

**IN RE CITY OF PALMDALE  
(PALMDALE HYBRID POWER PROJECT)**

PSD Appeal No. 11-07

***ORDER DENYING REVIEW***

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Decided September 17, 2012

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Syllabus

Mr. Rob Simpson petitioned the Environmental Appeals Board (“Board”) to review a prevention of significant deterioration (“PSD”) permit that Region 9 (“Region”) of the United States Environmental Protection Agency (“EPA”) issued to the City of Palmdale (“City”) pursuant to the Clean Air Act (“CAA”). The Final Permit authorizes the City to construct and operate the Palmdale Hybrid Power Project (“PHPP”) in Palmdale, California. PHPP is a proposed 570 megawatt (“MW”) baseload hybrid, natural gas-solar plant that is designed to generate up to 50 MW of its total electric power using a solar array.

Mr. Simpson’s appeal presents several overarching issues for resolution. The first issue Mr. Simpson raises is whether the Region clearly erred or abused its discretion in declining to extend or reopen the public comment period. The second issue is whether the Region clearly erred or abused its discretion in determining the best available control technology (“BACT”) for emissions of greenhouse gases (“GHGs”). In particular, Mr. Simpson asserts that the Region failed to identify algae ponds as an available control technology in step 1 of its BACT analysis; failed to properly rank the control technologies in step 3 of its BACT analysis; should have considered alternative solar power configurations in its analysis of the solar power component beyond the 50 MW proposed by the City; and improperly dismissed one control technology, carbon capture and storage (“CCS”), as economically infeasible in step 4 of the BACT analysis. Finally, the third issue Mr. Simpson raises is whether the Region abused its discretion by failing to conduct an independent analysis of the need for the facility under CAA section 165(a)(2).

Held: The Board denies review of the Final Permit. Mr. Simpson has not demonstrated that review is warranted on any of the grounds presented.

(1) Issues Concerning The Public Comment Period

(a) Region’s Decision Not to Extend the Comment Period

Mr. Simpson fails to demonstrate that the Region clearly erred or abused its discretion in declining to extend the public comment period. The Region provided the regulatory minimum comment period for the draft permit. In his request for an extension, Mr. Simpson did not identify any issue for which he needed more time or explain why the comment period was insufficient for that task as is contemplated by 40 C.F.R. § 124.13. It was not an abuse of its

discretion for the Region to balance the public's desire for more time against the need for expedited review under the CAA.

(b) Region's Decision Not to Reopen the Comment Period

Mr. Simpson fails to demonstrate that the Region abused its discretion in declining to reopen the comment period. The changes to the permit decision that Mr. Simpson argues warranted reopening the public comment period occurred as a response to – or as a logical outgrowth of – the comments received, did not raise substantial new questions, and were cogently explained and supported by the Region in the Response to Comments document. Moreover, the Region's explanation for all of these changes was sufficient to enable Mr. Simpson to challenge them on appeal.

(2) Issues Concerning BACT for GHGs

(a) Algae Ponds

Mr. Simpson fails to demonstrate that the Region clearly erred or abused its discretion in not identifying algae ponds as an available control technology in step 1 of the BACT analysis. Mr. Simpson did not confront the Region's response to his comments concerning the use of algae ponds as a potential control technology or explain why the Region's conclusion was clearly erroneous. Instead, he merely recited his comment and the Region's response. This does not satisfy petitioner's burden of showing entitlement to review.

(b) Ranking of Control Technologies

Mr. Simpson failed to preserve for review the question of whether the Region properly ranked the control technologies in step 3 of the BACT analysis. Critically, Mr. Simpson did not point to any place in the administrative record where he, or any other commenter, raised this issue during the public comment process, as is required to preserve this issue for review.

(c) Consideration of Alternative Solar Power Configurations

Mr. Simpson fails to demonstrate that the Region clearly erred or abused its discretion in setting BACT for GHGs based on consideration of the 50 MW solar thermal component the City proposed for PHPP. Because the solar component is integrated into the heat recovery portion of the project, it has the potential to reduce GHG emissions by reducing use of the duct burners during peak energy demand.

First, the Board concludes that the Region's determination that an all-solar plant at PHPP would be incompatible with the primary purpose of the proposed power plant (which is to provide 570 MW of baseload power to the City) is fully supported by the administrative record and comports with EPA's recent GHG permitting guidance.

Second, the Board concludes that, even though it is less clear whether Mr. Simpson's comments were sufficiently specific to obligate the Region to analyze options for expanding the solar component beyond the City's proposed 50 MW design capacity (but stopping short of an all-solar design), the administrative record demonstrates that it would be infeasible to generate additional solar power in any significant amount at the proposed site due to space constraints. Mr. Simpson's assertions that adjacent land could be used for additional solar panels were not raised during the public comment period; therefore, this argument is waived. Thus, the Board concludes that the Region did

not abuse its discretion in setting BACT for GHGs based on consideration of the proposed solar thermal component.

(d) CCS

Mr. Simpson fails to demonstrate that the Region clearly erred in eliminating CCS as a control technology in step 4 of the BACT analysis because of its economic infeasibility. The Region determined that the cost of CCS would be so high – twice the annual cost of the entire project – that it would clearly be cost prohibitive, and this determination was consistent with EPA’s recent GHG permitting guidance. The Region’s price comparison approach therefore was neither inappropriate nor impermissible. In addition, Mr. Simpson fails to demonstrate that the Region “grossly inflated” the costs of CCS because he relies on information that is either inapplicable or speculative.

(3) Issue Concerning the Region’s Consideration of the “Need” for PHPP

Mr. Simpson fails to demonstrate that the Region abused its discretion when it elected not to conduct an independent analysis of the “need” for PHPP pursuant to CAA section 165(a)(2). The Region had the discretion, but was not required, to conduct an independent analysis of the need for PHPP in the context of this PSD permit proceeding. The Region reasonably concluded that it would be inappropriate in this case for EPA to conduct an independent analysis of the need for PHPP given the mechanisms that exist within the State to evaluate the state-wide need for electric generating facilities and the lack of expertise and information present in this permit proceeding that would be necessary to conduct such a complex analysis.

***Before Environmental Appeals Judges Leslye M. Fraser, Catherine R. McCabe, and Kathie A. Stein.***

***Opinion of the Board by Judge McCabe:***

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### *I. Statement of the Case*

Mr. Rob Simpson petitions the Environmental Appeals Board ("Board") to review a Clean Air Act ("CAA") prevention of significant deterioration ("PSD") permit, PSD Permit No. SE 09-01 ("Final Permit"), that the United States Environmental Protection Agency ("EPA" or "Agency") Region 9 ("Region") issued to the City of Palmdale ("City" or "permit applicant") on October 18, 2011. The Final Permit authorizes the City to construct and operate the Palmdale Hybrid Power Project ("PHPP") in Palmdale, California. *See* Final Permit at 1 (Administrative Record Index No. ("A.R.") VII-2). Both the Region and the City have filed a response to the Petition. The Board did not hold oral argument in this matter. For the reasons discussed below, the Board denies review of the Petition.

## II. Issues

This appeal presents the following overarching issues for resolution:

- A. Did the Region clearly err or abuse its discretion in declining to extend or reopen the public comment period?
- B. Did the Region clearly err or abuse its discretion in determining the best available control technology (“BACT”) for emissions of greenhouse gases (“GHGs”)?
- C. Did the Region abuse its discretion when it elected not to conduct an independent analysis of the “need” for PHPP pursuant to CAA section 165(a)(2)?

## III. Standard of Review and Burden of Persuasion

The Board’s review of a PSD permit is governed by Title 40 of the Code of Federal Regulations (“C.F.R.”), section 124.19, and is discretionary. *See In re Avenal Power Ctr., LLC*, 15 E.A.D. 384, 394-95 (EAB 2011). Ordinarily, the Board will not review a PSD permit unless the permit decision either is based on a clearly erroneous finding of fact or conclusion of law, or involves a matter of policy or exercise of discretion that warrants review. 40 C.F.R. § 124.19(a); Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,412 (May 19, 1980). In reviewing an exercise of discretion by the permitting authority, the Board applies an abuse of discretion standard. *See In re Guam Waterworks Auth.*, 15 E.A.D. 437, 443 n.7 (EAB 2011). The Board will uphold a permitting authority’s reasonable exercise of discretion if that decision is cogently explained and supported in the record. *See In re Ash Grove Cement Co.*, 7 E.A.D. 387, 397 (EAB 1997) (“[A]cts of discretion must be adequately explained and justified.”); *see also Motor Vehicles Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 48 (1983) (“We have frequently reiterated that an agency must cogently explain why it has exercised its discretion in a given manner \* \* \*.”). In reviewing any permit decision, the Board is cognizant of the preamble to section 124.19, in which the Agency states that the Board’s power of review “should be sparingly exercised” and that “most permit conditions should be finally determined at the [permit issuer’s] level.” 45 Fed. Reg. at 33,412; *accord In re Cardinal FG Co.*, 12 E.A.D. 153, 160 (EAB 2005).

Thus, when evaluating a permit appeal, the Board examines the administrative record prepared in support of the permit to determine whether the permit issuer exercised his or her “considered judgment.” *Ash Grove*, 7 E.A.D. at 417-18; *In re GSX Servs. of S.C., Inc.*, 4 E.A.D. 451, 454 (EAB 1992). The permit issuer must articulate with reasonable clarity the reasons supporting its conclusion and

the significance of the crucial facts it relied upon when reaching its conclusion. *E.g.*, *In re Shell Offshore, Inc.* (“*Shell I*”), 13 E.A.D. 357, 386 (EAB 2007). As a whole, the record must demonstrate that the permit issuer “duly considered the issues raised in the comments and [that] the approach ultimately adopted by the [permit issuer] is rational in light of all information in the record.” *In re Gov’t of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 342 (EAB 2005); *accord In re City of Moscow*, 10 E.A.D. 135, 142 (EAB 2001); *In re NE Hub Partners, LP*, 7 E.A.D. 561, 567-68 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3rd Cir. 1999). On matters that are fundamentally technical or scientific in nature, the Board will typically defer to a permit issuer’s technical expertise and experience, as long as the permit issuer adequately explains its rationale and supports its reasoning in the administrative record. *See In re Dominion Energy Brayton Point, LLC* (“*Dominion I*”), 12 E.A.D. 490, 510 (EAB 2006); *see also, e.g., In re Russell City Energy Ctr.* (“*RCEC*”), 15 E.A.D. 1, 66 (EAB 2010), *petition denied sub nom. Chabot-Las Positas Cmty. Coll. Dist. v. EPA*, 482 F.App’x 219 (9th Cir. 2012); *In re Peabody W. Coal Co.*, 12 E.A.D. 22, 41, 46, 51 (EAB 2005); *NE Hub*, 7 E.A.D. at 570-71.

In any appeal from a permit under part 124, the petitioner bears the burden of demonstrating that review is warranted. *See* 40 C.F.R. § 124.19. To meet this burden, the petitioner must satisfy threshold pleading requirements. For example, a petitioner seeking review must file an appeal within thirty days of service of the decision and must have filed comments on the draft permit or participated in the public hearing. 40 C.F.R. § 124.13 (requiring persons who believe a condition of a draft permit is inappropriate to “raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period”); *id.* § 124.19(a) (stating that a petition for review to the Board “shall include \* \* \* a demonstration that any issues being raised were raised during the public comment period”); *RCEC*, 15 E.A.D. at 10. The failure to satisfy these threshold requirements is grounds for denial of review. *See, e.g., RCEC*, PSD Appeal Nos. 10-07 through 10-10 (EAB May 3, 2010) (Order Dismissing Four Petitions as Untimely); *In re Christian Cnty. Generation, LLC*, 13 E.A.D. 449, 459 (EAB 2008) (denying review of a petition based on petitioner’s failure to raise a reasonably ascertainable issue during the public comment period).

In addition, a petitioner must not only specify objections to the permit but also must explain why the permit issuer’s previous response to those objections is clearly erroneous or otherwise warrants review.<sup>1</sup> *See In re Teck Cominco Alaska*,

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<sup>1</sup> Federal circuit courts of appeal have upheld this Board requirement that a petitioner must substantively confront the permit issuer’s response to the petitioner’s previous objections. *Native Vill. of Kivalina IRA Council v. EPA*, 687 F.3d 1216, 1221 (9th Cir. 2012), *aff’g In re Teck Alaska, Inc.*, NPDES Appeal No. 10-04 (EAB Nov. 18, 2010); *City of Pittsfield v. EPA*, 614 F.3d 7, 11-13 (1st Cir. Continued

*Inc.*, 11 E.A.D. 457, 494-95 (EAB 2004); *In re Westborough*, 10 E.A.D. 297, 305, 311-12 (EAB 2002); *In re City of Irving*, 10 E.A.D. 111, 129-30 (EAB 2001) (same), *review denied sub nom. City of Abilene v. EPA*, 325 F.3d 657 (5th Cir. 2003); *see also* Order Governing Petitions for Review of Clean Air Act New Source Review Permits (“NSR Standing Order”) ¶ 7 (EAB Apr. 19, 2011) (requiring petitioners to “demonstrate with specificity, by citing to the applicable documents and page numbers, where in the response to comments the permit issuer responded to the comments and must explain why the permit issuer’s response to comments is inadequate”).

#### IV. Summary of Decision

For all the reasons stated below, the Board concludes that: (A) the Region did not clearly err or abuse its discretion in declining to extend or reopen the public comment period; (B) the Region did not clearly err or abuse its discretion in determining BACT for emissions of GHGs; and (C) the Region did not abuse its discretion when it elected not to conduct an independent analysis of the “need” for this project under CAA section 165(a)(2). Accordingly, the Board denies review of the PHPP PSD permit.

#### V. Procedural and Factual History

The public comment period on the proposed PHPP PSD permit began on August 11, 2011. *See* U.S. EPA Region 9, *Responses to Public Comments on the Proposed Prevention of Significant Deterioration Permit for the Palmdale Hybrid Power Project* at 3 (Oct. 2011) (A.R. VII-3) [hereinafter RTC]. The deadline for receipt of public comments was September 14, 2011, thirty-four days later. *See id.* at 3. Two days before the close of the comment period, on September 12, 2011, Mr. Simpson requested by e-mail a 30-day extension. *See* E-mail from Rob Simpson to Lisa Beckham, U.S. EPA Region 9 (Sept. 12, 2011, 09:31 PDT) (A.R. V-6). Mr. Simpson’s stated basis for the extension was to “submit more complete comments” due to the “massive amount of information to review.” *Id.* The Region notified Mr. Simpson on that same day that his requested extension was denied. *See* E-mail from Deborah Jordan, Dir., Air Div., U.S. EPA Region 9, to Rob Simpson (Sept. 12, 2011, 14:00 PDT) (A.R. VI-19). Mr. Simpson responded with another e-mail asking the Region to reconsider, arguing that the documents posted in the Region’s docket “equate[] to [tens] of thousands of pages

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(continued)

2010), *aff’g In re City of Pittsfield*, NPDES Appeal No. 08-19 (EAB Mar. 4, 2009) (Order Denying Review); *Mich. Dep’t Env’tl. Quality v. EPA*, 318 F.3d 705, 708 (6th Cir. 2003), *aff’g In re Wastewater Treatment Facility of Union Twp.*, NPDES Appeal Nos. 00-26 & 00-28 (EAB Jan. 23, 2001).

of information” and that a thirty-day public comment period serves to “preclude public participation.” See E-mail from Rob Simpson to Deborah Jordan, Dir., Air Div., U.S. EPA Region 9 (Sept. 12, 2011, 18:03 PDT) (A.R. V-7). The Region did not extend the public comment period.

On October 18, 2011, the Region issued its final permitting decision and a document responding to the comments it had received. See generally Final Permit at 1; RTC at 1. Mr. Simpson filed a timely appeal.<sup>2</sup> By Order dated April 5, 2012, the Board declined to hear oral argument. Order Identifying Petition for Review and Denying Requests for Status Conference, Leave to File Reply, and Oral Argument at 7.

## VI. Overview of PSD Legal Requirements and BACT Analysis

As noted above, Mr. Simpson challenges a PSD permit issued under the CAA. The PSD provisions govern air pollution in certain areas, called “attainment” areas, where the air quality meets or is cleaner than the national ambient air quality standards, as well as in unclassifiable areas that are neither attainment nor “non-attainment.” CAA §§ 160-69, 42 U.S.C. §§ 7470-79; accord *In re Rockgen Energy Ctr.*, 8 E.A.D. 536, 541 (EAB 1999). The statutory PSD provisions are largely carried out through a regulatory process that requires new major stationary sources in attainment (or unclassifiable) areas, such as PHPP, to obtain preconstruction permits pursuant to CAA § 165, 42 U.S.C. § 7475. See 40 C.F.R. § 52.21; *Rockgen*, 8 E.A.D. at 541; *In re Knauf Fiber Glass, GmbH (“Knauf I”)*, 8 E.A.D. 121, 123 (EAB 1999).

The CAA and Agency PSD regulations require that every proposed PSD permit be subjected to a preconstruction review by the permitting authority, which must include a public hearing with the opportunity for interested persons to comment on the air quality impact of the proposed source, alternatives thereto, control technology, and other appropriate considerations. CAA § 165(a)(2), 42 U.S.C. § 7475(a)(2). As part of the preconstruction review process, new major stationary sources and major modifications of such sources employ the “best available control technology,” or BACT, to minimize emissions of regulated pollutants. CAA § 165(a)(4), 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2). The statute defines the BACT requirements as follows:

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<sup>2</sup> Mr. Simpson filed several versions of his petition for review. See generally Order to Show Cause as to Why Petition Should Not Be Dismissed. After considering argument as to which version should be considered, the Board ultimately identified docket entry number 9 (entitled “Petition for Review (Clerical Amendment)”) as the exclusive petition for review in this case. See Order Identifying Petition for Review and Denying Requests for Status Conference, Leave to File Reply, and Oral Argument at 4. For this reason, the Board has considered only the arguments in docket entry number 9, and all references to the “Petition” throughout this decision refer solely to that petition.

The term “best available control technology” means an emission limitation based on the maximum degree of reduction of each pollutant subject to regulation under this chapter emitted from or which results from any major emitting facility, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant.

CAA § 169(3), 42 U.S.C. § 7479(3); *accord* 40 C.F.R. § 52.21(b)(12) (similar regulatory definition). As the Board recently explained in *In re Northern Michigan University (“NMU”)*, the BACT definition 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.” 14 E.A.D. 283, 291 (EAB 2009) (citations and quotations omitted). BACT is therefore a site-specific determination that results in the selection of an emission limitation representing application of control technology or methods appropriate for the particular facility. *In re Prairie State Generating Co.*, 13 E.A.D. 1, 12 (EAB 2006), *aff’d sub. nom Sierra Club v. U.S. EPA*, 499 F.3d 653 (7th Cir. 2007); *In re Three Mountain Power, LLC*, 10 E.A.D. 39, 47 (EAB 2001); *Knauf I*, 8 E.A.D. at 128-29.

In 1990, EPA issued draft guidance for permitting authorities to use in analyzing PSD requirements (among others) in a consistent and systematic way. *See generally* Office of Air Quality Planning & Standards, U.S. EPA, *New Source Review Workshop Manual 1* (draft Oct. 1990) (“*NSR Manual*”).<sup>3</sup> The NSR Manual sets forth a “top-down” process for determining BACT for each particular regulated pollutant that is summarized as follows:

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<sup>3</sup> Notably, the NSR Manual is not a binding Agency regulation, and consequently strict application of the methodology described in it is not mandatory nor is it the required vehicle for making BACT determinations. *E.g.*, *NMU*, 14 E.A.D. at 291; *Prairie State*, 13 E.A.D. at 6 n.2; *Knauf I*, 8 E.A.D. at 129 n.13. Nevertheless, because it provides a framework for determining BACT that assures adequate consideration of the statutory and regulatory criteria, it has guided state and federal permit issuers, as well as PSD permit applicants, on PSD requirements and policy for years. *E.g.*, *NMU*, 14 E.A.D. at 291-92; *In re Cardinal FG Co.*, 12 E.A.D. 153, 162 (EAB 2005); *see also In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 183 (EAB 2000) (“This top-down analysis is not a mandatory methodology, but it is frequently used by permitting authorities to ensure that a defensible BACT determination, involving consideration of all requisite statutory and regulatory criteria, is reached.”). The Region utilized the “top-down method” described in the NSR Manual when determining BACT emission limits for the PHPP permit. *See* U.S. EPA Region 9, Fact Sheet and Ambient Air Quality Impact Report for a CAA PSD Permit for PHPP (“Fact Sheet”) at 12 (Aug. 2011); RTC at 38.

The top-down process provides that all available control technologies be ranked in descending order of control effectiveness. The PSD applicant first examines the most stringent – or “top” – alternative. That alternative is established as BACT unless the applicant demonstrates, and the permitting authority in its informed judgment agrees, that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the most stringent technology is not “achievable” in that case.

*Id.* at B.2. Permit issuers apply the top-down method on a case-by-case basis to each permit they evaluate. *See id.* at B.1 (explaining that all BACT analyses are done case-by-case). The NSR Manual’s recommended top-down analysis employs five steps:

- Step 1: Identify all available control options with potential application to the source and the targeted pollutant;
- Step 2: Analyze the control options’ technical feasibility;
- Step 3: Rank feasible options in order of effectiveness;
- Step 4: Evaluate the energy, environmental, and economic impacts of the options; and
- Step 5: Select a pollutant emission limit achievable by the most effective control option not eliminated in a preceding step.

*Id.* at B.5-.9.

## VII. Analysis

In the analysis that follows, the Board considers each of the issues identified above and concludes that Mr. Simpson has not met his burden to demonstrate that the Region based its permit decision on a clearly erroneous finding of fact or conclusion of law, or that the Region abused its discretion in a manner warranting review. *See* 40 C.F.R. § 124.19(a). Accordingly, the Board denies Mr. Simpson’s petition for review.

- A. The Region Did Not Clearly Err or Abuse Its Discretion in Declining to Extend or Reopen the Public Comment Period

Mr. Simpson argues that the Region issued the Final Permit “in violation of notice and public participation” requirements by (1) denying his request to extend

the public comment period and (2) denying his request to reopen the public comment period. Pet. at 6-15. For the reasons discussed below, the Board concludes the Region did not clearly err or abuse its discretion with respect to either.

1. The Region Did Not Clearly Err or Abuse its Discretion in Declining to Extend the Public Comment Period

The public comment period for the PHPP permit was no fewer than thirty-four days. See Part V above. Near the close of the public comment period, Mr. Simpson sought to have the comment period extended, but the Region denied that request. As explained further below, the question the Board must decide is whether the Region clearly erred as a matter of law or abused its discretion in denying Mr. Simpson's request to extend the public comment period.

Permitting regulations governing the timing of the public comment period for a PSD permit provide that “[p]ublic notice of the preparation of a draft permit \* \* \* shall allow at least 30 days for public comment.” See 40 C.F.R. § 124.10(b). Section 124.13 provides that “[a] comment period longer than 30 days *may* be necessary to give commenters a reasonable opportunity to comply with the requirements of this section. Additional time *shall* be granted \* \* \* to the extent that a commenter who requests additional time *demonstrates the need* for such time.” *Id.* § 124.13 (emphasis added). The Board has traditionally read these provisions as establishing a minimum comment period length of 30 days, as well as authorizing the permit issuer, in its discretion, to extend the comment period. *In re Shell Offshore, Inc.* (“*Shell III*”), 15 E.A.D. 536, 604 (EAB 2012), *aff’d sub nom. Alaska Wilderness League v. EPA*, 727 F.3d 934 (9th Cir. 2013); see also *In re Genesee Power Station*, 4 E.A.D. 832, 841 (EAB 1993) (noting that the applicable regulation “only require[s] public comment periods to last 30 days”). Because the Region provided at least the regulatory minimum of thirty days for public notice and comment, the Board concludes Mr. Simpson has failed to demonstrate that the Region clearly erred. Thus, the Board must examine whether the Region abused its discretion when it did not extend the public comment period. See *In re Shell Gulf of Mex., Inc.* (“*Shell II*”), 15 E.A.D. 470, 521 (EAB 2012) (explaining the applicability of the abuse of discretion standard).<sup>4</sup>

In reviewing a permit issuer's determination not to extend a public comment period, the Board considers whether the public has received a meaningful opportunity to review and comment on a draft permit. See, e.g., *Genesee Power*, 4 E.A.D. at 842 (upholding the denial of an extension of the public comment period based on Board's conclusion that the public received a meaningful opportunity to make their views known and the permitting authority had demonstrated

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<sup>4</sup> As explained above in Part III, the Board will uphold a permitting authority's reasonable exercise of discretion if that decision is cogently explained and supported in the record.

that it took seriously all comments it had received); *cf. Conference of State Bank Supervisors v. Office of Thrift Supervision*, 792 F. Supp. 837, 844 (D.D.C. 1992) (denying claim that comment period should have been longer where statute did not require agency to provide more than 30-day comment period and 30 days was not unreasonable). The Board also considers the permit issuer's need to balance the public's desire for an extended review period against other factors, such as the permit issuer's obligation to timely issue or deny a permit application. *See Shell II*, 15 E.A.D. at 522-23 (denying request to extend the public comment period where the public comment periods on two permits ran concurrently and a petitioner interested in reviewing and commenting on both proceedings had requested additional time); *see also Shell III*, 15 E.A.D. at 606-07. This is particularly true in time-sensitive PSD permitting proceedings.<sup>5</sup> *See id.*

In this case, the Region provided a detailed explanation of its denial in the Response to Comments document. *See* RTC at 27-29; *see also id.* at 12-13, 15-16 (describing the Region's extensive public participation and outreach activities for the PHPP permit). The Region described the steps it took to notify the public of the proposed permit and stated that it believed the public notice provided allowed a reasonable opportunity to comment on the proposed permit. *Id.* at 12-13, 15-16. The Region "found no particular issue associated with the Project that warranted public review time beyond that established in the public notice and required by 40 C.F.R. Part 124." *Id.* at 28. The Region further stated that it did not "believe that the relevant information was particularly voluminous" or that the key documents were especially lengthy and concluded that the Mr. Simpson had not "demonstrated a need for additional time" as required by 40 C.F.R. § 124.13. *Id.* at 28-29.

Although Mr. Simpson requested additional time to comment on the draft permit, he failed to adequately demonstrate the need for more time as required by 40 C.F.R. § 124.13. Mr. Simpson's initial request for the extension, which was submitted on the 28th day of the 30-day public comment period, stated simply that an additional 30 days was needed to "submit more complete comments" due to the "massive amount of information to review." E-mail from Rob Simpson to Lisa Beckham, U.S. EPA Region 9 (Sept. 12, 2011, 09:31 PDT). Mr. Simpson did

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<sup>5</sup> Section 165(c) of the CAA requires that "[a]ny completed permit application \* \* \* be granted or denied not later than one year after the filing of such completed application." CAA § 165(c), 42 U.S.C. § 7475(c). Additionally, under the CAA, new source construction cannot begin prior to receiving a final permit. CAA § 165(a), 42 U.S.C. § 7475(a). In the event of an administrative appeal, a permit decision does not become effective until the appeal is resolved. 40 C.F.R. §§ 124.15(b), 124.19(f). Resolution of the appeal is also a prerequisite to seeking judicial review of the permit. *See* 5 U.S.C. § 704 (establishing that where agency regulations provide for an administrative appeal, agency action is not "final" for the purposes of judicial review until the administrative appeal is complete); 40 C.F.R. § 124.19(e)-(f). For these reasons, the Board considers PSD permitting proceedings to be time-sensitive.

not identify any issue for which he needed more time to consider or explain why the comment period was insufficient for that task. Later the same day, after the extension was denied, Mr. Simpson sent a second e-mail asking the Region to reconsider and indicating further that the documents posted on the docket “equated to [tens] of thousands of pages of information.” E-mail from Rob Simpson to Deborah Jordan, Dir., Air Div., U.S. EPA Region 9 (Sept. 12, 2011, 18:03 PDT). But again, Mr. Simpson identified no issue for which he needed more time to consider or explain why the comment period was insufficient for that task. Mr. Simpson’s bald assertions of a need for more time due to a voluminous record were simply insufficient to demonstrate a need for more time as contemplated by 40 C.F.R. § 124.13.

On appeal, Mr. Simpson attempts to bolster his argument that more time was necessary by again pointing to the volume of the permit record and, more specifically, referencing the volume of air quality modeling data files and documents from California Energy Commission (“CEC”) proceedings.<sup>6</sup> Pet. at 7. Even if the Board were to overlook the untimeliness of Mr. Simpson’s expanded justification for an extended comment period, Mr. Simpson continues to focus generically on the volume of the record and fails to identify, let alone demonstrate, any issue he needed more time to consider or explain why the comment period was insufficient for that task. In failing to do so, Mr. Simpson does not adequately address the Region’s response or explain why the Region’s explanation for its denial of an extension was insufficient. *See* NSR Standing Order ¶ 7 (requiring petitioners to “demonstrate with specificity, by citing to the applicable documents and page numbers, where in the response to comments the permit issuer responded to the comments and must explain why the permit issuer’s response to comments is inadequate”); *see also, e.g., In re City of Pittsfield*, NPDES Appeal No. 08-19, at 7, 11 (EAB Mar. 4, 2009) (Order Denying Review), *aff’d*, 614 F.3d 7, 11-13 (1st Cir. 2010); *see also* discussion in Part VI.B.1.b., below (discussing in more depth the obligation to confront the permitting authority’s responses to comments and the consequences for failing to do so).

Ultimately, in this case, the Region received and responded to numerous comments from Mr. Simpson as well as others. Mr. Simpson acknowledges that the Region made a number of changes to the permit. *See* Pet. at 10-15 (arguing that the changes made in the Final Permit rendered the Final Permit “drastically different” from the draft permit); *see generally* RTC at 58-62 (identifying the changes made to the permit). Most of these changes were made in response to the

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<sup>6</sup> The PHPP and its related facilities were subject to a parallel state permitting review process by the CEC. The CEC acts as the lead state agency under California’s Environmental Quality Act (Pub. Res. Code §§ 25519(c), 21000 et seq.), and its certification process includes a “comprehensive examination of a project’s potential economic, public health and safety, reliability, engineering, and environmental impacts.” CEC, Doc. No. CEC-800-2011-005, Presiding Member’s Proposed Decision at 1-2 to 1-3 (June 16, 2011) (A.R. VIII-3).

comments provided. The volume of comments received and the substantive issues raised by commenters on this permit support the Region's determination that the comment period provided adequate time for the public to provide informed and meaningful comment on the proposed PHPP permit. See *Shell II*, 15 E.A.D. at 523 n.71 (concluding that the fact that other commenters had provided substantive, technical comments on an issue suggested that the comment period was sufficient to allow opportunity for meaningful comment on that issue); see also *Fla. Power & Light Co. v. United States*, 846 F.2d 765, 772 (D.C. Cir. 1988) (upholding a short comment period as sufficient where the agency had received numerous comments, some lengthy, and the comments had had a "measurable impact" on the final rule); *State Bank Supervisors*, 792 F. Supp. at 844 (holding length of comment period not unreasonable especially in light of the comments that plaintiffs and other parties submitted). Additionally, in PSD cases such as this one, where the CAA itself requires a timely permit decision, the need to balance the public's desire for more time against the need for expedited review weighs more heavily against extending the public comment period beyond that which is required. See note 5 and accompanying text above (citing *Shell II*, 15 E.A.D. at 523). Taking into account the comment period provided and the time-sensitive nature of this PSD permitting decision, the Board concludes that the Region did not clearly err as a matter of law or abuse its discretion in declining Mr. Simpson's request to extend the public comment period for the PHPP permit.

2. The Region Did Not Abuse Its Discretion in Declining to Reopen the Public Comment Period Based on Any of the Identified Changes or Additions to the Final Permit

Mr. Simpson next argues that the Region erred in denying his request to reopen the comment period because comments submitted raised "substantial new questions." See Pet. at 7-10. Mr. Simpson also argues that the Region was required to reopen the public comment period to allow for meaningful public comment on the substantial changes made to the permit. See *id.* at 10-15. Although raised as separate issues, both of these arguments ultimately allege one error – the failure to reopen the public comment period after it had closed. As explained further below, the determination of whether to reopen a public comment period is discretionary. Thus, the question the Board considers is whether the Region abused its discretion in declining to reopen the public comment period.

Permitting regulations provide that a permitting authority may reopen a public comment period "[i]f any data[,] information[,] or arguments submitted during the public comment period \* \* \* appear to raise substantial new questions concerning the permit." See 40 C.F.R. § 124.14(b). The Board previously has observed that "[t]he critical elements [of this regulation] are that new questions must be 'substantial' and that [the region] 'may' take action." *Dominion I*, 12 E.A.D. at 695 (quoting *In re NE Hub Partners, LP*, 7 E.A.D. 561, 585 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3rd Cir. 1999)).

Thus, we review a permitting authority's decision not to reopen the comment period under an abuse of discretion standard and afford the permitting authority substantial deference.<sup>7</sup> *In re Dominion Energy Brayton Point, LLC* ("Dominion II"), 13 E.A.D. 407, 416 (EAB 2007); *see also In re Old Dominion Elec. Coop.*, 3 E.A.D. 779, 797 (Adm'r 1992).

A permitting authority is not required to reopen a public comment period based on changes it makes to the permit, as long as the changes are the "logical outgrowth" of the public comment process. *See Old Dominion*, 3 E.A.D. at 797-98 (observing that the revised permit in that matter was by all counts a "logical outgrowth" of the notice and comment process and denying review of the region's decision not to reopen the public comment period); *cf. Natural Res. Def. Council v. EPA*, 279 F.3d 1180, 1186 (9th Cir. 2002) (observing that it would be "antithetical to the whole concept of notice and comment" if a final permit was required to be identical to the corresponding draft permit and that it is, in fact, the expectation that final permit decisions will be somewhat different and improved from those originally proposed); *D.C. Water & Sewer Auth.*, 13 E.A.D. at 758-59 (explaining that the notice and comment process is expected to lead to changes or refinement in the final permit – or, in this case, the permit analysis – and that if those changes constitute a "logical outgrowth" of the comments received then the law does not require the permitting authority to reopen the public comment period).

A permitting authority also is not required to reopen the public comment period based simply on the receipt of new information. *See, e.g., Dominion II*, 13 E.A.D. at 416 (deferring to the region's determination to not reopen the comment period based on "new information" considered); *see also* 45 Fed. Reg. 33,290, 33,412 (May 19, 1980) (recognizing during the promulgation of PSD permitting regulations that "if all new material in a response to comments required reproposal, the [A]gency would be put to the unacceptable choice of either providing an inadequate response or embarking on the same kind of endless cycle of reproposals which the courts have already rejected" (citing *Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 632 n.51 (D.C. Cir. 1973))). Permitting regulations specifically contemplate that a permitting authority may expand and revise its analysis in response to public comment and that new information may be added to the record as appropriate in support of the permitting authority's responses to comments. *See* 40 C.F.R. §§ 124.17, .18 (requiring the permitting authority to respond to comments and to include in the administrative record any new materials supporting its response to public comments).

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<sup>7</sup> As explained above, the Board will uphold a permitting authority's reasonable exercise of discretion if that decision is cogently explained and supported in the record. *See* Part III (discussing the abuse of discretion standard).

In exercising its discretion to reopen (or decline to reopen) a public comment period, factors that may inform a permitting authority's decision include "whether permit conditions have changed, whether new information or new permit conditions were developed in response to comments received during prior proceedings for the permit, whether the record adequately explains the agency's reasoning so that a dissatisfied party can develop a permit appeal, and the significance of adding delay to the particular permit proceedings." *Dominion II*, 13 E.A.D. at 416 n.10 (citing *NE Hub*, 7 E.A.D. at 584-88; *Old Dominion*, 3 E.A.D. at 797-98).

In this appeal, Mr. Simpson identifies five changes to the draft permit or the Region's analysis that allegedly raised substantial new questions or otherwise required the Region to reopen the comment period: (a) revisions to the Agency's BACT analysis with respect to carbon capture and sequestration ("CCS") as a control technology; (b) changes with respect to the Agency's position on solar power as a control technology; (c) revisions to emissions limits for particulate matter; (d) changes to the startup and shutdown emissions limits; and (e) the establishment of a maximum heat rate as BACT for GHGs. As explained fully below, these changes occurred in response to – or as a logical outgrowth of – the comments received, did not raise substantial new questions, and were cogently explained and supported by the Region in the response to comments document.

Additionally, in considering each of these changes below, the Board is cognizant that these are time-sensitive PSD permitting proceedings, *see* Part VII.A.1, and any additional delay caused by reopening the comment period would be significant.

a. *CCS*

With respect to CCS, the Region concluded at the draft permit stage that CCS was technically infeasible based on the "logistical barriers of constructing such a pipeline (e.g., land acquisition, permitting, liability, etc.)" and thus excluded it as a control option for the project. U.S. EPA Region 9, Fact Sheet and Ambient Air Quality Impact Report for a CAA PSD Permit for PHPP ("Fact Sheet") at 28-29 (Aug. 2011) (A.R. IV-2). In response to comments asserting that "the argument against CCS is not one of technical infeasibility but one of cost," *see* Rob Simpson's Comments on Palmdale ("Pet. Ex. C") at 46 (Sept. 14, 2011) (A.R. V-15), the Region acknowledged the limited data in EPA's record regarding potential technical and logistical barriers related to the building of CO<sub>2</sub> pipelines for PHPP. RTC at 37-38. Rather than unnecessarily spending the time and resources to develop these data, the Region instead considered whether CCS could be economically feasible if the technical barriers could be overcome. To do this, the Region compared the annual cost of CCS to the annual capital costs of the project and estimated that the annual cost of CCS would be more than twice the value of the estimated annualized capital cost of the entire PHPP facility. *Id.*

at 38; *see also* Part VII.B.2.b (quoting Region’s analysis). Consequently, the Region excluded CCS as being economically infeasible.<sup>8</sup> In the end, although the Region expanded its analysis, the Region’s ultimate determination – the exclusion of CCS as a control technology at PHPP – *remained unchanged*.

Nothing in the Region’s response to comments raised substantial new questions regarding the technical feasibility of CCS that necessitated reopening the public comment period. In response to Mr. Simpson’s comment, the Region simply proceeded to evaluate the economic feasibility of CCS, rather than developing more detailed data on its technical feasibility. This refinement to the Agency’s rationale for excluding CCS as a control technology, rather than raising substantial new issues, simply responded to comments on an issue that already had been part of the permit proceedings. The mere refinement of an analysis or the addition of new material to support an unchanged permit condition does not necessitate the reopening of the comment period. *See, e.g., Dominion I*, 12 E.A.D. at 696 (concluding that the region did not abuse its discretion in declining to reopen comment period where it added new information to amend its analyses, “which resulted in somewhat similar results as before and which did not change the [r]egion’s ultimate determination regarding the permit conditions”); *see also Dominion II*, 13 E.A.D. at 416 (denying review of the region’s decision not to reopen the public comment period on remand for input on “new information” the region had considered where permit limits remained unchanged and analysis merely was revised).

Moreover, the Region provided a clear explanation for how it evaluated the economics of CCS. That explanation was sufficient to enable Mr. Simpson to fully raise this issue on appeal, the substance of which the Board addresses below in Part VI.B.2.b. For these reasons, the Board concludes the Region did not abuse its discretion in declining to reopen the public comment period on this issue. *See Dominion II*, 13 E.A.D. at 416 n.10 (citing *NE Hub*, 7 E.A.D. at 584-88; *Old Dominion*, 3 E.A.D. at 797-98).

#### b. *Solar Power Generation*

In response to the draft permit, Mr. Simpson commented that there should be “[a] permit condition requiring the 50 Mega Watt[s] (MW) [of] solar generation” that the Region had described in a footnote in the Fact Sheet. Pet. Ex. C at 47. The Region agreed and added conditions to the permit to require construction and operation of the solar-thermal plant as proposed by the permit applicant. RTC at 39-40. In its Response to Comments document, the Region explained that it was incorporating the solar power generation as part of the GHG BACT deter-

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<sup>8</sup> This method of analysis eliminated CCS at the fourth step of the BACT analysis (energy, environmental, and economic analysis), instead of ruling CCS out at the second step (technical feasibility). RTC at 37-38; *NSR Manual* at B.8-.9, .26-.53; *see also* discussion below Part VII.B.2.b.

mination in response to comments received, limiting the requirement to the scope of the proposed project. *Id.* at 40; *see also* Part VII.B.2.a, below (further discussing the Region's response).

The Region's incorporation of the solar power component (as described initially by the permit applicant, and as stated in the Fact Sheet to the proposed permit) as a condition of the permit was a "logical outgrowth" of the permitting process. *See Old Dominion*, 3 E.A.D. at 797-98; *cf. Int'l Harvester*, 478 F.2d at 632 n.51 (recognizing that to subject every change made to a rule in response to public comment to a new round of public comment could "lead to the absurdity that in rule-making under the APA the agency can learn from the comments on its proposals only at the peril of starting a new procedural round of commentary"). The change was directly responsive to the public comments received. Clearly, the Region's explanation of this change was sufficient to enable Mr. Simpson to challenge on appeal the Region's GHG BACT analysis with respect to solar power generation, the substance of which is addressed in Part VII.B.2.a, below. Thus, with respect to the added solar power component to the permit, the Board concludes that the Region did not abuse its discretion in declining to reopen the public comment period.

### c. *Particulate Matter*

During the public comment period, the permit applicant commented that the emissions limits for particulate matter ("PM") were unachievable and provided additional information in support of that assertion. RTC at 49-50. The Region considered the new information provided, as well as the controls and limits at various other facilities, and observed relevant distinctions among the different facilities, including the proposed PHPP. *Id.* at 50-51, 52. Ultimately, the Region revised the PM limits taking into account variability between various manufacturers and test results identified. *Id.* at 50-52. Mr. Simpson argues that the public should have been given the opportunity to comment on the new information submitted as well as the "drastically different" PM limits in the Final Permit. Pet. at 10-13.

Despite Mr. Simpson's argument to the contrary, the Region is not required to reopen the comment period when it revises permit limits based on new information supplied during the public comment period. *See, e.g., Dominion II*, 13 E.A.D. at 416; *see also Old Dominion*, 3 E.A.D. at 797-98; *cf. Int'l Harvester*, 478 F.2d at 632 n.51. The fact that a permit applicant might provide new data supporting modification to a BACT analysis and related permit limit revisions, as happened here, is foreseeable and a logical outgrowth of the public comment period. Additionally, the Region's discussion of BACT for PM and PM emissions limits in its Response to Comments document provided a clear and reasoned explanation of the additional analyses conducted and the related Final Permit revisions. RTC at 49-52 (explaining its revisions to the BACT limits for PM "after

considering the new information provided” and after examining the limits imposed at at least five other facilities using the same and different types of turbine and manufacturer as proposed to be used by PHPP). Because the Region provided a reasoned explanation of this issue, allowing Mr. Simpson to fully challenge this issue on appeal,<sup>9</sup> the Board concludes the Region was not required to reopen the public comment period with respect to its final analysis and conclusions concerning PM.

d. *Startup/Shutdown Limits for Nitrogen Oxides and Carbon Monoxide*

During the comment period, the permit applicant requested that the Region remove the hourly startup and shutdown limits for nitrogen oxides (“NO<sub>x</sub>”) and carbon monoxide (“CO”) and replace them with a combined NO<sub>x</sub> limit for cold startup for both combustion turbines, in part because the permit applicant thought the limits were not achievable based on modeled emission rates and the assumptions upon which the modeling was based. RTC at 54. At the same time, Mr. Simpson commented that the startup and shutdown limits “were not comparable with current BACT limits for similar sources” that had more stringent emissions limits. *Id.* at 47. After fully considering the comments, the Region did not remove the shutdown emission limit for CO as requested by the permit applicant. *Id.* at 54-55. Nor did the Region apply the emissions limits Mr. Simpson provided from “similar sources” which, the Region explained, used two different types of non-comparable turbine technology. *Id.* at 47-48. The Region did, however, revise the startup and shutdown limits for NO<sub>x</sub> and CO based on the modeled emissions rates to which the permit applicant had referred to ensure that the limits would be achievable over time. *Id.* at 54-55.

As described above, the Region made changes to the startup and shutdown limits for NO<sub>x</sub> and CO as a direct result of its consideration of comments received. The changes made were a logical outgrowth of the comments received during the public comment period. *See id.* The Region’s response explained in detail why it revised the permit as it did (or did not revise the permit with respect

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<sup>9</sup> The Board does not believe the merits of the PM emissions limits were challenged in the Petition, notwithstanding the fact that the Region defends the changes it made to these limits in its brief. *See Reg. Resp.* at 17-21. Mr. Simpson raised PM emissions limits only in the context of the Region’s alleged failure to reopen the public comment period. *See Pet.* at 7, 10, 11-13. Even if Mr. Simpson intended to substantively challenge the PM emissions limits on appeal, he made no attempt to demonstrate why the Region’s explanation for these revisions was inadequate, as is required by Board precedent as well as the Board’s Standing Order for NSR Appeals. *See NSR Standing Order ¶ 7; Pittsfield*, at 7, 11. The failure to confront the Region’s rationale for the PM emissions limits in the permit would be fatal to this issue if Mr. Simpson did intend to raise it and if threshold requirements had been met. *See Part III* above; *see also Part VII.B.1.b.* below (discussing more in depth the obligation to confront the permitting authority’s responses to comments and the consequences for failing to do so).

to some comments) and provided the basis for the Final Permit startup and shutdown limits for NO<sub>x</sub> and CO that it selected. *See id.* at 47-48, 54-55 (weighing comments by both Mr. Simpson and the permit applicant and determining, based on the Region's evaluation of PHPP and other facilities and the modeling provided, that its revisions to the startup and shutdown limits were appropriate). Again, Mr. Simpson was given an adequate basis from which to fully challenge the startup and shutdown limits on appeal.<sup>10</sup> Thus, the Board again concludes that the Region did not abuse its discretion in declining to reopen the public comment period on this issue.

e. *Maximum Heat Rate*

During the public comment period, Mr. Simpson specifically commented that the PSD permit must contain "some quantifiable and verifiable heat rate" for the turbines as BACT for GHG emissions. Pet. Ex. C at 52. In response, the Region explained that "three separate limits on GHG emissions" were included in the permit, but the Region also decided to revise the permit to add a maximum heat rate as suggested. RTC at 46. The Region selected a source-wide maximum heat rate in the permit that was higher than that suggested by Mr. Simpson in comments and also higher than that listed in the permit applicant's GHG BACT analysis.<sup>11</sup> *Id.* at 53-54; *see* Final Permit at 8. In doing so, the Region explained that it considered a variety of factors that can affect heat rate, including seasonal variations (i.e., temperature, humidity) and equipment degradation, and set the higher limit to ensure that the limit is "achievable over various operating conditions and during the life of the equipment." RTC at 54. The final source-wide net heat rate is comparable to, and in fact lower than, permitted or proposed heat rate limits of other sources the Region considered. *Id.*

The inclusion of a source-wide maximum heat rate in the Final Permit was clearly a logical outgrowth of comments received and raised no substantial new questions, notwithstanding Mr. Simpson's dissatisfaction with the specific heat

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<sup>10</sup> The Region defends the merits of the changes it made to startup and shutdown permit limits for NO<sub>x</sub> and CO. *See* Reg. Resp. at 21-23. These limits, however, were not properly challenged in the petition. Rather, Mr. Simpson raised the issue of startup and shutdown limits only in the context of the Region's alleged failure to reopen the public comment period. *See* Pet. at 10-14; *see also* note 9 above. Even if Mr. Simpson intended to challenge the substance of these revised limits, Mr. Simpson made no attempt to demonstrate why the Region's explanation for the revisions to the startup/shutdown limits was inadequate, as is required. *See* Part III above. Mr. Simpson's failure to confront the Region's rationale for the changes, as provided in the Response to Comments document, would be fatal to this issue, if Mr. Simpson did intend to raise it and if threshold requirements had been met.

<sup>11</sup> In this context, a "higher" maximum heat rate, measured in British Thermal Units per kilowatt hour (Btu/KWh), reflects lower thermal efficiency and implicates greater GHG emissions. A "lower" maximum heat rate is more stringent and more environmentally protective. *See generally* RTC at 53-54.

rate included in the permit. Mr. Simpson makes no attempt to explain how the inclusion of the heat rate, or the Region's explanation of the specific rate selected, raised "significant new questions" warranting a reopening of the public comment period. Moreover, the Region's explanation of this change was thorough and clear and provided a sufficient basis from which to appeal.<sup>12</sup> Thus, the Board concludes that the Region did not abuse its discretion in not reopening the public comment period based on its inclusion of a maximum heat rate.

B. The Region Did Not Clearly Err or Abuse Its Discretion in Determining BACT for Emissions of GHGs

In his appeal, Mr. Simpson raises four challenges to the Region's BACT analysis for GHGs. Pet. at 16-29. First, Mr. Simpson asserts that the Region failed to identify algae ponds as an available control technology in step 1 of its BACT analysis.<sup>13</sup> *Id.* at 18-19. Second, Mr. Simpson challenges the Region's analysis of the solar power component and essentially argues that the Region should have considered alternative solar power configurations. *Id.* at 18, 20-25. Third, Mr. Simpson claims that in step 3 of its BACT analysis, the Region failed to properly rank the control technologies.<sup>14</sup> *Id.* at 18, 25. Fourth, Mr. Simpson alleges that in step 4 of its BACT analysis, the Region improperly dismissed one control technology, CCS, as economically infeasible. *Id.* at 18, 26-29.

The Region asserts that for the first and third issues, Mr. Simpson has failed to meet the threshold requirements for Board review. Reg. Resp. at 26, 32. As explained above, *see* Part III, Mr. Simpson bears the burden of meeting certain

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<sup>12</sup> As with the changes to the PM emissions limits and the startup and shutdown limits, it is unclear whether Mr. Simpson intended to challenge the maximum heat rate on the merits. Unlike the CCS and solar power issues, Mr. Simpson raised the maximum heat rate issue only in the context of the alleged failure to reopen the public comment period. Pet. at 10, 14-15. In any event, Mr. Simpson has not met his burden to demonstrate why the Region's explanation for the maximum heat rate included was inadequate. *See* Part III above. Although Mr. Simpson plainly suggests on appeal that a different maximum heat rate has been achieved at "comparable facilities" that he lists, Mr. Simpson does not attempt to argue, let alone support, that such a limit would be achievable over time at PHPP taking into account given variability in operating conditions including seasonal variations (e.g., temperature, humidity) and equipment degradation – all factors the Region identified as relevant to the maximum heat rate set. *See* RTC at 54. Thus, even if Mr. Simpson intended to challenge the maximum heat rate in this appeal and the Board were willing to overlook the untimeliness of this added argument, the Board would deny review of this issue based on Mr. Simpson's failure to address the Region's responses to comments by explaining why the Region's rationale for the maximum heat rate was erroneous. *See* Part III above.

<sup>13</sup> Although Mr. Simpson more generally alleges that the Region "failed to identify all available control technologies," Pet. at 18, on appeal, he identifies only one overlooked technology – "carbon sequestration in algae ponds," *id.* at 19.

<sup>14</sup> As briefly explained above in Part VI, in step 3 of the BACT analysis, the permit issuer ranks the remaining control technologies in their order of effectiveness.

threshold pleading requirements, and failure to do so constitutes grounds for denial of review.

1. Threshold Procedural Issues

a. Mr. Simpson Has Not Preserved for Review the Issue of Whether the Region Properly Ranked the GHG Control Technologies

The permitting regulations require any person who believes that a permit condition is inappropriate to raise “all reasonably ascertainable issues and \* \* \* all reasonably available arguments supporting [petitioner’s] position” during the comment period on the draft permit. 40 C.F.R. § 124.13. That requirement is a prerequisite to appeal under part 124, which requires that a petitioner must “demonstrat[e] that any issue[] being raised [was] raised during the public comment period \* \* \* to the extent required.” *Id.* § 124.19(a); *see also* NSR Standing Order ¶ 7 (requiring petitioners in NSR appeals to demonstrate “that any issues being raised were either raised during the public comment period or were not reasonably ascertainable, as provided in 40 C.F.R. § 124.13”).

As the Board has explained, “[t]he regulatory requirement that a petitioner must raise issues during the public comment period ‘is not an arbitrary hurdle, placed in the path of potential petitioners simply to make the process of review more difficult; rather it serves an important function related to the efficiency and integrity of the overall administrative scheme.’” *In re Christian Cnty. Generation, LLC*, 13 E.A.D. 449, 459 (EAB 2008) (quoting *In re BP Cherry Point*, 12 E.A.D. 209, 219 (EAB 2005)). “The purpose of such a provision is to ‘ensure that the Region has an opportunity to address potential problems with the draft permit before the permit becomes final, thereby promoting the longstanding policy that most permit decisions should be decided at the regional level, and to provide predictability and finality to the permitting process.’” *Shell I*, 13 E.A.D. at 394 n.55 (quoting *In re New Eng. Plating Co.*, 9 E.A.D. 726, 732 (EAB 2001)); *accord In re ConocoPhillips Co.*, 13 E.A.D. 768, 800 (EAB 2008). The Board frequently has rejected appeals where issues that were reasonably ascertainable during the comment period were not raised at that time, but instead were presented for the first time on appeal. *E.g.*, *In re Indeck-Elwood, LLC*, 13 E.A.D. 126, 165-69 (EAB 2006); *BP Cherry Point*, 12 E.A.D. at 218-20; *In re Kendall New Century Dev.*, 11 E.A.D. 40, 54-55 (EAB 2003).

Here, Mr. Simpson contends that the Region failed to properly rank the GHG control technologies in step 3, as is required in a top-down BACT analysis. Pet. at 25. In particular, Mr. Simpson lists several types of information that he argues the Region should have included in its analysis to “properly rank” the remaining technologies. *See id.* Mr. Simpson, however, has not pointed to any place in the administrative record where he, or any other commenter, raised this issue

during the public comment process. Nor is the Board able to identify any of Mr. Simpson's comments that raise this issue.<sup>15</sup> *See generally* Pet. Ex. C. The Board is not willing, nor is it required, to scour the entire administrative record to determine whether anyone else commented on this point. *ConocoPhillips*, 13 E.A.D. at 801 (“[I]t is not the Board’s responsibility ‘to scour the record to determine whether an issue was properly raised below.’” (quoting *Shell I*, 13 E.A.D. at 394-95 n.55)); *Encogen*, 8 E.A.D. at 250 n.10 (same); *see also Dominion I*, 12 E.A.D. at 564 n.114 (“[W]e do not find any support for Petitioner’s argument and will not scour the record to find documents that support it.”). Accordingly, the Board concludes that Mr. Simpson did not preserve this issue for review.<sup>16</sup>

b. Mr. Simpson Has Failed to Confront the Region’s Responses to Comments Concerning the Use of Algae Ponds as a Potential Control Technology by Explaining Why Those Responses Were Clearly Erroneous

As explained in Part III, a petitioner must, as a threshold matter, explain *why* the permit issuer’s previous response to its objections is clearly erroneous or otherwise deserves review and may not simply reiterate comments it submitted on the draft permit. *See* NSR Standing Order ¶ 7 (requiring petitioners to “demonstrate with specificity, by citing to the applicable documents and page numbers, where in the response to comments the permit issuer responded to the comments and must explain why the permit issuer’s response to comments is inadequate”); *see also, e.g., Pittsfield*, at 7, 11, *aff’d*, 614 F.3d 7, 11-13 (1st Cir. 2010); *In re Peabody W. Coal Co.*, 12 E.A.D. 22, 33, 51-53 (EAB 2005); *In re City of Irving*, 10 E.A.D. 111, 129-30 (EAB 2001), *review denied sub nom. City of Abilene v. EPA*, 325 F.3d 657 (5th Cir. 2003).

In his comments on the draft permit, Mr. Simpson twice raised the issue of using algae ponds as a potential control technology, both times in a cursory manner. In generally discussing other potential control technologies he believed the Region should consider, he asked the question: “What about algae ponds?”<sup>17</sup> Pet. Ex. C at 46. He later asserted that “[c]arbon sequestration in algae ponds is a feasible technology to capture GHG emission[s]” from the proposed facility and thus “should be included in the BACT evaluation for GHG emissions.” *Id.* at 52.

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<sup>15</sup> In his comments, Mr. Simpson did not identify as missing any of the types of information that he now alleges are missing from the BACT analysis.

<sup>16</sup> To the extent that Mr. Simpson is challenging the Region’s BACT analysis as it pertains to solar or CCS technologies, these two issues are addressed below in Parts VII.B.2.a and b.

<sup>17</sup> Mr. Simpson also asked about tree planting, but did not challenge the Region’s failure to consider tree planting as a potential control technology on appeal.

He did not provide any additional information or analysis of the potential use of algae ponds by power plants or other facilities.

The Region provided a short response to these two brief comments. RTC at 38-39, 46; *see also id.* at 40-41 (responding to general comment about additional control technologies). The Region viewed algae ponds, as well as tree planting (the other potential control technology Mr. Simpson explicitly referenced), as “pollutant mitigation or offset practices,” which the Region explained, it does not consider in the PSD BACT analysis. *See id.* at 38-39. Later, in responding to Mr. Simpson’s comment recommending consideration of “carbon sequestration in algae ponds” as a feasible control technology, the Region stated that, “[a]s discussed [in the previous response], we do not believe algae ponds are a GHG technology at this time. The commenter has not provided any information indicating that the use of algae ponds is *currently available* for carbon sequestration.” *Id.* at 46 (emphasis added).

Mr. Simpson’s petition does not confront the Region’s responses to his comment. While acknowledging that the Region responded to his comment, *see Pet.* at 19 (quoting RTC at 39), he does not rebut the Region’s statements in any way. In fact, the bulk of his argument on this issue consists of a recital of his comment and the Region’s response. *See id.* This is not sufficient to demonstrate that review is warranted on this issue. *See, e.g., Native Vill. of Kivalina IRA Council v. EPA*, 687 F.3d 1216, 1221 (9th Cir. 2012) (“Because [petitioner] did not engage the EPA’s responses to public comments, it did not meet its burden of showing that EAB review \* \* \* was warranted.”), *aff’g In re Teck Alaska, Inc.*, NPDES Appeal No. 10-04 (EAB Nov. 18, 2010); *Mich. Dep’t Env’tl. Quality v. EPA*, 318 F.3d 705, 708 (6th Cir. 2003) (“[Petitioner] simply repackag[ing] its comments and the EPA’s response \* \* \* does not satisfy the burden of showing entitlement to review.”), *aff’g In re Wastewater Treatment Facility of Union Twp.*, NPDES Permit No. 00-26 & 00-28 (EAB Jan. 23, 2001) (Order Denying Petitions for Review); *Indeck*, 13 E.A.D. at 170 (“[A] petitioner’s failure to address the permit issuer’s response to comments is fatal to its request for review.”); *Peabody*, 12 E.A.D. at 33 (“[P]etitioner may not simply reiterate comments made during the public comment period, but must substantively confront the permit issuer’s subsequent explanations.”).

Confronting a permit issuer’s explanation is particularly important in technical matters, where the Board defers to the technical expertise of the permit issuer. *Pittsfield*, at 8 & n.6; *see also, e.g., In re Town of Westborough*, 10 E.A.D. 297, 311-12 (EAB 2001) (“declin[ing] to second-guess the Region’s technical judgments and explanations for rejecting [petitioner’s] alternate approach” where petitioner failed to address permit issuer’s substantive responses to comments on

these technical issues). The “availability”<sup>18</sup> of algae ponds as a control technology is a highly technical issue, and Mr. Simpson has provided no basis for second-guessing the Region’s judgment.

In sum, Mr. Simpson has failed to confront the Region’s response to his comments on algae ponds or to explain why the Region’s conclusion was clearly erroneous. Mr. Simpson has therefore failed to demonstrate that review is warranted on this issue.

## 2. Substantive Issues

### a. The Region Did Not Clearly Err or Abuse Its Discretion in Setting BACT for GHGs Based on the Proposed Solar Thermal Component for PHPP

In the Final Permit, the Region established BACT emission limits for GHGs after taking into account the proposed solar thermal component, which was designed to generate up to 50 MW of power. RTC at 40; Reg. Resp. at 28. On appeal, Mr. Simpson challenges the Region’s analysis of the solar power component and essentially argues that the Region should have considered alternative, unspecified solar power configurations. Pet. at 20-22. In response, the Region explains that it was unnecessary to consider alternative solar configurations that would increase the amount of solar power generated beyond the proposed 50 MW because such alternative configurations would not meet the project’s primary purpose and thus would run afoul of the Agency’s policy against “redefining the source.” Reg. Resp. at 28. The Region also reiterated that any additional solar power at the site would be infeasible due to space constraints. *Id.* The question the Board considers, therefore, is whether the Region clearly erred or abused its discretion in setting BACT for GHGs based on the 50 MW solar thermal component as proposed by the applicant.

#### (i) Relevant Facts

PHPP is a proposed hybrid, natural gas-solar plant, the primary purpose of which is “to provide 570 MW of baseload power to increase the reliability of the electrical supply” for the City. RTC at 40; *see also* City of Palmdale, Application for PSD Permit for PHPP (“PSD Application”) at 2-1 (Mar. 2009) (A.R. I-1) (proposed project overview). While PHPP would predominantly be a natural gas-powered facility, one of the City’s stated objectives is to use solar technology

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<sup>18</sup> In this context, “availability” refers to “those air pollution control technologies or techniques with a practical potential for application to the emissions unit and the regulated pollutant under evaluation.” *NSR Manual* at B.5 (summarizing step 1 analysis); *accord In re Gen. Motors, Inc.*, 10 E.A.D. 360, 364 n.4 (EAB 2002).

to generate a portion of the facility's power output (up to 50 MW) in support of California's renewable energy goals. See Memorandum from H. Balentine & S. Head, AECOM, to L. Bingham & J. Lapka, U.S. EPA, *Response to EPA Comments on PHPP GHG BACT Analysis* at 3 (July 15, 2011) (A.R. I-24) [hereinafter *Suppl. GHG BACT Analysis*] (defining and expanding upon the business purpose of PHPP in response to EPA request); see also RTC at 40; Fact Sheet at 5 ("On sunny days, the solar array is capable of providing 50 MW of the total electrical generation from the steam turbine."). More specifically, the City seeks to integrate the solar component and its combined-cycle component in a way that maximizes the synergies between the two technologies to increase the Project's efficiency. *Suppl. GHG BACT Analysis* at 3. The Project thus is designed so that "[d]uring periods when the solar collectors are in use (i.e., daytime when the sun is shining on the site), the solar field will provide heat directly to the [heat recovery steam generators] to produce more steam, which will allow the facility to reduce firing of the duct burners[, which are powered by natural gas]. This design feature enhances the Project's ability to respond to the energy markets by providing additional power during peak demand periods (e.g., hot summer afternoons), while consuming less natural gas fuel." PSD Application at 2-3.

The proposed PHPP will be located on a 333-acre<sup>19</sup> parcel owned by the City. Draft Permit at 1; Final Permit at 1. As currently designed, the solar array fields utilize 251 out of the 333 acres (approximately 75% of the property). See Fact Sheet at 5. The remaining property is utilized for the plant's power block (26 acres) and for an access road through the solar panel fields to the plant, setbacks, and drainage facilities (56 acres combined). CEC, Final Staff Assessment for the Palmdale Hybrid Power Project at 3-1, figs. 2-3b & 2-4 (Dec. 2011) (A.R. VIII-2) [hereinafter CEC FSA]; see also PSD Application fig. 2-2.

In order to construct PHPP, the City is required to obtain a PSD permit from EPA as well as obtain State and local construction approvals for the project. Fact Sheet at 3; see also PSD Application at 1-1. The local Antelope Valley Air Quality Management District issued a final Determination of Compliance for the Project on May 13, 2010, and the California Energy Commission issued its Final Commission Decision approving the project's Application for Certification on August 10, 2011.<sup>20</sup> Fact Sheet at 3. Shortly thereafter, in August of 2011, the Region issued a proposed PSD permit (i.e., draft permit) along with a Fact Sheet and

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<sup>19</sup> Although the Response to Comments document states that the project site is 331 acres, RTC at 40, all other administrative record references to the project size state that PHPP will be 333 acres. E.g., Final Permit at 1; Fact Sheet at 2; Draft Permit at 1; PSD Application at 2-1. The sum total of the acreage for the solar array field, power block, drainage ditches, and setbacks is 333 acres. Thus, the Board assumes for the purpose of this decision that the correct acreage is 333.

<sup>20</sup> The Region included both of these documents in the administrative record for its PSD permitting decision. See A.R. VI-11, VIII-5.

Ambient Air Quality Impact Report. See EPA Region 9's Excerpts of the Record index.

In the Fact Sheet, the Region stated that “the project design includes 50 MW of potential solar thermal power generation, which represents an inherently lower-emitting technology for the facility as a whole.” Fact Sheet at 27 n.28. The Region did not, however, expressly state whether it had taken into account the 50 MW solar component proposed by the applicant in making its BACT determination for GHGs. Reg. Resp. at 27; see Fact Sheet at 27-31 (BACT analysis for GHGs); see also Fact Sheet at 3, 5 (generally mentioning the solar component). Nor did the Region explicitly require the permit applicant to operate the solar component as a condition of the draft permit. Reg. Resp. at 27; see Fact Sheet at 27-31 (BACT analysis for GHGs).

In his comments on the draft permit, Mr. Simpson raised very general concerns about the solar component of the proposed project. See Pet. Ex. C at 47. He first stated that the Region “appear[ed] to indicate” that solar power was considered by the Region to be a GHG control technology and that, “[w]hile [he] could agree with this interpretation[,] the solar component does not appear to [be] regulated by the PSD permit.” *Id.* He contended that the solar component might be a “scam” and that the permit applicant might never construct some or all of it. *Id.* Thus, he argued, “the Permit should include a condition requiring 50 MW of solar generation.” *Id.* He also posed two questions: “If 50 MW of solar represents a control technology[,] would a greater solar component represent greater control? What is the ideal ratio of solar to natural gas for maximum GHG and [environmental justice] benefits for this proposal?” *Id.*

In response to these comments, the Region first addressed Mr. Simpson's assertion that the proposed permit lacked a condition requiring the solar component. The Region acknowledged Mr. Simpson's concern stating:

Upon review of this comment, we find it appropriate to clearly state that the solar component is a lower-emitting GHG technology at this facility. Because the solar component is integrated into the heat recovery portion of the [P]roject, it has the potential to reduce GHG emissions by reducing use of the duct burners during peak energy demand. The Project, as described in the application, includes the development of 50 MW of solar energy. As an integrated part of the Project with the ability to reduce GHG emissions, we consider the solar component to be part of the GHG BACT determination for the combustion turbines and associated heat recovery system.

RTC at 39-40. Consequently, “to ensure that the solar component is a required part of the facility,” the Region added several permit conditions explicitly “*requir[ing]* construction of a solar-thermal plant designed to generate 50 MW of power.”<sup>21</sup> *Id.* (emphasis added).

Then, addressing Mr. Simpson’s questions regarding whether a greater solar component would represent greater control and what the ideal ratio of solar to natural gas might be, the Region explained:

While EPA agrees that for any project there are less GHG emissions per [megawatt hour] from solar energy than from fossil fuel energy, the primary purpose of PHPP is to provide 570 MW of baseload power to increase the reliability of the electrical supply for the City of Palmdale. In addition, the applicant has proposed to use solar technology to generate a portion of the facility’s power output to support the State of California’s goal of increasing the percentage of renewable energy in the State. The applicant is proposing to use 251 acres of a 331-acre [sic] lot for solar generation. An all solar facility would not be feasible because of the space constraints of the 331-acre [sic] lot and because solar energy is not available at all times to meet baseload demands. Given the scope of the Project, it is not necessary for the applicant to determine an optimal ratio of solar to natural gas.

Finally, we note that the incorporation of the solar power generation into the BACT analysis for this facility does not imply that other sources must necessarily consider alternative scenarios involving renewable energy generation in their BACT analyses. In this particular case, *the solar component was a part of the applicant’s Project as proposed* in its PSD permit application. Therefore, requiring the applicant to utilize, and thus construct, the solar component as a requirement of BACT *did not fundamentally redefine the source*. EPA has stated that an applicant need not consider control options that would fundamentally redefine the source. However, it is expected that each applicant consider all possible methods to reduce GHG

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<sup>21</sup> Neither Mr. Simpson nor the permit applicant challenged the Region’s decision to add permit conditions that require the incorporation of the solar component.

emissions from the source that are within the scope of the proposed project.

*Id.* (footnotes omitted) (emphasis added).

In his Petition, Mr. Simpson objects to the Region's Response to Comments, contending that "EPA called upon the excuse of impermissible redesign to pave an automatic off-ramp for solar." Pet. at 20. In Mr. Simpson's view, the Region "admitted in the Response to Comments that [solar] was in fact a control technology" for GHGs, *id.*, and therefore, it was obligated to do a full BACT analysis of the solar technology options, including increasing the ratio of solar to natural gas energy for PHPP. *Id.* at 20-22. Mr. Simpson also argues that the Region's conclusions were "without basis" because "there may actually be almost twice as much land available for the project" (in the form of other City-owned property) and there may be more space on the 333-acre property to place additional solar panels.<sup>22</sup> *Id.* at 22-23.

Responding to the Petition, the Region states that it "believed that alternative solar configurations would not meet the primary project purpose and therefore need not be considered further," because "to do so would require fundamentally redefining the source." Reg. Resp. at 28. In so responding, the Region invokes the Agency's longstanding policy against using BACT analysis to require "redefinition of the source." The Region also relies on the Agency's recent GHG PSD guidance. *Id.* at 29-30. A discussion of the redefining the source policy, as well as the Agency's recent GHG PSD guidance, follows.

(ii) Relevant Legal Principles: BACT, Redefining the Source, GHG PSD Guidance

As mentioned above in Part VI, a permitting authority's final BACT determination is an emissions limit that reflects the best available control technology, rather than a specific control technology requirement. *See* CAA § 169(3), 42 U.S.C. § 7479(3); 40 C.F.R. § 52.21(b)(12); *see also In re Three Mountain Power, LLC*, 10 E.A.D. 39, 54 (EAB 2001) (explaining that where the facility could meet the emissions limit with either of two technologies, elimination of one did not lead to an erroneous permit determination because "BACT means an emission limitation, rather than a particular control technology" (citation omitted)); *In re Hillman Power Co.*, 10 E.A.D. 673, 691 (EAB 2002) (denying review of challenge to pollution control technology permittee planned to use where petitioner

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<sup>22</sup> Mr. Simpson also argues that the Region should have considered the potential to store solar power. Pet. at 24. As explained further in note 37 below, this argument is subsumed by the Board's analysis of Mr. Simpson's argument that additional land purportedly is available to the City, which was not properly raised and therefore is waived.

did not challenge the associated BACT emissions limit because permittees “have flexibility to implement various pollutant control technologies, methods, or techniques to achieve their BACT limits, as long as those BACT limits are achieved”). For this Final Permit, the Region set the annual GHG emissions limit at 1,913,000 tpy of CO<sub>2</sub>e (carbon dioxide equivalents). *See* Final Permit at 7; *see also id.* at 8, 11-12 (other GHG-related limits). The Region stated that it “consider[ed] the solar component to be part of its GHG BACT determination for the combustion turbines and associated heat recovery system.” RTC at 40. Mr. Simpson has not challenged the specific GHG emissions limit the Region established for PHPP.

When conducting a BACT analysis, permit issuers typically consider both “inherently lower polluting processes/practices”<sup>23</sup> and add-on control technologies<sup>24</sup> to determine the appropriate emissions limits for an NSR or PSD permit. *NSR Manual* at B.10. Permitting authorities, however, are not required to consider inherently lower polluting technology alternatives that would require “redefining the design” of the source as proposed by the permit applicant. *Id.* at B.13; *Knauf I*, 8 E.A.D. at 136. The *NSR Manual* explains:

Historically, EPA has not considered the BACT requirement as a means to redefine the design of the source when considering available control alternatives. For example, applicants proposing to construct a coal-fired generator have not been required by EPA as part of a BACT analysis to consider building a natural gas-fired electric turbine although the turbine may be inherently less polluting per unit product (in this case electricity) \* \* \*. Thus, a natural gas turbine normally would not be included in the list of control alternatives for a coal-fired boiler.

*NSR Manual* at B.13.

The Board has consistently upheld permitting decisions that appropriately apply the Agency’s policy<sup>25</sup> against requiring permit issuers to consider alterna-

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<sup>23</sup> Inherently lower-emitting processes/practices include the “use of materials and production processes and work practices that prevent emissions and result in lower ‘production-specific’ emissions.” *NSR Manual* at B.10.

<sup>24</sup> Add-on controls include devices such as scrubbers or fabric filters that control and reduce emissions *after* they are produced. *NSR Manual* at B.10.

<sup>25</sup> While often referred to as a “policy,” it is clear from both the Board’s and the Seventh Circuit Court of Appeal’s decisions that “the policy is really an agency interpretation of ambiguous statutory provisions.” *In re Desert Rock Energy Co.*, 14 E.A.D. 484, 527-29 (EAB 2009) (referring to Continued

tives that would redesign the source proposed by a permit applicant.<sup>26</sup> See, e.g., *RCEC*, 15 E.A.D. at 71-75; *In re Prairie State Generating Co.*, 13 E.A.D. 1, 14-28 (EAB 2006), *aff'd sub. nom Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007); *Knauf I*, 8 E.A.D. 136; *In re SEI Birchwood, Inc.*, 5 E.A.D. 25, 29-30 n.8 (EAB 1994); *In re Haw. Commercial & Sugar Co.*, 4 E.A.D. 95, 99-100 (EAB 1992); see also *In re Old Dominion Elec. Coop.*, 3 E.A.D. 779, 793 n.38 (Adm'r 1992). In *Sierra Club*, the Seventh Circuit Court of Appeals upheld the Agency's application of its policy against redefining the source. 499 F.3d at 655 ("[T]o exclude redesign is the kind of judgment by an administrative agency to which a reviewing court should defer.").

Many of the decisions cited above specifically addressed the issue of whether the BACT analysis should include alternative fuel designs for electric power generating stations. See *Prairie State*, 13 E.A.D. at 25 ("It has \* \* \* been long-standing EPA policy that certain fuel choices are integral to the electric power generating station's basic design." (citing *NSR Manual* at B.13)); *SEI Birchwood*, 5 E.A.D. at 29-30 n.8 (switching to natural gas would redefine coal-fired electric generating plant); *Haw. Commercial*, 4 E.A.D. at 99-100 (switching from coal to oil-fired combustion turbine not required); *Old Dominion*, 3 E.A.D. at 793 (switching to natural gas would redefine coal-fired electric generating plant); *In re Pennsauken Cnty.*, 2 E.A.D. 667, 673 (Adm'r 1988) (replacing proposed municipal waste combustor with plan to use a 20/80 mixture of refuse-derived fuel/coal at existing plants would redefine the source); see also *Desert Rock*, 14 E.A.D. at 538-39 (remanding a permit decision where applicant had stated that the technology could satisfy its business purpose and other federal permits for similar facilities had not found technology to be a redefinition of the source); cf. *In re Hibbing Taconite Co.*, 2 E.A.D. 838, 842-43 (Adm'r 1989) (taconite processing plant proposing to burn petcoke in its boiler was required to consider natural gas as alternative fuel in BACT analysis where existing facility used natural gas).<sup>27</sup>

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*Sierra Club*, 499 F.3d at 655-56; *Prairie State*, 13 E.A.D. at 18 ("[T]he policy represents a permissible resolution of ambiguity found in the CAA statutory text of sections 165 and 169.").

<sup>26</sup> For a delineation of the history, statutory and regulatory basis, and application of the "redefining the source" policy, which includes a discussion of the CAA clean fuels provision Mr Simpson mentions, see *Prairie State*, 13 E.A.D. at 15-23. See also *Desert Rock*, 14 E.A.D. at 526-30 (expounding on *Prairie State*).

<sup>27</sup> In *Sierra Club*, the Seventh Circuit observed that requiring a BACT analysis for a coal-fired power plant to consider using alternate fuel sources such as nuclear fuel, or hydroelectric or wind power clearly would produce extreme results:

That approach would invite a litigation strategy that would make seeking a permit for a new power plant a Sisyphean labor, for there would always be one more option to consider. The petitioners to their credit shy

Continued

As the Board has thoroughly explained in prior cases, determining whether a potential control option would redefine the source requires the permit issuer to examine first how the applicant initially “defines the proposed facility’s end, object, aim, or purpose – that is the facility’s basic design.” *Prairie State*, 13 E.A.D. at 22 (footnotes and citations omitted). A permit issuer then must assess “which design elements are inherent for the applicant’s purpose and which design elements ‘may be changed to achieve pollutant emissions reductions without disrupting the applicant’s basic business purpose for the proposed facility,’ while keeping in mind that BACT, in most cases, should not be applied to regulate the applicant’s purpose or objective for the proposed facility.” *Desert Rock*, 14 E.A.D. at 530 (quoting *Prairie State*, 13 E.A.D. at 23, 26); *accord RCEC*, 15 E.A.D. at 73. Additionally, the permit issuer must ensure that the proposed facility design was derived for reasons independent of air quality permitting.<sup>28</sup> *Prairie State*, 13 E.A.D. at 26; *accord RCEC*, 15 E.A.D. at 73; *Desert Rock*, 14 E.A.D. at 530.

Recent Agency guidance addressing greenhouse gases in the permitting context confirms that the redefining the source policy applies to PSD permitting for GHGs. The guidance states:

While Step 1 [of a BACT process] is intended to capture a broad array of potential options for pollution control, this step of the process is not without limits. EPA has recognized that a Step 1 list of options need not necessarily include lower polluting processes that would fundamentally redefine the nature of the source proposed by the permit applicant. BACT should generally not be applied to regulate the applicant’s purpose or objective for the proposed facility.

U.S. EPA, EPA-457/B-11-001, *PSD and Title V Permitting Guidance for Greenhouse Gases* 26 (Mar. 2011) (citing *Prairie State*, 13 E.A.D. at 23) [hereinafter *GHG Permitting Guidance*]. Additionally, in addressing the application of the guidance to clean fuels in particular, the guidance states:

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away from embracing the extreme implications of such a strategy, which would stretch the term “control technology” beyond the breaking point.

499 F.3d at 655.

<sup>28</sup> There is no suggestion in this case that the City’s proposed design of its power plant was an attempt to circumvent BACT analysis or air quality permitting requirements. See *Prairie State*, 13 E.A.D. at 26. Indeed, the record shows that the City included a solar component in this project in order to improve air quality in the region and to meet the State of California’s renewable energy requirements. RTC at 40; see generally PSD Application; CEC FSA.

[W]hen a permit applicant has incorporated a particular fuel into one aspect of the project design (such as startup or auxiliary applications), this suggests that a fuel is “available” to a permit applicant. In such circumstances, greater utilization of a fuel that the applicant is already proposing to use in some aspect of the project design should be listed as an option in Step 1 *unless it can be demonstrated that such an option would disrupt the applicant’s basic business purpose for the proposed facility.*

*Id.* at 28 (emphasis added). Thus, a critical question in considering alternative solar configurations for PHPP – under both the redefining the source doctrine and recent GHG guidance – is whether any alternative configuration would disrupt the basic business purpose of the proposed facility.

The Region is given broad discretion in making this determination. *NSR Manual* at B.13-.14; *RCEC*, 15 E.A.D. at 73; *Desert Rock*, 14 E.A.D. at 526-27, 530; *see also Sierra Club*, 499 F.3d at 655-56 (delineating Agency’s discretion in determining whether a particular control option would redefine the source).<sup>29</sup> Because permitting authorities, such as the Region, have broad discretion in determining whether a control option would redefine the source, the Board reviews such determinations under an abuse of discretion standard. *RCEC*, 15 E.A.D. at 73; *Desert Rock*, 14 E.A.D. at 526, 530, 538-39.

(iii) Analysis of the Region’s Decision with Respect to the Solar Component at PHPP

In deciding not to set GHG BACT limits based on a larger solar thermal component than that proposed by the City, the Region concluded that other solar configurations would “redefine the source.” Reg. Resp. at 28; RTC at 40. As stated above, the Region relied on two primary reasons for its conclusion: that alternative solar configurations would not meet the project’s primary purpose, which is to provide “baseload power to increase the reliability of the electrical supply” for the City, and that space constraints limit the amount of solar generation that can be generated on the property. RTC at 40. Although the Region ap-

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<sup>29</sup> In *Sierra Club*, the Seventh Circuit deferred to EPA’s expert judgment to determine whether an alternative source would amount to a “redefinition of the design of the source” under EPA’s policy:

[The] \* \* \* distinction \* \* \* is one of degree and the treatment of differences of degree in a technically complex field with limited statutory guidance is entrusted to the judgment of the agency that administers the regulatory scheme rather than to courts of generalist judges.

499 F. 3d at 656 (citing *Chevron, U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 842-43 (1984)).

pears to have concluded that any alternative configuration would redefine the source, its analysis focused primarily on the alternative of an all-solar plant. *See id.* The Board separately addresses below the Region’s determination first as applied to an all-solar alternative and then as applied to potential alternatives for expanding the solar component to generate more electrical power than the 50 MW proposed design.

The Region’s determination in this case that an all-solar plant would be incompatible with the primary purpose of the proposed power plant – to provide 570 MW of baseload power – is fully supported by the administrative record. As the Region points out, baseload plants must be available to meet demand “at all times.” *Id.* According to the record, however, “solar power plants alone do not produce reliable energy generation night and day.” *Id.*; *see also* CEC FSA at 6-28; CEC, CEC-800-2011-005, PHPP Commission Decision at 3-13 (Aug. 10, 2011) (A.R. VIII-5) [hereinafter Final CEC Decision]. Thus, “[e]nergy production would either have to be supplemented by a storage facility to produce during the evening and night hours or would be available only throughout the daylight hours. Because of the limited energy during night hours, Palmdale would not increase its level of assurance that residential, commercial, and industrial power needs in the City would be met, which is one of the PHPP project objectives.” CEC FSA at 6-28; Final CEC Decision at 3-13. In other words, such a design would be incompatible with PHPP’s overarching purpose: a reliable, baseload facility.

Rejecting an all-solar option on these facts also comports with the recent GHG guidance, which states that a permit issuer should consider, in step 1 of its BACT analysis, “greater utilization of a fuel that the applicant is already proposing to use in some aspect of the project design” – which would presumably include solar power in this case – “*unless* it can be demonstrated that such an option would disrupt the applicant’s basic business purpose for the proposed facility.”<sup>30</sup> *GHG Permitting Guidance* at 28 (emphasis added). Here, the Region reasonably concluded that an all-solar option *would* disrupt the City’s basic business purpose.

Notably, the CEC had reviewed the proposed PHPP project and potential technological and siting alternatives under the California Environmental Quality Act and its own regulations and had come to the same conclusion with respect to an all-solar alternative, stating:

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<sup>30</sup> The GHG guidance does not give any further guidance to permitting authorities on how to determine whether, and when, a greater utilization of a fuel would disrupt the applicant’s basic business purpose. In light of the challenges posed by making such a determination for a hybrid plant with a solar component such as the PHPP, further guidance on this topic may be beneficial to permitting authorities and promote consistent decisionmaking in such cases as they arise.

[T]he evidence establishes that an all solar option would not obtain the project objectives of (1) ensuring that sufficient electricity was available to meet the power needs of residential, commercial, and industrial users within the City of Palmdale, (2) being located within Palmdale's boundaries and (3) would likely result in additional significant impacts.<sup>31</sup>

Final CEC Decision at 3-14. The Board concludes the Region's determination here that an all-solar alternative would redefine the source was eminently reasonable and consistent with Agency guidance and prior Board decisions, cited above, which have rejected using a BACT analysis to require fundamental changes in the fuel design of electric power generating stations.

While an all-solar alternative to the proposed PHPP design plainly would constitute redefinition of the source under Agency policy, whether the Region should have analyzed options for expanding the solar component to generate more than the proposed 50 MW design capacity (stopping short of an all-solar design) presents a less clear issue. First, Mr. Simpson's public comments raising this question were brief and vague.<sup>32</sup> Under established Board case law, it is questionable whether the Region had any obligation to conduct a substantive analysis in response to these questions. *See In re Westborough*, 10 E.A.D. 297, 298 (EAB 2002) (concluding that merely posing generalized questions during the comment period without indicating how the answers to those questions would affect the permit limits was insufficient to transform such questions into an objection to the permit); *In re New Eng. Plating Co.*, 9 E.A.D. 726, 734-35 (EAB 2001) (determining that petitioner's comment that it would be unable to meet a permit condition was insufficient to encompass the specific question raised on appeal concerning a compliance schedule or delayed effective date); *see also In re ConocoPhillips Co.*, 13 E.A.D. 768, 801 (EAB 2007) (articulating a petitioner's obligation to identify all issues with a reasonable degree of specificity and clarity).

The lack of specificity in Mr. Simpson's comments, and especially his question as to the "ideal ratio" of solar to natural gas power for this plant, effectively

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<sup>31</sup> The CEC also recognized that an all-solar plant would require the acquisition of 2,280 to 5,700 acres to generate the equivalent electricity of the proposed project. Final CEC Decision at 3-13 to 3-14. The CEC further observed that, although an all-solar alternative may reduce even further the impacts associated with air emissions, it also likely would result in significant negative impacts to biological resources, including greater loss of habitat for desert tortoise and other species of concern, and also have soil erosion impacts. *Id.*

<sup>32</sup> Again, Mr. Simpson's only comment on this issue consisted of two questions: (1) "If 50 MW of solar represents a control technology[,] would a greater solar component represent greater control?"; and (2) "What is the ideal ratio of solar to natural gas for maximum GHG and [environmental justice] benefits for this proposal?" Pet. Ex. C at 47.

calls upon the Region to analyze a myriad of potential solar configurations for the proposed plant. Engaging in such an exercise would impose a heavy burden on the Region that goes well beyond the permitting authority's obligations to consider and respond to public comments and to satisfy statutory and regulatory obligations in setting a BACT emissions limit that protects public health and the environment. The permit process cannot work efficiently or as designed by Congress if the permit issuer is obliged to anticipate and analyze multiple permutations or variations of conceivable options that an overbroad and vague question can invoke.

Moreover, Mr. Simpson did not present any information in his comments, nor is there any indication in the administrative record, that incremental expansion of the power generation capacity of the solar component would make any significant difference to the final BACT emissions limit for GHGs at this facility. As noted above, the final BACT determination is an emissions limit, not a specific technology, and Mr. Simpson did not challenge the Region's GHG emissions limit for this permit. Thus, Mr. Simpson's comments fall far short of the required level of specificity that would trigger an obligation by the Region to conduct a detailed BACT analysis of a proposed design alternative.

It is unclear from the record whether the Region in fact considered any possibilities for incremental expansion of the 50 MW solar component that might not interfere with the PHPP's primary purpose of providing a reliable electric supply for the City of Palmdale.<sup>33</sup> The Region's analysis, which focused almost exclusively on an all-solar plant alternative, was less than fulsome in this regard. See *Desert Rock*, 14 E.A.D. at 533 (remanding a permit decision, in part, because the permit issuer did not take a "hard look" at the record and provide a sufficient explanation for why the proposed control technology would redefine the source).

However, the Board need not decide whether the Region should have taken a harder look at whether some incremental expansion of the solar component of PHPP could be compatible with achieving the plant's primary purpose because, as explained further below, the administrative record demonstrates that it would be infeasible to generate additional solar power in any significant amount at the proposed site due to space constraints. As the Board reiterated in *In re Steel Dynamics, Inc.*, 9 E.A.D. 165 (EAB 2000), to justify a remand, "there must be a compelling reason to believe that the omissions [by the permitting authority] led to an erroneous permit determination – in other words, that [omissions] materially affected the quality of the permit determination." 9 E.A.D. at 191-92 (quoting *In re*

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<sup>33</sup> For example, it is unclear whether some additional solar power could be generated to reliably replace a moderately greater degree of duct burning and, if so, whether that expanded solar configuration also would redefine the source (i.e., whether a moderately increased solar configuration also would be inconsistent with the business purpose of providing a reliable, baseload facility).

*Mecklenburg Cogeneration Ltd. P'ship*, 3 E.A.D. 492, 494 n.3 (Adm'r 1990)); accord *Three Mountain Power*, 10 E.A.D. at 55. Here, even if the Region's analysis was lacking with respect to the compatibility of a larger solar component with the plant's purpose, a more fulsome explanation would not alter the fact that no more space is available at the site. Thus, the final BACT determination of the GHG emissions limit could not be modified based on the premise of an expanded solar component.

According to the record in this matter, the project as designed already utilizes approximately 75% of the project property (251 out of 333 acres) to generate 50 MW of power using solar technology. See RTC at 40; Fact Sheet at 3-5. All of the remaining property is utilized for the plant's power block, setbacks, drainage, and roads. See PSD Application, fig. 2-2; CEC FSA at 3-1, figs. 2-3b & 2-4. Thus, the record indicates that there is essentially no more available space remaining on this 333-acre property. See PSD Application, fig. 2-2; see also CEC FSA at 3-1, figs. 2-3b & 2-4. Further, as Mr. Simpson points out, approximately 5 acres is needed to produce 1 MW of solar generation at the PHPP site (50 MW generation from 251 acres). Pet. at 24; see also CEC FSA at 6-27 ("The average land required for a solar power plant is 8 acres per MW."). Thus, a substantial amount of additional acreage would be required to produce a significant amount of additional solar power, far more acreage than is available at the site. As such, the Region reasonably concluded that any additional solar power was infeasible due to space constraints.

For the first time on appeal, Mr. Simpson questions whether additional solar panels could be placed on other City-owned property (or interspersed around the current facility) to increase PHPP's solar power generation. Pet. at 23 (referring without citation to a CEC description of the project). In its final decision, the CEC described the project as requiring permanent use of a 333-acre site that is "part of a 613.4 acre property owned by the City of Palmdale in an industrial area of the City which is currently zoned industrial." Final CEC Decision at 2-1. Mr. Simpson now suggests that the City could dedicate the additional land that it owns adjacent to the plant site to increase PHPP's solar generation or storage capacity. Pet. at 23. There is no indication in the record that this suggestion is feasible.<sup>34</sup>

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<sup>34</sup> Mr. Simpson, who has the burden of persuasion, points to nothing in the record that suggests the remaining portion of the 613.4-acre property is or could be made available to PHPP for this project. The CEC considered and rejected three alternative sites to the one proposed for PHPP, one of which was larger than the proposed site. See Final CEC Decision at 3-1 to 3-21. In its alternatives analysis, the CEC also rejected the possibility of an all-solar alternative, an increased ratio of solar at PHPP, and a rooftop solar alternative because these "would not be feasible alternatives that would achieve the stated objectives of the project." *Id.* at 3-15.

Moreover, Mr. Simpson offers this suggestion too late in the process. Petitioners are required to raise “all reasonably ascertainable issues and \* \* \* all reasonably available arguments supporting [a petitioner’s] position” during the comment period on the draft permit. 40 C.F.R. § 124.13; *see also In re Christian County Cogeneration, LLC*, 13 E.A.D. 449 (EAB 2007) (denying review of a permit issuer’s determination not to include a BACT limit for carbon dioxide in response to an intervening U.S. Supreme Court decision because the issue was reasonably ascertainable and petitioner had not preserved the issue during the public comment period). This requirement “is made a prerequisite to appeal by 40 C.F.R. § 124.19(a),” which requires petitioners to demonstrate that any issue being raised was first raised during the public comment period.<sup>35</sup> *ConocoPhillips*, 13 E.A.D. at 800 (citing 40 C.F.R. § 124.19(a)). As the Board previously has explained, the obligation to raise all arguments and issues during the public comment period is not an arbitrary hurdle, but instead is an important function related to the efficiency and integrity of the overall administrative scheme:

The purpose of [the requirement to raise all issues during the public comment period] is to ensure that the Region has an opportunity to address potential problems with the draft permit before the permit becomes final, thereby promoting the longstanding policy that most permit decisions should be decided at the regional level, and to provide predictability and finality to the permitting process.

*Id.* (citations omitted). The Board routinely denies review of issues or arguments raised on appeal that were reasonably ascertainable, but were not raised during the public comment period. *E.g., id.; Christian Cnty.*, 13 E.A.D. at 457; *Shell I*, 13 E.A.D. at 457; *In re BP Cherry Point*, 12 E.A.D. 209, 218-20 (EAB 2005); *In re Kendall New Century Dev.*, 11 E.A.D. 40, 55 (EAB 2003); *In re Haw. Elec. Light Co.*, 10 E.A.D. 219, 227 (EAB 2001); *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 249-250 (EAB 1999); *see also LeBlanc v. EPA*, 310 Fed. Appx. 770, 775 (6th Cir. 2009) (holding that the Board correctly determined that petitioners did not preserve an issue because they failed to mention it in their comments and it was reasonably ascertainable), *denying review of In re Core Energy, LLC*, UIC Appeal No. 07-02 (EAB Dec. 19, 2007) (Order Denying Review). Issues also must be raised with a reasonable degree of specificity and clarity during the comment period in order for the issue to be preserved for review. *See ConocoPhillips*, 13 E.A.D. at 800 (denying review of issue of whether BACT for carbon dioxide and methane was required where commenter had merely expressed “extensive concern with greenhouse gas emissions”; such a general com-

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<sup>35</sup> Although the Board has made some exceptions to this general proposition, the circumstances of this case do not warrant an exception. *See generally Christian Cnty.*, 13 E.A.D. at 461 & n.20.

ment did not reflect the level of specificity necessary to preserve the more specific issue); *see also, e.g., RCEC*, 15 E.A.D. at 33 (explaining that a comment questioning data from one facility in the context of emissions calculations was insufficient to preserve appeal concerning data from second facility); *Shell I*, 13 E.A.D. at 395 (determining that comments raising generalized concerns regarding appropriate monitoring were insufficient to preserve for review issue of whether permit limitations were federally enforceable within the meaning of the regulations ); *In re Fla. Pulp & Paper Ass'n*, 6 E.A.D. 49, 54-55 (EAB 1995) (concluding that comment regarding sludge testing being unnecessary was insufficient to preserve for appeal the question of legal authority to require sludge testing); *In re Pollution Control Indus. of Ind., Inc.*, 4 E.A.D.162, 166-69 (EAB 1992) (explaining that comments on two aspects of testing requirement in permit were insufficient to raise on appeal general objection to any testing requirement).

Mr. Simpson has not pointed to any comment submitted during the public comment period that raises the question of whether the 333-acre parcel on which the facility was designed to be located could be expanded to include additional land owned by the City. Nor has Mr. Simpson pointed to any comment that suggests adding additional panels on rooftops at, or interspersed around, the current site.<sup>36</sup> The Board declines to allow Mr. Simpson to raise these new and speculative arguments for the first time on appeal. Allowing such late objections would impose an unreasonable burden on the permitting authority to anticipate unstated objections, and potentially could lead to an endless cycle of comment, response, and appeals. Mr. Simpson waived any argument concerning the use of additional space to increase solar capacity by not raising it during the public comment period.<sup>37</sup>

Because an all-solar configuration would clearly redefine the source and the record shows that a significant expansion of the solar component at PHPP is infeasible due to space constraints, the Board concludes that Mr. Simpson has not demonstrated that the Region clearly erred or abused its discretion in setting GHG

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<sup>36</sup> The Board finds nothing in the administrative record that specifically addresses the feasibility of these additional suggestions. As explained above, the record amply demonstrates that the proposed design for the PHPP fully utilizes the proposed 333-acre site for the power block, the solar array, and other necessary support structures.

<sup>37</sup> Mr. Simpson also suggests in his Petition that energy storage facilities could be built to overcome the problem of solar energy being unavailable at night. Such storage would require additional space. This argument not only is dependent on more space being available, it also was not raised during the public comment period and is therefore waived. *See* 40 C.F.R. §§ 124.13, .19(a). In any case, this suggestion seems to be based on little more than Mr. Simpson's speculation. Speculative suggestions fall short of establishing clear error or abuse of discretion on appeal. *See, e.g., RCEC*, 15 E.A.D. at 80 n.96 (quoting *Three Mountain Power*, 10 E.A.D. at 58 ("The Board will not overturn a permit provision based on speculative arguments.)); *Encogen*, 8 E.A.D. at 253 (same).

BACT emissions limits based on the proposed solar thermal component for PHPP.

- b. The Region Did Not Clearly Err in Eliminating CCS as a Control Technology in Step 4 of the BACT Analysis

Mr. Simpson next challenges the Region's determination, in step 4 of its final BACT analysis for GHGs, that CCS was economically infeasible. For the following reasons, the Board concludes that Mr. Simpson has failed to demonstrate clear error.

In its initial GHG BACT analysis, the Region did not consider CCS beyond step 2 of the BACT analysis (technical feasibility) because it had concluded that CCS would be "technically infeasible."<sup>38</sup> See Fact Sheet at 28-29. In his comments, Mr. Simpson argued that the Region's CCS conclusion was actually based on cost, rather than on technical feasibility and, therefore, should have been analyzed at step 4 of the BACT analysis rather than at step 2. Pet. Ex. C at 46. He asked the Region to do a "real" step 4 cost analysis of CCS. *Id.*; see also RTC at 37.

In response to this comment, the Region conducted a step 4 BACT cost analysis, assuming for purposes of its analysis "that potential technical or logistical barriers would not make CCS technically infeasible." RTC at 37-38. The Region concluded, based on this assumption, that CCS would pass step 2 and be the top-ranked control technology in step 3 (ranking of available technologies). *Id.* The Region then presented the following explanation of costs in step 4 of its revised analysis:

[T]he estimated capital costs for PHPP are \$615-\$715 million dollars. For comparison purposes, if these capital costs were annualized (over 20 years) they are about \$35 million. In comparison, the estimated annual cost for CCS is about \$78 million, or more than twice the value of the facility's annual capital costs.

*Id.* at 38 (chart omitted). Based on these cost calculations, the Region eliminated CCS as a control option at step 4 "because it is economically infeasible." *Id.*

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<sup>38</sup> In discussing its BACT analysis for GHGs in the August 2011 Fact Sheet, the Region stated that, "[b]ased on available information, we consider carbon capture from gas turbines to be technically feasible for the Project." Fact Sheet at 28. The Region, however, went on to conclude that "while we have determined that CO<sub>2</sub> capture and storage is technically feasible, we conclude that transport of the captured CO<sub>2</sub> to the potential sequestration sites is not feasible." *Id.* at 29; see also Part VII.A.2.a.

On appeal, Mr. Simpson asserts that the Region's revised analysis contains two flaws: it "impermissibly compare[s] the overall price for CCS to the price for the facility" rather than comparing "dollars per ton of pollutant removed/reduced," and it "grossly inflate[s]" the estimated cost of CCS. Pet. at 27. The Region responds that its price comparison approach was consistent with Agency guidance, Reg. Resp. at 34 (citing and quoting from *GHG Permitting Guidance* at 42), and that Mr. Simpson's cost data are irrelevant to the cost analysis for this facility, *id.* at 35.

Upon review of the administrative record and the parties' briefs, the Board concludes that Mr. Simpson has not demonstrated that the Region clearly erred in its CCS BACT analysis. First, Mr. Simpson has not shown that the Region's price comparison approach for CCS was inappropriate or impermissible. As noted above in Part VI, in step 4 of a top-down BACT analysis, the permitting authority considers the energy, environmental, and economic impacts of the control technologies still remaining under consideration and either confirms the top-ranked alternative from step 3 as appropriate or determines it to be inappropriate. *NSR Manual* at B.8-.9, .26-.53. In considering economic impacts in the BACT step 4 analysis, permit issuers typically consider two economic criteria: average and incremental cost effectiveness. *Id.* at B.31. Cost effectiveness is typically calculated as "the dollars per ton of pollutant emissions reduced."<sup>39</sup> *Id.* The Agency's PSD and Title V permitting guidance for GHGs, however, contains additional GHG-specific BACT step 4 considerations that permit issuers should take into account while analyzing economic impacts. Of particular relevance, the guidance states:

With respect to the evaluation of the economic impacts of GHG control strategies, it may be appropriate in some cases to assess the cost effectiveness of a control option in a less detailed quantitative (or even qualitative) manner. For instance, when evaluating the cost effectiveness of CCS as a GHG control option, if the cost of building a new pipeline to transport the CO<sub>2</sub> is extraordinarily high and by itself would be considered cost prohibitive, it would not be necessary for the applicant to obtain a vendor quote and evaluate the cost effectiveness of a CO<sub>2</sub> capture system. As with all evaluations of economics, a permitting authority should explain its decisions in a well-documented permitting record.

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<sup>39</sup> This general approach is based on EPA guidance, *see NSR Manual* at B.31, and is not mandated by statute or regulation, *see generally* 42 U.S.C. § 7479(3) (BACT definition); 40 C.F.R. § 52.21(b)(12) (same).

*GHG Permitting Guidance* at 42. Consistent with this guidance, the Region determined that the cost of CCS would be so high – twice the annual cost of the entire project – that it would clearly be cost prohibitive. Thus, the Region’s price comparison approach was neither inappropriate nor impermissible.<sup>40</sup>

Second, Mr. Simpson fails to demonstrate that the Region “grossly inflated” the costs of CCS. Mr. Simpson claims that cost information from the interagency report the Region relied upon suggests that the estimated annual cost for CCS at PHPP would be \$19 million, not \$78 million. Pet. at 28 (referring to *Report of the Interagency Task Force on Carbon Capture and Storage* at 33 (Aug. 2010)). As the Region points out, however, Mr. Simpson has misread the report. In support of his assertions, he cites capital cost information that applies to an Integrated Gasification Combined Cycle (“IGCC”) power plant. *Id.* PHPP, however, is not an IGCC plant. It is a natural-gas fired power plant.<sup>41</sup> See Fact Sheet at 3. Thus, the data upon which Mr. Simpson relies are inapplicable here and do not demonstrate error by the Region.

Mr. Simpson also claims that the Region erred because its analysis ignored “the potential[] to pay for the technology through ancillary sources” described in a 2009 Integrated Energy Policy Report issued by CEC. Pet. at 28. These ancillary sources include various grant programs and sales of captured CO<sub>2</sub> to oilfield operators. See *id.* at 28-29 (quoting the CEC report). As the Region argues, however, “there is nothing in the record to indicate that the City will actually receive such funding or participate in such oil recovery activities.” Reg. Resp. at 35. Nor has Mr. Simpson cited to any evidence that the City will receive such additional sources of funding. Mr. Simpson’s argument, therefore, is based on the mere possibility that the City might be able to obtain additional funding for CCS.

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<sup>40</sup> The guidance recognizes that the costs of CCS would likely lead to its elimination as BACT either in step 2 or 4, stating that “at present CCS is an expensive technology, largely because of the costs associated with CO<sub>2</sub> capture and compression, and these costs will generally make the price of electricity from power plants with CCS uncompetitive compared to electricity from plants with other GHG controls. Even if not eliminated in Step 2 of the BACT analysis, on the basis of the current costs of CCS, we expect that CCS will often be eliminated from consideration in Step 4 of the BACT analysis \* \* \*.” *GHG Permitting Guidance* at 42-43.

<sup>41</sup> An IGCC plant uses coal as its fuel source, “but in an initial ‘gasification’ part of the process, the coal is chemically converted into a synthetic gas (“syngas”). The syngas is cleaned to remove various pollutants \* \* \* and is then burned in a gas turbine to generate electric power.” *Desert Rock*, 14 E.A.D. at 524-25; see also Reg. Resp. at 35 n.14 (“The IGCC process gasifies solid or liquid fuel into CO<sub>2</sub> and hydrogen (H<sub>2</sub>) prior to the occurrence of combustion and power production.”). The carbon capture for an IGCC plant therefore occurs pre-combustion. See Reg. Resp. at 35. In a natural gas facility, however, carbon capture occurs *post-combustion*. *Id.* at 35; see also Fact Sheet at 27 (“CCS is a technology that involves capture and storage of CO<sub>2</sub> emissions to prevent their release to the atmosphere. For a gas turbine, this includes *removal of CO<sub>2</sub> emissions from the exhaust stream* \* \* \*.”) (emphasis added). In its CCS analysis, the Region considered the greater costs connected with post-combustion carbon capture. Reg. Resp. at 35.

Mr. Simpson has not explained why the Region should have relied upon such speculative information in its economic analysis. *See* note 37 above (explaining that speculative arguments fall short of demonstrating clear error). Accordingly, the Board concludes that the Region did not clearly err in determining that CCS was economically infeasible as a GHG control technology for PHPP.

C. The Region Did Not Abuse Its Discretion When it Elected Not to Conduct an Independent Analysis of the “Need” for PHPP Pursuant to Section 165(a)(2) of the Clean Air Act

On appeal, Mr. Simpson argues that the Region “failed to consider the need for the facility” by “deferring” to the CEC and the California Public Utilities Commission (“PUC”), rather than conducting an independent analysis of the need for the facility.<sup>42</sup> *Pet.* at 29. Although not clearly articulated in his petition, Mr. Simpson seems to rely on Board precedent interpreting a CAA provision, section 165(a)(2), 42 U.S.C. § 7475(a)(2), which allows the permitting authority to consider the “need” for a facility in the context of considering project alternatives. *See id.* at 29-30. As further explained below, the decision of whether to apply agency resources to independently assess the “need” for a facility in the context of PSD permitting is a matter of agency discretion. Thus, the question the Board must answer is: did the Region abuse its discretion when it elected not to conduct an independent “needs” analysis for PHPP pursuant to CAA section 165(a)(2)?

The relevant portion of CAA section 165(a)(2) provides that PSD permitting authorities must provide the public with the opportunity to comment on “the air quality impact of [the proposed] source, *alternatives thereto*, control technology requirements, and other appropriate considerations[.]” CAA § 165(a)(2), 42 U.S.C. § 7475(a)(2) (emphasis added). The Board previously has interpreted this language to *allow*, but not *require*, a permitting authority to consider a no-build alternative. *See In re Prairie State Generating Co.*, 13 E.A.D. 1, 32-33 (EAB 2006) (holding that the state permitting authority was incorrect in stating that it was not empowered to consider a no-build alternative, but upholding the permit because it was clear that the permitting authority had reasonably exercised its discretion not to conduct an independent analysis of a no-build alternative), *aff’d sub. nom Sierra Club v. EPA*, 499 F.3d 653 (7th Cir. 2007). In so holding, the Board made clear that the permit issuer does not have an obligation to independently investigate alternatives raised in public comments, including a no-build alternative. *Id.* Further, the Board observed the importance of this limitation on

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<sup>42</sup> As mentioned above in note 6, PHPP and its related facilities were subject to a parallel state permitting review process by the CEC. As part of that process, the CEC conducts a comprehensive examination of a project, including an evaluation of alternatives. *See* Presiding Member’s Proposed Decision at 1-2 to 1-3.

the permit issuer's obligation, particularly where the evaluation of "need" for additional electrical generation capacity would require "a rigorous and robust analysis" and "would be time-consuming and burdensome for the permit issuer." *Id.* at 33. In such circumstances, "the permit issuer must be granted considerable latitude in exercising its discretion to determine how best to apply scarce administrative resources." *Id.* Thus, based on previous Board precedent interpreting the CAA, the Region had the discretion, but was not required, to conduct an independent analysis of the need for PHPP in the context of this PSD permit proceeding.

The Region exercised its discretion not to evaluate the need for PHPP reasonably. In response to Mr. Simpson's vague question regarding the need for PHPP,<sup>43</sup> the Region explained that it was not required to perform an independent analysis of alternatives (including a no-build alternative). RTC at 36 (citing *Prairie State*, 13 E.A.D. at 33). The Region also correctly explained that it is appropriate for a permitting authority to rely on mechanisms within the State of California to evaluate the need for the facility, rather than conducting its own independent needs analysis. *See id.* at 35 (citing *Prairie State*, 13 E.A.D. at 32). The Region described various mechanisms in place in California that provide structure for considering the need for a facility, including the regular, integrated assessment by the CEC of major energy trends and issues facing the State's electricity and natural gas sectors, and the California PUC's detailed planning and procurement processes within the State. *Id.* The Region observed that these agencies were in much better positions to consider the question of the need for additional electric generating facilities within the State as a whole and cited a recent CEC report that indicated that, even "in the context of increasing reliance on renewable generation," there "continues to be a need for natural gas-fired power plants in California." *Id.* at 35-36.

Mr. Simpson argues that it was wrong for the Region to "defer" to these agencies because they have no jurisdiction to determine the need for PHPP. Pet. at 30. In so arguing, Mr. Simpson misunderstands the Region's response. The Region did not defer to any agency's specific determination of need for PHPP. Rather, the Region recognized that these agencies are better suited to assess California's energy needs in general and cited the CEC report as support for the Region's determination not to do its own independent analysis of need in the course

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<sup>43</sup> Mr. Simpson questioned whether any meaningful growth analysis had been provided, referred to a likely "oversupply" of fossil fuel burning electric generation, and suggested that the Region should demonstrate the "demand" for the project. Pet. Ex. C at 45. On appeal, Mr. Simpson for the first time asserts that the Region was required to conduct an independent needs analysis under the CAA. The failure to raise all available arguments and issues during the comment period is generally fatal to arguments on appeal. *See* discussion Parts III, VII.B.2.a.iii above. Nevertheless, because the Region went beyond Mr. Simpson's comment and addressed more fully its obligation to evaluate the need for the facility in its response to comments, the Board considers this issue.

of issuing the Palmdale permit.<sup>44</sup>

The Region reasonably concluded that it would be inappropriate in this case for EPA to conduct an independent analysis of the need for PHPP because “EPA would need to consider a myriad of extremely complex factors and detailed information that EPA has neither the resources nor the expertise to analyze.” RTC at 36. The Region also noted that the commenter had not included the type of detailed factors and information necessary for such an analysis. *Id.* Given the scope of Mr. Simpson’s original comment, the Region’s response was eminently reasonable. *See id.* at 30 (explaining that the extent of the permitting authority’s analysis of alternatives need be no broader than the analysis supplied in public comments); *accord Knauf I*, 8 E.A.D. at 147-48 (finding reasonable a permitting authority’s general justifications for issues that had been raised in a general manner).

In sum, Mr. Simpson fails to demonstrate that the Region’s decision not to conduct an independent review of the need for PHPP was in any way an abuse of discretion, particularly in light of the wide latitude afforded to the Region in making such determinations. *See Prairie State*, 13 E.A.D. at 33; *In re EcoEléctrica, LP*, 7 EAD 56, 73-74 (EAB 1997) (determining the Region acted reasonably and appropriately by deferring questions concerning the need for the facility to the Puerto Rican government); *In re Ky. Utils. Co.*, PSD Appeal No. 82-5, at 2 (Adm’r Dec. 21, 1982) (“[T]he need for the proposed power plant will be more appropriately addressed by the state agency charged with making that determination.”). Based on the record before the Region, the Board concludes it did not abuse its discretion when it elected not to conduct an independent analysis of the “need” for PHPP pursuant to CAA section 165(a)(2).

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<sup>44</sup> On appeal, Mr. Simpson belatedly attempts to suggest that the Region need only to have looked at a separate policy report issued by the CEC – the 2009 Integrated Energy Policy Report (“IEPR”) – and California geography to conclude that PHPP was not needed. Pet. at 33. Mr. Simpson did not provide this document to the Region during the comment period, and the Region did not consider it in making its final permitting decision. Consequently, it was not part of the administrative record and need not be considered by the Board. 40 C.F.R. § 124.9, .17(b), .18(b) (explaining those documents that are part of the record); *accord, e.g., RCEC*, 15 E.A.D. at 39, 86 n.106; *Dominion II*, 13 E.A.D. at 417. Nonetheless, because it is a publically available document, the Board has reviewed the section Mr. Simpson cited and observes that the CEC specifically recognized that natural gas generation has a role to play in designing a future low carbon electricity system for California and that determining future need for such facilities is complicated and depends on the level of energy efficiency achieved, among other things. *See* 2009 IEPR at 186-190; *see also RCEC*, 15 E.A.D. at 36, 86 n.106 (taking official notice of publically available documents). The document does not in any way define California’s needs for natural gas facilities and, in any case, the Region’s review of one 2009 CEC policy report would not suffice to independently and definitively determine the need (or lack thereof) for PHPP, as Mr. Simpson suggests.

**VIII. *Conclusion and Order***

For all of the reasons provided above, the petition for review of the Palmdale Hybrid Power Project PSD permit, PSD Permit No. SE 09-01, is denied.

So ordered.