NAAQS. Fact Sheet § 7.3.2, at 51 tbl.23. Indeed, the applicable NAAQS that the Groups cite – 188 µg/m³ – is for cumulative 1-hour NO₂. Compare Pet. at 43 with Fact Sheet § 7.3.2, at 51 tbl.23.

emissions. *Id.* at 53-59. For the reasons that follow, the Board denies review on those issues.

1. *The Conservation Groups Fail to Demonstrate That Review of the Region's Cumulative Impacts Analysis for One-Hour NO₂ Emissions Is Warranted*
 - a. *The Conservation Groups Fail to Demonstrate Clear Error or Other Basis for Review of the Region's Treatment of Plant 42 Aircraft Emissions Outside Plant 42 Boundaries*

The Conservation Groups contend that the Region's cumulative impacts analysis for the PEP facility is erroneous because the analysis failed to include a nearby emissions source – namely, military aircraft, such as the B-2 Bomber, flying in and out of Plant 42. *Pet.* at 52-53. The Groups challenge the Region's conclusion that the emissions measured at the Lancaster-Division Street monitoring station “conservatively represent background levels and the potential impacts from sources near the PEP [facility], including * * * aircraft emissions.” *Response to Comments* at 60; *see also id.* at 58; *Fact Sheet* § 7.4.2.2, at 66-67. The Groups claim that the Region's conclusion is a “post hoc,” “non-modeling,” “qualitative” analysis, where the PSD regulations require actual modeling of aircraft emissions. *Pet.* at 52; *Reply* at 21 (citing 40 C.F.R. § 52.21(l)(1), which states that “[a]ll estimates of ambient concentrations * * * shall be based on applicable air quality models, data bases, and other requirements specified in appendix W of part 51 of this chapter (Guideline on Air Quality Models)"); *see Oral Arg. Tr.* at 28-29, 70-72. The Conservation Groups also claim that the Region erred by considering “irrelevant factors,” such as prevailing winds and takeoff and landing directions, *Pet.* at 53, and by concluding that most aircraft emissions would occur “well within the Plant 42 boundary.” *Response to Comments* at 61 (cited in *Pet.* at 53). The Board disagrees.

The Region noted that the Lancaster-Division Street monitor is only 2.5 miles from the PEP facility and is near a highway, a roadway with commuter traffic, and a railway, each of which is located less than less than 150 meters from the monitor's location. *Response to Comments* at 60. The Region explained that, as a result, this monitoring station is significantly affected by mobile sources because impacts from such sources are highest within 150-180 meters of roadways, highways, and railways. *See id.* Moreover, mobile source emissions occur near ground level, as compared to stationary sources whose stacks emit contaminants higher off the ground, and therefore mobile sources result in higher impacts on ground level concentrations of pollutants. *Id.* By contrast, the PEP facility will

occupy what are now open desert lands, which are not located near any major roadways, and no stationary sources are present within 150-180 meters of the PEP facility's boundary. *Id.*; Permit Appl. § 2.1, at 2-5. Thus, the Region concluded, the Lancaster-Division Street monitoring station "is considered to very conservatively represent background concentrations near the PEP [facility]." Response to Comments at 60.

The Region then explained why the "very conservative[]" Lancaster-Division Street monitoring station adequately accounted for the potential impacts from aircraft emissions. The Region first observed that, "in general, emissions from aircraft using an airport runway predominantly occur during landing and takeoff operations." *Id.* at 60-61. In addition, the impacts from emissions during landing and takeoff operations decline rapidly because the concentrations of emissions drop off steeply as distance from the runway increases. *Id.* at 61. The Region cited a study conducted at Los Angeles International Airport that showed rapid declines in ultrafine particulate matter levels within short distances (500 meters or less) of runway edges, demonstrating that aircraft emissions do not travel far. *Id.* at 61 & n.69; Oral Arg. Tr. at 70.

The Region also noted that Plant 42 runways are not "particularly busy," and, due to prevailing winds from the southwest, the highest emissions impacts occur in the northeastern part of Plant 42, and not to the west/northwest near the PEP facility boundary where the maximum impacts from the PEP facility will occur. Response to Comments at 60-61. The Region also considered studies showing that emissions from large commercial airports with far greater air traffic than Plant 42 affect air quality less than motor vehicles on nearby roadways. *Id.* at 61 n.73. Thus, the Region concluded that the highest impacts from potential aircraft emissions "would not coincide with the maximum impacts from the PEP [facility]." *Id.* at 61.

In short, the Region investigated this issue and provided a series of technical justifications for its determinations that: (1) Plant 42 aircraft emissions did not need to be separately modeled, and (2) the Lancaster-Division Street monitor reasonably could serve as a conservative (and thus more protective) estimate of aircraft emissions. The Conservation Groups do not meaningfully confront the Region's analysis, instead expressing their general disagreement with the Region's technical judgments. In failing to do so, the Groups fail to carry their burden of demonstrating that the Region clearly erred or that review is otherwise warranted. *See, e.g., In re Windfall Oil & Gas, Inc.*, 16 E.A.D. 769, 797-98 (EAB 2015) (denying review where petitioners failed to substantively confront permit issuer's

responses to comments or adequately explain why permit issuer's responses were clearly erroneous or otherwise warranted review); *In re City of Palmdale*, 15 E.A.D. 700, 722-24 (EAB 2012) (denying review where petitioner failed to confront responses to comments regarding use of algae ponds as a potential control technology for GHGs). "Confronting a permit issuer's explanation is particularly important in technical matters [such as this], where the Board defers to the technical expertise of the permit issuer." *Id.* at 723. The Groups fail to provide a basis for the Board to set aside its traditional deference to the permit issuer on these technical matters. *See, e.g., In re Footprint Power Salem Harbor Dev., LP*, 16 E.A.D. 546, 576-78 (EAB 2014) (deferring to permit issuer's technical expertise on air quality modeling issue).

Finally, with respect to the Conservation Groups' argument that the PSD regulations require modeling of the aircraft emissions, the GAQM provides that all sources expected to produce "significant concentration gradients" in the vicinity of the proposed source must be explicitly modeled. GAQM §§ 8.3.1(i), 8.3.3(b) (2017); GAQM § 8.2.3(b) (2005); *see* Memorandum from Tyler Fox, Air Quality Modeling Grp., U.S. EPA, to Reg'l Air Div. Dirs., *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the One-Hour NO₂ [NAAQS]* 15-16 (Mar. 1, 2011) ("*One-Hour NO₂ Guidance*") (explaining significant concentration gradient criterion and noting that "large number of variables" are involved in assessing significance). Other sources that do not produce significant gradients may be modeled or otherwise approximated in the background ambient concentrations. *See* GAQM § 8.3.3(d) (2017); GAQM § 8.2.3(f) (2005). Based on the analysis discussed above, the Region determined that aircraft emissions would not have "a significant concentration gradient in the area of modeled impacts from the PEP outside the PEP and Plant 42 boundaries." Response to Comments at 61. Given that conclusion by the Region, which the Conservation Groups fail to demonstrate is clearly erroneous, the Region was not required to specifically model aircraft emissions under the applicable regulations. The Board therefore denies review on this issue.

b. *The Conservation Groups Fail to Demonstrate Any Basis for Review of the Region's Treatment of Plant 42 Aircraft Emissions Within Plant 42 Boundaries*

In comments on the draft permit, the Conservation Groups stated that Figures 8, 9, and 10 in the Fact Sheet (depicting cumulative impacts for NO₂, PM₁₀, and PM_{2.5}, respectively) appeared to indicate that modeling receptors within Plant 42 were *not* included in the cumulative impacts modeling. Comment Letter at 15. Figure 11 (twenty-four-hour PM_{2.5}), however, did include receptors inside

Plant 42.¹⁶ *Id.* The Groups commented that “[t]he Fact Sheet does not provide a basis for the decision to exclude receptors inside Plant 42 for some of the modeling. Nor does it provide a reference to the administrative record in support of this decision. PEP does not own Plant 42 and therefore Plant 42 is ambient air which must have receptors in it for all of the modeling.” *Id.* at 15-16.

In response, the Region explained that, though modeling receptors were included in all areas outside the PEP fence line out to 10 or 20 kilometers, the cumulative impacts modeling “did not include Plant 42 receptors because: (1) the Applicant did not need to model Plant 42’s impacts within Plant 42’s own fenceline [sic], (2) there were no additional nearby sources outside Plant 42 that required modeling, and (3) the PEP’s impacts within the Plant 42 fenceline [sic] had already been modeled in the Project-only analysis.” Response to Comments at 55. The Region noted that its treatment of modeling receptors within Plant 42 was affected by the fact that Plant 42 is closed to public access. *Id.* at 56. The Region explained:

EPA’s general policy is that the atmosphere over land owned or controlled by a source and to which public access is precluded by a fence or other physical barriers is not considered ‘ambient air’ for PSD modeling purposes *for that source*. Thus, based on the regulatory definition of ‘ambient air,’ and the EPA’s policy, we consider the air outside the PEP’s boundaries, including within Plant 42, to be ambient air with respect to the PEP and its emissions sources. Similarly, we consider the air outside the Plant 42 boundaries to be ambient air with respect to emissions sources located within Plant 42. But we consider the air within Plant 42 not to be ambient air with respect to Plant 42 emissions sources because Plant 42 is also closed to public access.

Id. (footnotes omitted and emphasis added).

In their petition for review, the Conservation Groups contend that the Region erred because the atmosphere over Plant 42 is ambient air due to the fact that Plant 42 is open to the public. Pet. at 48. The Groups claim that public information compiled by the “FlightAware” website shows that civilian aircraft (a

¹⁶ In its response to comments, the Region acknowledged that Figure 11 “inadvertently included the Plant 42 portion of the [PEP]-only modeling results along with the results of the cumulative impacts analysis for the area outside of Plant 42.” Response to Comments at 57.

Cessna C172) landed and took off from Palmdale Regional Airport as recently as May 28, 2018. Pet. at 48-49 (citing screen shot from www.flightaware.com). They also point out that the Region explicitly acknowledged, in its response to comments, that “transient aircraft” can use the runway. *Id.* at 49; *see* Response to Comments at 61 n.72 (noting that Air Force estimates that about fifteen flight operations occur per day at Plant 42, including Plant 42 aircraft and “other transient aircraft * * * may use the runways”). The Groups contend that, under EPA guidance, air above areas that provide transportation to the public, such as roadways, is “‘clearly ambient air’ and must be modeled.” Pet. at 50 (quoting G.T. Helms, Chief, Control Programs Ops. Branch, Office of Air Quality Planning & Standards, U.S. EPA, to Steve Rothblatt, Chief, Region 5 Air Branch, U.S. EPA 1 (Apr. 30, 1987) (“1987 Helms Memo”). Moreover, the Groups contend, “EPA has said that even if there is ‘only [sic] a very remote possibility that the public would attempt to use [a] property[,]’ it should be considered ambient air.” *Id.* (quoting 1987 Helms Memo at 1).

Further, the Conservation Groups argue that, irrespective of whether Plant 42 is open to the public or not, the Region still erred. The Groups contend that the Region failed to evaluate “at least four separate facilities” (the airport and the Lockheed-Martin, Northrup-Grumman, and Boeing facilities) at Plant 42 in accordance with EPA guidance that interprets the meaning of “ambient air” in “Government-Owned, Contractor-Operated” (“GOCO”) leased land situations. *Id.* at 50-52 (citing Response to Comments at 54); *see* Memorandum from Stephen D. Page, Dir., Office of Air Quality Planning & Standards, U.S. EPA, to Reg’l Air Div. Dirs., Regions 1-10, U.S. EPA (June 22, 2007) (Pet. ex. 7).

In response, the Region argues that its interpretation of “ambient air” is consistent with EPA’s longstanding construction and application of the term. R9 Resp. at 25 (citing *In re Hibbing Taconite*, 2 E.A.D. 838 (Adm’r 1989); 1987 Helms Memo; Memorandum from Robert D. Bauman, Chief, SO₂/PM Programs Branch, Office of Air Quality Planning & Standards, U.S. EPA, to Gerald Fontenot, Chief, Region 6 Air Programs Branch, U.S. EPA (Oct. 17, 1989) (“1989 Bauman Memo”). The Region contends that the Groups have failed to demonstrate that it was clear error for the Region to continue to follow that approach for the PEP permit. R9 Resp. at 25.

The Region explains that, in *Hibbing Taconite*, EPA “Administrator Costle articulated, and Administrator Reilly affirmed, that an area closed to public access

may be excluded from ambient air.”¹⁷ *Id.* Moreover, in the 1987 Helms Memo, EPA stated that receptors should be placed over a neighboring stationary source’s property “to measure the contribution of the outside source to its neighbor’s ambient air.” *Id.* (quoting 1987 Helms Memo at 2). The Region claims further that, in the 1989 Bauman Memo, EPA identified a “corollary” to the 1987 Helms Memo principle: “[W]here a receptor is located on Plant B’s [a neighbor’s] nonambient air property, the contribution from [P]lant B (only) may be subtracted from the total contribution.” *Id.* (quoting 1989 Bauman Memo at 1).

The Region also contends that the Conservation Groups’ arguments on this point were reasonably ascertainable during the public comment period but were not raised then and so are not preserved for review on appeal. *Id.* at 26-27. The Region argues further that, even if considered, these arguments are too speculative to demonstrate clear error. *Id.* at 27-29. According to the Region, it reasonably assumed that the term “transient” aircraft refers to “flights related to and in support of Plant 42 operations,” not random civilian aircraft as the Conservation Groups suggest. *Id.* at 28. Moreover, California’s Air Installation Compatible Use Zone (“AICUZ”) study states:

The mix of transient aircraft using Plant 42 can and does change from year to year. Transient aircraft generally fall into one of three categories: VIP transport (light business turboprop aircraft, such as the Gulfstream G-3 and Beechcraft C-12 *Huron*), heavy airlift (including cargo aircraft such as the C-130J *Hercules*), or fighter aircraft based elsewhere that are temporarily visiting Plant 42 or using it as an emergency divert field (e.g., F-16 *Fighting Falcon* and F-22 *Raptor*).

AICUZ Study § 2.6, at 2-12. In addition, the Region notes that the Conservation Groups’ FlightAware data do not identify the aircraft, its passengers, or the

¹⁷ In *Hibbing Taconite*, Administrator Reilly remanded a PSD permit in part because the record contained photographs showing three or four areas where physical barriers, natural or manmade, did not exist around a 14,000-acre facility perimeter, rendering those areas possibly open to the public and the air therefore possibly “ambient.” 2 E.A.D. at 848-49. The Administrator directed the permit issuer (the Minnesota Pollution Control Agency) to reconsider whether public access was “effectively precluded” in those areas. The decision cites a 1972 Office of General Counsel memorandum that interpreted “access” in 40 C.F.R. § 50.1(e) to mean “ability to enter.” *Id.* at 848 & n.25.

circumstances under which the aircraft used Plant 42 runways on May 28, 2018. R9 Resp. at 28. Finally, the Region contends that the Groups' arguments about "control relationships between various entities operating out of Plant 42 are also based on speculation." *Id.* at 29. "They do not clearly demonstrate that it was erroneous for the Region to treat Plant 42 as one government-owned facility with several defense contractors operating on it and that it is closed to public access, for purposes of the air quality analysis for the PEP." *Id.*

The Board agrees with the Region that the Conservation Groups have failed to demonstrate that their arguments – namely, that the atmosphere over Plant 42 is ambient air because Plant 42 is open to the public, and that the Region acted contrary to EPA guidance in interpreting the meaning of "ambient air" in GOCO-leased land situations – are preserved for Board review.

A petitioner before the Board must demonstrate in its petition, among other things, "that each issue being raised in the petition was raised during the public comment period (including any public hearing)." 40 C.F.R. § 124.19(a)(4)(ii); *see also id.* § 124.13 ("All persons, including applicants, who believe any condition of a draft permit is inappropriate * * * must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing) under § 124.10"). As the Board has explained on numerous occasions, that regulation "is not an arbitrary hurdle, placed in the path of potential petitioners simply to make the process of review more difficult." *In re BP Cherry Point*, 12 E.A.D. 209, 219 (EAB 2005); *accord In re City of Taunton Dep't of Pub. Works*, 17 E.A.D. 105, 122 (EAB 2016) *aff'd*, No. 16-2280 (1st Cir. July 9, 2018); *In re City of Palmdale*, 15 E.A.D. 700, 721 (EAB 2012); *In re Christian Cty. Generation, LLC*, 13 E.A.D. 449, 459 (EAB 2008); *In re Prairie State Generating Co.*, 13 E.A.D. 1, 59 (EAB 2006), *aff'd sub nom. Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007). Instead, "it serves an important function related to the efficiency and integrity of the overall administrative scheme." *BP Cherry Point*, 12 E.A.D. at 219. While a petitioner may be excused from that regulatory requirement if the petitioner demonstrates that an issue was not reasonably ascertainable during the public comment period, *see, e.g., Prairie State*, 13 E.A.D. at 45 n.41, 59, 61, the Board does not find that to be the situation here.

In the Fact Sheet for the draft permit, the Region stated that "concentrations within the PEP fence line were not calculated as it is not considered ambient air." Fact Sheet § 7.5.3, at 74. The Region continued, "[s]imilarly," i.e., because the atmosphere within Plant 42 is not considered ambient air, "impacts from USAF

Plant 42 sources were not calculated for locations inside the Plant 42 fence line in the NO₂ * * * cumulative impact analys[is].” *Id.* And a paragraph earlier, the Region explained that “ambient air” constitutes “locations ‘external to buildings, to which the general public has access.’” *Id.* § 7.5.3, at 73.¹⁸ Thus, the Fact Sheet for the draft permit contained sufficient information to alert commenters that impacts from Plant 42 sources were not calculated for locations within the Plant 42 fence line because the general public lacks access to that area and therefore the atmosphere there is not considered ambient air. *Cf. In re City of Hollywood*, 5 E.A.D. 157, 172-73 & n.18 (EAD 1994) (holding that fact sheet gave adequate notice for factual basis of permitting authority’s decision to include whole effluent toxicity limit in Clean Water Act permit and therefore petitioner had waived any entitlement to an evidentiary hearing where petitioner failed to include any challenge to the factual basis for permitting authority’s conclusion that whole effluent toxicity limit was necessary to ensure compliance with state law).

The Conservation Groups’ comment letter on this point contended only that “PEP does not own Plant 42 and therefore Plant 42 is ambient air.” Comment Letter at 16. The Groups continued, arguing that “EPA’s long[-]standing interpretation of ambient air allows a company to poison its own workers but not someone else’s workers on an adjacent property.” *Id.* Thus, the Groups’ argument in their comment letter was that the atmosphere over Plant 42 should be considered ambient air because Palmdale does not own Plant 42.¹⁹ The Groups did *not* make the argument that they are now making – that Plant 42 is in fact open to the public and therefore the atmosphere within its boundaries is ambient air. As such, that issue has not been preserved for review here. *See, e.g., In re Scituate Wastewater Treatment Plant*, 12 E.A.D. 708, 723 (EAB 2006) (collecting cases and noting that under permitting rules and Board precedent, petitioners must raise during public comment period “the specific argument” they seek to raise on appeal; “it is not

¹⁸ Similarly, Palmdale explained in its permit application that “[c]oncentrations within the facility fenceline [sic] were not calculated. Neither were impacts calculated for locations inside the Plant 42 fenceline [sic] in the NO₂ * * * cumulative impacts analys[is] which includes sources at the Lockheed-Martin, Northrup-Grumman, and Boeing facilities inside Plant 42 (Plant 42 is not open for public access).” Permit Appl. § 6.4, at 6.4-1 to -2.

¹⁹ The Region responded to the Conservation Groups’ comment that the atmosphere over Plant 42 should be considered ambient air because Palmdale does not own it, Response to Comments at 54-57, and the Groups do not challenge the Region’s response in their petition for review.

sufficient for the petitioner to have raised a more general or related argument during the public comment period”) (quoting *In re Gov’t of D.C. Mun. Sep. Storm Sewer Sys.*, 10 E.A.D. 323, 339 (EAB 2002)).²⁰

The Board similarly concludes that the Conservation Groups have failed to demonstrate that they timely presented their argument that the Region failed to evaluate at least four separate facilities (the airport and the Lockheed-Martin, Northrup-Grumman, and Boeing facilities) at Plant 42 in accordance with EPA guidance that interprets the meaning of “ambient air” in GOCO-leased land situations. The Fact Sheet for the draft permit readily disclosed those Plant 42 facilities, *see, e.g.*, Fact Sheet § 3.1, at 3-4 figs.1-2, yet the Conservation Groups’ comment letter makes no argument that the Region failed to evaluate those facilities in accordance with EPA guidance. That argument therefore is not preserved for review.²¹

In any event, it seems to the Board that, in Appendix 6 to the Fact Sheet, the Region conducted the very analysis the Groups claim should have been done – i.e., a PEP cumulative impacts analysis of one-hour NO₂ that includes Plant 42 stationary source and aircraft emissions impacts on the Plant 42 atmosphere.

²⁰ In the Conservation Groups’ Reply, the Groups contend that they have preserved this issue for review because they “included an exhibit [with their comment letter] which stated that Palmdale Regional Airport had commercial flights, as well as local and transient general aviation flights.” Reply at 19 (citing Comment Letter ex. 12). The Groups did not reference that exhibit in the relevant portion of their comment letter dealing with how the Region treated Plant 42. *See* Comment Letter at 16-17. And exhibit 12 is simply a printout of the FlightAware website regarding flights at Palmdale Regional Airport. The exhibit is in no way tied to an argument that Plant 42 should be considered ambient air because it is open to the public, nor did the exhibit put the Region on notice that the Groups were making that argument in their comment letter. As discussed in the text above, however, a petitioner must raise the specific argument it seeks to raise on appeal; a more general or related argument is insufficient to meet the threshold requirements.

²¹ For purposes of preserving an issue for Board review, the Conservation Groups are not limited to the comments raised in their own comment letter, but it is still the Groups’ burden, not the Board’s, to identify somewhere in the public comment process that the issue was raised. *In re Encogen Cogen. Facility*, 8 E.A.D. 244, 250 n.10 (EAB 1999) (“It is not incumbent upon the Board to scour the record to determine whether an issue was properly raised below: this burden rests with Petitioners.”). The Groups have failed to do so here.

Appendix 6 establishes that when emissions impacts on Plant 42 receptors from Plant 42 sources are included in PEP's cumulative impacts analysis, the maximum cumulative one-hour NO₂ impacts are below the NAAQS, demonstrating compliance. Fact Sheet § 7.5.3, at 74 n.99 & app. 6. When asked at oral argument whether the Appendix 6 analysis was "what you were asking for in your petition," Oral Arg. Tr. at 25, counsel for the Conservation Groups answered cautiously, stating "[w]ell, it could appear that way. You can't tell what the receptor grid is by looking just at a picture. * * * [T]hey need to have the complete receptor grid * * *. * * * I guess more concerning is I don't know if there are receptors at the Plant 42 GOCO facilities" (i.e., Boeing, Lockheed-Martin, Northrup-Grumman). *Id.* at 25-26. When asked a similar question, counsel for the Region stated, "I think [Appendix 6] effectively is what the [Conservation Groups] want," with the exception of their argument that aircraft emissions should be separately modeled as a nearby source. *Id.* at 62. Counsel for the Region acknowledged that "the Fact Sheet does not describe in detail the nature of the modeling that was done and shown in Appendix 6, because it was sort of an extra exercise" that the Region conducted on its own initiative. *Id.* But the analysis was done by the Region.

As the record makes plain, and as confirmed by the Region's counsel at oral argument, the receptor grid used to produce Appendix 6 "clearly covered" the area around the GOCO facilities. Oral Arg. Tr. at 62; *see* Permit Appl. § 6.4, at 6.4-1 & 6.5-10 to -11 figs.6-2 to 6-3 (describing receptor locations); Fact Sheet § 7.5.3, at 73-74 (same); Response to Comments at 55 (same). In the response to comments, the Region explained its Appendix 6-related efforts as follows:

EPA conducted additional cumulative modeling for 1-hr NO₂ that included impacts from Plant 42 sources on receptors both within and outside Plant 42 for informational purposes to confirm that a spike in the modeled concentrations just outside the northwest corner of Plant 42 was caused by sources within Plant 42 and not by the PEP. * * * Those impacts were not seen in the Project-only analysis and had appeared to be an anomaly.

Response to Comments at 62 n.76. Accordingly, the Board concludes that NO₂ impacts caused by Plant 42 stationary source emissions on Plant 42 air quality receptors were included in the Region's Appendix 6 modeling analysis.²²

²² The Board acknowledges that the Region performed the additional cumulative modeling in Appendix 6 for "informational purposes," and the Board does not mean to suggest that the Region was *required* to perform that analysis. Nonetheless, the analysis that the Conservation Groups seem to be arguing should have been done during the

NO₂ impacts caused by Plant 42 aircraft takeoffs and landings similarly were incorporated into the Appendix 6 analysis, albeit indirectly, as part of the background concentrations of air pollutants measured at the Lancaster-Division Street monitor. *See* Fact Sheet app. 6 (listing background pollutant concentrations as one of modeling inputs); *id.* § 7.4.6, at 71 (explaining that hourly seasonal NO₂ concentrations measured at Lancaster monitor were averaged over three years to determine background one-hour NO₂ level, consistent with Agency guidance); *see also One-Hour NO₂ Guidance* at 17-19 (discussing acceptability of three-year averaging method). As discussed above, the Region determined that the Lancaster data are sufficiently representative of Plant 42 aircraft emissions *outside* Plant 42 boundaries. It seems to the Board that the Region similarly considered the Lancaster data sufficiently representative of Plant 42 aircraft emissions *within* Plant 42 boundaries as well. The Board's conclusion is based primarily on the Region's use of the data for that very purpose. *See* Fact Sheet app. 6 (listing background pollutant concentrations as one of modeling inputs). If the Region did not think the background data were representative of aircraft emissions within Plant 42's boundaries, it is difficult to see how the Region could have accomplished its goal in conducting the additional cumulative impact modeling for NO₂ that it did in Appendix 6 – “to confirm that a spike in the modeled concentrations just outside the northwest corner of Plant 42 was caused by sources *within* Plant 42 and not by the PEP [facility].” Response to Comments at 62 n.76 (emphasis added).

Moreover, the Region approved a conservative NO₂ modeling protocol, called the “Ozone Limiting Method,” for this permit. And under that method, “ambient ozone concentrations limit the amount of emitted [nitric oxide] that is converted to NO₂.” Fact Sheet § 7.4.6, at 70. The Palmdale area has “substantial ozone,” but most of that ozone is transported there from outside the area rather than generated by photochemical reactions involving local area source-emitted pollutants. *Id.* The Region further explains that ozone is a “regionally formed pollutant,” *id.*, in an area broadly encompassing the PEP facility, the Plant 42 compound, and beyond. In such cases, “the nearness of the monitoring site” to the emissions sources “is the most important criterion for representativeness.” *Id.* Given that the Lancaster-Division Street monitor is approximately as near to Plant 42 emissions sources as to the PEP facility, and given the Region's use of Lancaster-Division Street background concentration data in its Appendix 6

permitting process does, in fact, appear to have been done, as reflected in the record, and shows that the maximum cumulative one-hour NO₂ impacts are below the NAAQS.

analysis, it seems to the Board that the Region considers the Lancaster data adequately representative of aircraft emission impacts on Plant 42 receptors. *See* Response to Comments at 60 (concluding that Lancaster monitor “can be assumed to conservatively represent background levels and the potential impacts from sources near the PEP [facility], including * * * aircraft emissions”).

For these reasons, it appears to the Board that the Region’s Appendix 6 analysis constitutes the analysis the Conservation Groups have been claiming needed to be done during the permitting process. That analysis considers maximum cumulative one-hour NO₂ emissions and establishes that, with the addition of PEP facility emissions, the atmosphere may approach, but will still be in compliance with, the one-hour NO₂ NAAQS. Accordingly, the Board denies review on this issue.

2. *The Conservation Groups Fail to Demonstrate Clear Error or Other Basis for Review of the Region’s Decisions to Forgo Cumulative Impacts Analyses for One-Hour and Eight-Hour CO and Annual NO₂ Emissions*

The Conservation Groups also challenge the Region’s modeling analyses for CO averaged over one-hour and eight-hour intervals and for NO₂ averaged on an annual basis, claiming that cumulative impacts analyses for these pollutants and averaging periods should have been, but were not, conducted. Pet. at 53-59.

In preparing the draft permit, the Region determined that Palmdale’s project-only emissions would not exceed the SILs for one-hour or eight-hour CO or annual NO₂. Thus, it declined to require cumulative impacts analyses for those pollutants. *See* Fact Sheet § 7.3.3, at 51-52 & tbl.23, § 7.3.3.1, at 57 tbl.24. For CO, the Region found that maximum modeled PEP-only impacts were “well below the SILs.” *Id.* § 7.3.3.1, at 52. The Region also noted that background CO concentrations in the area are very small in comparison to the CO NAAQSs. *Id.*; *see id.* § 7.3.2, at 51 tbl.23. For NO₂, the Region found that the maximum modeled PEP-only impact of 0.98 µg/m³ was close to the SIL, set at 1.0 µg/m³. *Id.* § 7.3.3.1, at 52, 57 tbl.24. The Region determined, however, that a cumulative impacts analysis was not necessary because the “relatively minor impacts” caused by PEP (0.98 µg/m³) and the “low” background concentration (15.1 µg/m³) did not seem particularly worrisome as compared to the annual NO₂ NAAQS (100 µg/m³) and Class II increment (25 µg/m³). *Id.* § 7.3.3.1, at 52.

On appeal, the Conservation Groups first contend that the Region relied on SILs to avoid performing cumulative impact analyses for one-hour and eight-hour CO and for annual NO₂ in the draft permit, but later, in response to comments, the

Region provided “new justifications” for its decision to forgo those cumulative analyses. Pet. at 53-55. The Groups suggest that those “new justifications * * * arose from changes made by the Region between the draft and final permit[s].” *Id.* at 53-54. Second, irrespective of that supposed shift in justification by the Region, the Groups argue that the Region erred in relying on SILs to forgo the identified CO and NO₂ cumulative impact analyses and, in so doing, compounded its error by referencing 40 C.F.R. § 51.165(b)(2), a state program requirement. *Id.* at 53-55. Finally, the Groups claim that the Region’s CO and NO_x analyses are flawed because they ignored military aircraft and stationary source emissions at Plant 42. *Id.* at 55. In making that argument, the Groups contend that the Lancaster-Division Street monitor “does not include” and “would not capture” aircraft emissions. *Id.* at 57. For the following reasons, the Board concludes that the Groups have failed to demonstrate any clear error by the Region or that review is otherwise warranted.

With respect to the Conservation Groups’ first argument, the Board does not perceive any changes between the draft and final permits in this context. Instead, in its response to comments, the Region expanded on its analysis and reasoning to address comments submitted by the Groups during the public comment process. Response to Comments at 46-49. It is true that in the Region’s response to comments the Region provided a discussion of the CO and NO₂ modeling conducted for PEP-only impacts and PEP-only *plus* background impacts. *Id.* at 47-49. The Region explained that the modeled PEP-only impacts were “very low” compared to the NAAQS – “each less than 4% of applicable values.” *Id.* at 47. Further, modeled PEP-only plus background concentrations were still “well below” the NAAQS, at “less than 17% of each NAAQS.” *Id.* at 47-48. The Region concluded by noting that, based on that analysis (which was derived using data contained in the Fact Sheet for the draft permit), its decisions to forgo cumulative impacts analyses for these pollutants were “justified and appropriate even without any consideration of or comparison to the SILs.” *Id.* at 48. The Region did not, however, wholly abandon its reliance on SILs, as the Groups seem to suggest. Quite the contrary, the Region explained, “Although our air quality analyses and conclusions concerning the [PEP facility] are valid without any reliance on SILs, we also believe that the use of SILs in assessing the impacts of the [PEP facility] was appropriate.” *Id.* The Groups fail to demonstrate anything clearly erroneous or otherwise warranting review in the Region’s approach and provision of additional analysis based on information in the Fact Sheet in response to public comment.

That leads to the Conservation Groups’ second argument – that the Region erred in relying on SILs and 40 C.F.R. § 51.165(b)(2), a state program requirement.

In its response to comments, the Region provided a detailed explanation as to why “the use of SILs in assessing the impacts of the [PEP facility] was appropriate.” Response to Comments at 48. The Region explained, based on an EPA legal memorandum, that the Clean Air Act “may be read to allow the use of SILs as part of air quality demonstrations required for PSD permit applications under [the Act, 42 U.S.C. § 7475(a)(3)],” and that “SILs have been used as a means of making the air quality impact demonstration required” by the Clean Air Act for PSD permits. *Id.* at 48 & n.47. Again, relying on the Agency legal memorandum, the Region explained that “where air quality modeling demonstrates that the projected air quality impact of the proposed source will not exceed a properly supported SIL, the PSD permitting authority has discretion to determine, on a case-by-case basis, that the proposed source’s emissions will not ‘cause or contribute to’ a violation of the applicable NAAQS or PSD increment, without the need for additional air quality analysis.” *Id.* at 48.; *see also id.* at 48 n.47.

The Region then addressed the propriety of the SILs it used in evaluating the PEP facility and specifically addressed the contention the Conservation Groups make here – that the Region erroneously relied on 40 C.F.R. § 51.165(b)(2), a state program requirement. The Region explained that it did not consider the values in 40 C.F.R. § 51.165(b)(2) to be legally binding in this permitting process. Response to Comments at 49 n.50. Instead, the Region identified the regulation as reference material to show the source of the SIL values used in its analysis. *Id.* The notice and supporting record for 40 C.F.R. § 51.165(b)(2) “explain how the EPA developed these values, which represent a level of change in concentration at which the impact of the source is considered to cause or contribute to a violation of the relevant NAAQS.” *Id.* Thus, the Agency “believes it is also reasonable to conclude in most permitting situations that an impact below the values in 40 CFR 51.165(b) would not cause or contribute to a violation.” *Id.* The Region did not read 40 C.F.R. § 51.165(b)(2) to require that conclusion, but rather to draw “an inference from the EPA’s rationale supporting the values.” *Id.* The Region also noted that the Agency “has long used the CO and annual NO₂ values in 40 CFR 51.165(b)(2) as a compliance demonstration tool on a case-by-case basis in the context of PSD air quality analysis.” *Id.* at 48-49. Indeed, those values are reflected in the NSR Manual. *NSR Manual*, at C.26-.28, .52.

On appeal, the Conservation Groups do not confront the Region’s explanation regarding the appropriateness of using SILs. The Groups do not dispute the SIL values used by the Region, but instead argue that the Region erred by relying on the values in 40 C.F.R. § 51.165(b)(2) because that regulation is a state program requirement. But as just discussed, the Region did not treat the values

as legally binding. Instead, the Region used them as a tool for making the required air quality demonstrations required for PSD permit applications under the Clean Air Act, 42 U.S.C. § 7475(a)(3). The Groups therefore fail to demonstrate any clear error by the Region on this point or that there is any issue otherwise warranting review. *See, e.g., In re Pio Pico Energy Ctr., LLC*, 16 E.A.D. 56, 65, 99-101, 121, 127, 144, 147, 149 (EAB 2013) (describing and repeatedly applying well-established Board precedent that petitioners must describe each objection they are raising on appeal and explain why permit issuer's response to comments on that issue during the public comment period is clearly erroneous or otherwise warrants consideration).

That leaves the Conservation Groups' argument that the Region's CO and NO₂ analyses are flawed because they ignored military aircraft and stationary source emissions at Plant 42 by relying on the Lancaster-Division Street monitor, which the Groups maintain "does not include" and "would not capture" aircraft emissions. Pet. at 57. Simply put, the Groups' argument misapprehends the Region's conclusion as to the Lancaster-Division Street monitor. The Region never maintained that the monitor would actually "capture" emissions from aircraft at Plant 42. Instead, as explained above, the Region concluded that the Lancaster-Division Street monitor "very conservatively represent[s] background concentrations near the PEP [facility]," and, as a result, mobile source emissions measured at the Lancaster monitor "can be assumed to conservatively represent background levels and the potential impacts from sources near the PEP, including * * * aircraft emissions." Response to Comments at 60. Thus, the Region concluded that the values from the Lancaster-Division Street monitor conservatively *represented* background levels and potential impacts from sources near the PEP facility, not that the monitor was actually *capturing* those emissions.²³

In sum, the Board concludes that the Conservation Groups have failed to demonstrate any clear error by the Region or any other issue warranting review with respect to the Region's decisions to forgo cumulative impacts analyses for one-hour and eight-hour CO and annual NO₂ emissions. Accordingly, the Board denies review on this issue.

²³ Some of the other points the Conservation Groups make on this matter repeat arguments raised in the prior section, which, as shown there, lack merit. *See supra* Part V.B.1.a (denying review of challenges to Lancaster-Division Street air quality monitor as sufficiently representative of ambient background air pollution concentrations at the PEP site, including military aircraft emissions).

VI. *CONCLUSION*

For the foregoing reasons, the Board denies the Conservation Groups' petition for review.²⁴

So ordered.

²⁴ The Board has given full consideration to all arguments by the Conservation Groups regarding the Region's BACT Step 2 analysis and air quality analyses. All arguments in favor of granting review not specifically addressed in this order are rejected. *See, e.g., In re Avenal Power Ctr., LLC*, 15 E.A.D. 384, 405 (EAB 2011), *vacated & remanded on other grounds sub nom. Sierra Club v. EPA*, 762 F.3d 971 (9th Cir. 2014); *In re Occidental Chem. Agric. Prods., Inc.*, 3 E.A.D. 145, 149 n.5 (CJO 1990).

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **Order Denying Review** in the matter of *Palmdale Energy, LLC*, PSD Appeal No. 18-01, were sent to the following persons in the manner indicated:

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