

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

IN THE MATTER OF:)	Appeal No. PSD 12-____
PIO PICO ENERGY CENTER)	
LLC)	Region IX PSD Permit No. SD 11-01
)	

PETITION FOR REVIEW

David C. Bender
MCGILLIVRAY WESTERBERG & BENDER LLC
211 S. Paterson Street, Ste 320
Madison, WI 53703
608.310.3560
608.310.3561 (fax)

SIERRA CLUB
Joanne Spalding
Travis Ritchie
85 Second Street
San Francisco, CA 94105
Phone: (415) 977-5725
Fax: (415) 977-5793
joanne.spalding@sierraclub.org
travis.ritchie@sierraclub.org

INTRODUCTION

Pursuant to 40 C.F.R. § 124.19(a), the Sierra Club, petitions for review of the conditions of the Prevention of Significant Deterioration (PSD) Permit Number SD 11-01, issued by the United States Environmental Protection Agency, Region IX (“Region”) for a natural gas fired electric generating station. The permittee facility is to be owned by Pio Pico Energy Center, LLC, (PPEC) and would be located at 7363 Calzada de la Fuente, Otay Mesa, California. The permit decision at issue by the Region is dated as November 19, 2012. A copy of the PSD permit is attached as Sierra Club **Exhibit 1**.

In issuing the permit, the Region erred by: (1) improperly excluding more efficient combined cycle turbines as technologically infeasible in a best available control technology (“BACT”) analysis, based on the applicant’s preferred design-specific attributes that negate Congressional intent to consider cleaner production processes; (2) establishing BACT for carbon dioxide (CO₂) based on unreasonable assumptions about operating capacity that conflicts with other assumptions made by the Region and without a sufficient factual basis for other important assumptions; and, (3) failing to create a record or provide sufficient explanation for the particulate matter (PM) BACT limits.

The effect of the Region’s permit will be to allow an inefficient simple-cycle turbine to operate 4,337 or more hours per year (equivalent to 3,914,556 MMBtu/year), which is far higher than a typical peaking unit, while meeting CO₂ limits made less stringent based on an opposite assumption that the plant will constantly operate at its lowest and least efficient operating mode. The Region further failed to support several fundamental assumptions that were used to make the permit’s BACT limits less stringent. These flaws are inconsistent with the PSD permitting program

requirements, and we therefore respectfully urge the Board remand the Pio Power Energy Center LLC PSD permit to the Region.

STATEMENT OF FACTS

The Region is authorized to administer the PSD permit program pursuant to a delegation of authority by the Administrator of the United States Environmental Protection Agency (“EPA”). The Permit authorizes PPEC to construct and operate a power plant generally consisting of three General Electric LMS100 natural gas-fired combustion turbines (CTs) rated at approximately 100 megawatts each. (Ex. 1 at p. 1.) The plant would be located on a 9.99 acre parcel in the Otay Mesa Business Park, within the San Diego County Air Pollution Control District, San Diego County, California. (Id.)

The PSD permit issued by the Region covers emissions of Nitrogen Oxides (NO_x), total particulate matter (PM), particulate matter 10 micrometres and smaller (PM₁₀), particulate matter 2.5 micrometers and smaller (PM_{2.5}), and greenhouse gases. (Region IX, Fact Sheet and Air Quality Report at p. 1 (June 20, 2012)) (attached as **Exhibit 2**). A separate permit is issued for ozone because the plant will be located in an ozone nonattainment area. (Id. at p. 5.) PPEC separately submitted an application to the California Energy Commission, referred to as an Application for Certification (AFC), which the California Energy Commission granted on September 12, 2012.

PPEC sought EPA approval for construction of the project in order to provide electrical capacity and energy to San Diego Gas & Electric (SDG&E) under a proposed 20-year Power Purchase Agreement. (Exhibit 2 at p. 16.) The PPA is subject to approval by the California Public Utilities Commission (CPUC). On November 20, 2012, the CPUC issued a proposed decision recommending that the PPA for PPEC be denied on the basis that SDG&E will not have a need for

the PPA's additional capacity and energy until 2018. (CPUC Proposed Decision, Application 11-05-023, p. 14 (attached as **Exhibit 6**). A final decision on the matter is currently pending before the CPUC.

SDG&E's proposed PPA with PPEC for the plant at issue was premised on a Request for Offer issued by SDG&E in 2009 ("2009 RFO"). Neither the PPA nor the 2009 RFO are included in the permit record. Nevertheless, according to the applicant, the proposed electrical generation technology is the only production process that can meet both. According to PPEC, the proposed LMS100 combustion turbine "is specifically designed for cyclic applications... [that] can deliver 100 MW of power in 10 minutes." (Id. at p. 4.) In its top-down best available control technology ("BACT") analysis, the Region considered whether alternative generating technologies (combined cycle gas turbines or reciprocating internal combustion engines) should be considered. (Fact Sheet (Ex. 2) at 15-16.) The Region concluded that combined-cycle units should be eliminated from the BACT analysis:

the applicant seeks approval from EPA for construction of the PPEC in order to satisfy an obligation to supply electrical capacity and energy to San Diego Gas & Electric (SDG&E) under a 20-year Power Purchase Agreement (PPA). The purpose of this project is to meet the specific objectives of SDG&E's 2009 Request for Offers (RFO) and the resulting contractual requirements contained in the PPA between SDG&E and PPEC LLC. Key among these requirements is supporting renewable power generation such as wind and solar, whose overall output varies. As output from these renewable resources drops, the PPEC must be able to come online quickly to make up the lost grid capacity. Thus, in order to satisfy its business purpose, the PPEC must be able to offer unit that: 1) are highly flexible and that can provide regulation during the morning and evening ramps, 2) can be repeatedly started and shut down as needed, and 3) can be brought online quickly, even under cold-start conditions.

(Fact Sheet (Ex 2) at p. 16.) Thus, according to the Region, the applicant seeks to build a power supply source to satisfy a power purchase agreement (PPA) that, in turn, is intended to satisfy the 2009 RFO.

While the Region includes neither the PPA nor the 2009 RFO in the permit record, the applicant summarized the requirements of the 2009 RFO as follows: (1) Be online by 2014; (2) Be a minimum of 100 megawatts (MW) of peaking and intermediate-class resources; (3) Locate in SDG&E service territory; (4) Operate under a fuel tolling agreement over a 20-year contract; (5) Be capable of operating under all permits at annual capacity factors of a minimum of 30% with an availability of >98%; (6) Heat rates will be no higher than 10,500 British thermal units per kilowatt hour (Btu/kWh); (7) Use flexible resources that can provide regulation during the morning and evening ramps and/or units that can be started and shut down as needed; and (8) Provide quick start operations. (California Energy Commission, Pico Pico Energy Center, Application - Docket # 2011-AFC-01, Section 2.0 Project Objectives, p. 2-2 (attached as **Exhibit 7**.) In response to the RFO, the applicant proposed to construct a 300 MW power plant using three General Electric LMS 100 combustion turbine (CT) machines, and PPEC later entered into the proposed PPA with SDG&E on that basis. ((Section 2.0 Project Objectives, p. 2-3; Response to Comments (Ex. 3) at p. 28.) Rather than looking to the scope of the 2009 RFO-- the actual energy and capacity requirements that PPEC was seeking to meet—to provide the project description, the Region looked to the specific production process that PPEC based its proposal and then PPA terms on. (Response to Comments (Ex. 3) at p. 28.)

According to the Region, a startup process for a “complete startup” combined cycle plant is typically longer than from a “similarly-sized simple cycle plant.” (Id.) The Region contends that a startup of the proposed PPEC to 100 MW is 10 minutes and to 300 MW is less than 30 minutes.

(Id. at 16 and n.13.) By comparison, the Region noted that a particular combined-cycle design (a GE 107FA) would achieve 160 MW in the same amount of time (i.e., less than 30 minutes) and another particular design (GE 7FA) could take “up to 3 ½ hours to achieve full load under some conditions.” (Id. at 16-17.)¹ The record also notes that a different, newer, combined-cycle design specifically intended for fast starts—a Siemens Flex Plant 10-- can achieve 150 MW in ten minutes and full power in as little as 40 minutes after an overnight shutdown. (Response to Comments (Ex. 3 at 53-53 and n.28, 29.)

The Region asserts that the longer startup time for combined cycle units is “incompatible with” the specific “ramp rate” of 100 MW in 10 minutes and 300 MW in 30 minutes—the particular attributes of the LMS100 production process—which thus by definition excludes all other production processes that have different ramp rates but lower emissions (such as combined cycle processes that have ramp rates of 150 MW in ten to 30 minutes and 300 MW in 40 minutes to 3 ½ hours).²

No specific “ramp rate” or cold start time was specified as necessary to meet the SDG&E’s Request for Offers (RFO). Rather, the RFO requested “a minimum of 100 MW of peaking or intermediate-class resources...” (PSD Application at p. PSD-3.2, attaching CEC Application § 2

¹¹ The Region initially indicated that it may have also considered the impact of frequent startup and shutdown causing thermal mechanical fatigue in the steam-side equipment of a combined cycle plant as another potential basis for finding that combined cycle was technically infeasible. (Fact Sheet (Ex. 2) at p. 17.) However, in response to comments, it acknowledged that it was not relying on that basis, and that consideration of increased fatigue was an issue of increased maintenance costs, which is properly considered in a cost-effectiveness analysis and not a technical feasibility analysis. See Response to Comments at p. 29 (attached as Exhibit 3). The Region did not rely on cost-effectiveness as a basis to reject combined-cycle technology, however. (Fact Sheet (Ex. 2) at p. 17 n.14.) Therefore, the only basis in the record for rejecting the more efficient combined-cycle technology is the contention that the startup time of a combined cycle is not compatible with the purpose of the project as defined by the Region.

² A combined-cycle plant can achieve full power within 40 minutes from a “hot start”—where the unit has been off for an over-night period and is restarted. (Response to Comments (Ex. 3) at 30.)

(attached as Exhibit 7)). It is, at most, only the final contract terms between the applicant and SDG&E that necessitates a “ramp rate” that effectively requires the LMS100 model CT and excludes all cleaner production processes, including more efficient combined-cycle generation.³

When establishing final permit terms, the Region also made two inconsistent revisions at the request of the applicant, each of which relax the permit requirements and result in greater permitted air pollution. First, the applicant requested that the Region expand the permitted operating hours to 4,000 hours of full load operation, plus another 500 startups and shutdowns, per year. Since startups are anticipated to occur within 30 minutes and shutdowns to occur within 10.5 minutes, Response to Comments (Ex. 3) at p. 20, this represents 4,337 online hours and 4000 full load hours every year. (Response to Comments (Ex. 3) at p. 9.) The Region obliged by not only expanding the permitted operating time, but the Final Permit expresses the permitted operations as 3,914,556 MMBtu per year—which represents 4335 hours of full load operation (903 MMBtu/hour (Ex. 3 at p. 15)—or 4000 hours at full load and many more than 337 hours of startup and shutdown, when heat input is lower than 903 MMBtu/hour. (Response to Comments (Ex. 3) at p. 16.)

Second, the applicant asked that its greenhouse gas BACT limit be increased based on its concern that the draft permit limit of 1,181 lb/MWh-net could not be met at lower loads because heat rate to power output is “slightly non-linear,” so more GHGs are emitted per unit of energy output at lower operating loads. (Response to Comments (Ex. 3) at 14 (summarizing applicant’s comment); Draft Permit at 6 (attached as **Exhibit 5**.) The applicant proposed to include a BACT limit for CO₂ from the combustion turbines based on the expected heat rate at 75% load, applicable only to periods when load exceeded 75%. (Id. at 15.) The Region agreed to change the BACT limit in the

³ It is also unclear that the 2009 RFO even defines the project needs in light of the proposed CPUC decision finding at the PPA for the plant at issue to be unnecessary in the near term.

final permit, but determined that the BACT limit should apply at all times. (Id. at 16.) However, rather than establishing the BACT limit to correspond to the heat rate, and therefore the achievable emission rate, at the various operating rates that the plant proposes to operate at, the Region established a limit based on the worst-case scenario: continuous operation at the lowest heat rate (50% load). (Id. at 16-17.) The final permit establishes BACT based on 720 rolling hours of operation, assuming that all of those hours are at the lowest heat rate (i.e., highest emissions per MWh) representative of 50% load. In other words, the Region established the final permit to allow the project to operate at a rate of 3,914,556 MMBtu/year, which presumes a high load operation for all 4000 hours per year that each unit is expected to operate; at the same time, it set the CO₂ BACT limit as if the units continuously operate at their lowest rate (50%) and corresponding highest emission rate.

When establishing the particulate matter BACT emission limit (PM/PM10/PM2.5), the Region determined that good combustion practices using pipeline-quality natural gas is the top-ranked control option. (Ex. 2 at p. 14.) To determine the appropriate emission limit achievable by good combustion practices and pipeline-quality natural gas, the Region reviewed PM performance test data from other similar simple cycle plants in southern California. Those data relied on by the Region showed a range of 0.0008 lb/MMBtu to 0.0049 lb/MMBtu as follows:

Facility	Test Result
Orange Grove Unit 1	0.0031 lb/MMBtu
Orange Grove Unit 2	0.0049 lb/MMBtu
El Cajon Energy	0.0008 lb/MMBtu
Canyon Power Project Unit 1	0.00311 lb/MMBtu
Canyon Power Project Unit 2	0.00311 lb/MMBtu

Source: Fact Sheet (Ex. 2) at p. 14. The Region states that “based on these test data, we have concluded that the applicant’s proposed PM emission limit for this project [of 0.0065 lb/MMBtu] is reasonable for simple cycle gas turbines located in southern California.” (Id.)

In its comments on the draft permit, the Sierra Club noted that the Region had not explained how it derived a 0.0065 lb/MMBtu PM emission limit from the five emission test data points identified—which ranged from 0.0008 to 0.0049. (Sierra Club Comments at pp. 1-2) (attached as Exhibit 4). Sierra Club further noted that, even if the BACT limit were set at a rate higher than the lowest demonstrated emission rate (0.0008 lb/MMBtu), to account for a “compliance margin,” the Region had not identified a basis for the particular compliance margin included in the 0.0065 lb/MMBtu limit. (Id. at 2.)

In response to Sierra Club’s comments, the Region stated that it would not be appropriate to establish the BACT limit based on the “lowest emission rate measured during a single source test for other equipment” because PM emission rates could vary depending on the sulfur content of the pipeline natural gas and any lubricating oils in the unit. (Response to Comments (Ex. 3) at p. 26.) The Region further notes that the only emission test data in the record is for a different combustion turbine model than the one being permitted. (Id. at 27.) However, the Region did not provide an explanation for how these two considerations result in a conclusion that, from the five emission tests the Region selected as the basis for the BACT analysis, the Region concluded that 0.0065 lb/MMBtu was the appropriate limit for loads greater than 80%. (Id. at p. 27.)

Additionally, in response to the applicant’s comment that it may not achieve an emission limit of 0.0065 lb/MMBtu at “low load,” the Region modified the proposed limit to apply only when the PPEC plant operates above 80% of load, and established a limit of 5.5 lb/hour for all operating rates below 80% load. (Response to Comments (Ex. 3) at 6; Final Permit (Ex. 1) at 6.)

The basis for establishing 80% of load as the threshold, above which 0.0065 lb/MMBtu represents BACT and below which 5.5 lb/hour represents BACT, is not provided by the Region. (Id.)

Similarly, the basis for the determination that 5.5 lb/hour represents BACT for all operations below 80% load is not provided. (Id.) The only emission data from another natural gas-fired turbine mentioned by the Region is in response to comments by the local air management district, who noted that a large combined cycle turbine operating in cold start mode at 10% of load (i.e., with only the combustion turbine operating) emitted at 0.021 lb/MMBtu but 0.0034 lb/MMBtu at full load. (Response to Comments (Ex. 3) at p. 19.) This is the only low-load emission data actually provided in the record. For the PPEC plant here, 10% load is approximately 90.3 MMBtu/hour⁴; at 0.021 lb/MMBtu, emissions would be about 1.9 lb/hour, not 5.5 lb/hour. At 5.5 lb/hour, the emission rate for PPEC at 10% load would be 0.061 lb/MMBtu—almost three times the rate demonstrated by the only actual low-load emission test data in the record. In fact, at 79.9% of load, the 5.5 lb/hour BACT limit is approximately 0.0079 lb/MMBtu⁵, whereas at 1/10th percent of load higher, the limit drops to 0.0065 lb/hour. The Region does not explain how it landed at 5.5 lb/hour as representing BACT at all operating rates lower than 80%. (Id.) Rather, it notes only that 5.5 lb/hour was demonstrated to protect ambient air quality standards and to be achievable at all operating rates. (Response to Comments (Ex. 3) at 6.)

⁴ The Response to Comments document indicates that heat rate is not exactly linear across the full operating range. (Response to Comments (Ex. 3) at p. 16.) It is not clear whether the Final Permit measures compliance with the “80% load” PM BACT limit based on heat input or electricity production output. Therefore, it is not clear whether 10% load is 10% of the maximum heat input or the heat input to achieve 10% of rated electrical output. Regardless, the emission rates calculated here based on a percentage of the maximum heat input highlight the discrepancies in the record that are sufficiently large that a percentage or two difference in heat rate over the operating range would not explain them.

⁵ 5.5 lb/hour/(903 MMBtu maximum * 0.799)= 0.0076 lb/MMBtu.

THRESHOLD PROCEDURAL REQUIREMENTS

Sierra Club satisfies the threshold requirements for filing a petition for review under Part 124. Sierra Club has standing to petition for review of the permit decision because Sierra Club and its members participated in the public comment period on the draft permit. 40 CFR § 124.19(a). *See* Comments on behalf of the Sierra Club, attached as Sierra Club **Exhibit 4**. The issues raised by Sierra Club below were raised with the Region during the public comment period, were raised by other commenters, or are directly related to the Region's response to other comments (and therefore not reasonable ascertainable during the comment period). Consequently, the Board has jurisdiction to hear Sierra Club's timely request for review.

ISSUES PRESENTED FOR REVIEW

Sierra Club respectfully requests Board review of the following issues:

- (1) The Region improperly allowed the applicant to circumvent Congressional intent and EPA policy by defining its “source type” for purposes of a technological feasibility analysis based on design-specific attributes of its preferred production process, to the exclusion of cleaner production processes.

Sierra Club preserved this issue through comments, pursuant to 40 C.F.R. § 124.19(a). In its public comments Sierra Club noted that combined cycle natural gas plants were more efficient and would meet the project purpose. (Exhibit 4 at 4-5; Response to Comments (Ex. 3) at 27-30.)

- (2) The revisions made to the operating limits and the greenhouse gas BACT limit demonstrate the arbitrary and unlawful basis for both limits. The Region assumes high operating rates to establish the operational limits, yet establishes long-term BACT limits for greenhouse gases as if the units will always run at the worst-case, much lower, operating rate.

Sierra Club is not required to preserve this issue because it was not ascertainable at the time of public comment. This issue arose from the changes made by the Region between the draft and the final permit. 40 C.F.R. § 124.13.

- (3) The final permit BACT limit for CO₂ includes a 3% margin for “new unit variability” that has no basis in the record.

Sierra Club is not required to preserve this issue because it was not ascertainable at the time of public comment. This issue arose from the changes made by the Region between the draft and the final permit, including calculating new carbon dioxide BACT emission limits on pages 16-17 of the Response to Comments document (Ex. 3). 40 C.F.R. § 124.13.

- (4) The Region failed to create a record or provide sufficient explanation for the PM BACT limits, including:
 - a. failing to provide a sufficient evidentiary basis in the record for the compliance margin included in the PM BACT limit for operations over 80% load above the demonstrated emission rates at the five representative emission tests selected by the Region from other CTs;
 - b. failing to provide a basis for establishing 80% load as the threshold for the 0.0065 lb/MMBtu limit as BACT, versus the 5.5 lb/hour limit for all operating rates below 80%; and

- c. failing to provide a basis for the Region's determination that 5.5 lb/hour represents the lowest achievable emission rate for the entire range of operations below 80% load, especially in light of the only actual low-load emission data in the record showing a lower emission rate to be achievable.

Sierra Club preserved this issue through comments as to the 0.0065 lb/MMBtu limit. On pages 1 and 2 of its comments (Exhibit 4), Sierra Club noted that the emission data from existing combustion turbines cited by the Region showed emissions below the limit of 0.0065 lb/MMBtu and that the Region had not made a record nor explained how it derived a 0.0065 lb/MMBtu limit from those data.

Sierra Club was not required to preserve this issue through comments as to the Region's decision to apply the 0.0065 lb/MMBtu limit to only operations above 80% or to the decision to apply a 5.5 lb/hour limit to operations below 80%. Both of those issues arose because of changes made to the permit limits between the draft permit and the final permit. 40 C.F.R. § 124.13.

ARGUMENT

I. THE REGION IMPROPERLY USED THE APPLICANT'S INTENDED PRODUCTION PROCESS TO EXCLUDE ALL CLEANER PRODUCTION PROCESSES AS NOT "TECHNICALLY FEASIBLE."

A. Background on Establishing BACT Limits.

The Clean Air Act and U.S. EPA's implementing regulations require BACT emission limits for all new and modified pollution sources. 42 U.S.C. § 7475(a)(4); 40 C.F.R. § 52.21(j)(2). BACT is a limit based on the maximum degree of reduction achievable through, among other options, cleaner production processes. 42 U.S.C. § 7479(3) ("best available control technology" means an emission limitation based on the maximum degree of reduction of each pollutant... achievable for such facility through application of production processes"); *accord* 40 C.F.R. § 52.21(b)(12) (similar regulatory definition of BACT). A cleaner production process is central to this definition. 42 U.S.C. § 7479(3) (enumerated options for reducing pollution that are to be considered when establishing BACT limits include production processes); New Source Review Workshop Manual, Prevention of Significant Deterioration and Nonattainment Area Permitting at B.10, .13 (Draft, Oct. 1990) ("NSR Manual") (requiring identification and consideration of "Inherently Lower-Emitting Processes/Practices").⁶

The Region's BACT analysis concludes that combined-cycle gas turbines are not "technically feasible" for the project being permitted, as defined by the applicant. Fact Sheet (Ex. 2) at p. 17 ("combined-cycle facility is technically infeasible for the Project as defined by the

⁶ Although the NSR Manual is not a regulation and therefore not binding as a matter of law, the Board has regularly relied on it as a statement of the EPA's position and thinking on certain issues. *Mississippi Lime Co.*, 15 E.A.D. __, PSD 11-01, Slip op. at 8 n.4 (EAB, Aug. 9, 2011). (and collecting cases).

applicant”); Response to Comments (Ex. 3) at 27.⁷ The Region asserts that “when assessing the technological feasibility of a control technology, it is appropriate to consider whether the technology may reasonably be deployed on, or is applicable to, the source type under consideration.” (Response to Comments at 27.) The Region further clarifies that it is not saying that a combined-cycle power plant is technologically infeasible, but that it is technically infeasible for a combined cycle plant to meet the short startup times that the applicant uses to define its project. (Id.) In other words, the Region rejected the combined-cycle production process because it determined that the assumed startup times of the particular technology PPEC selected to meet SDG&E’s 2009 RFO defined the “source type” within the meaning of a Step 2 analysis. But “source type” refers to a general category of emission sources, not to specific design elements of a specific proposed facility. By equating “source type” with design parameters, the Region is doing in Step 2 of the BACT analysis what it is prohibited from doing in Step 1 – eliminating a control technology by narrowly defining the purpose of the project to preclude the use of applicable control technologies. *In re Desert Rock Energy Company LLC*, 14 E.A.D. __, PSD 08-03, -04, -05, -06, Slip op. at 59-65 (EAB, Sept. 24, 2009) (discussing “redefining the source” interpretation and prior cases).

Throughout EPA’s guidance and prior cases, it distinguishes step 1 of the top-down BACT analysis, in which an applicant’s fundamental design elements can be considered in determining control options that are available and those that “redefine the source,” *id.*, from Step 2, which

⁷ Combined-cycle electricity production was not rejected by the Region in the first step of the top-down BACT analysis process based on an assertion that it would “redefine the source.” *See e.g.*, NSR Manual at B.13 (discussing “redefin[ing] the source” as a consideration in step 1); *In re Desert Rock Energy Company, LLC*, 14 E.A.D. __, Case No. PSD 08-03, Slip Op. at 56 (EAB Sept. 24, 2009) (noting that in that case, the Region rejected an inherently lower emitting electricity production process in step 1—identifying applicable control options—based on a “redefining the source” theory, which was ultimately rejected by the Board).

considers application of controls to “source types.” NSR Manual at B.17 (Step 2 asks “if the control technology has been installed and operated successfully on the type of source...”), B.18 (whether technology is “‘applicable’ to the source type”); *Mississippi Lime*, Slip op. at 15 (control option that has been “installed and operated successfully on the type of source under review... is technically feasible.”) (quoting NSR Manual at B.17).

Specifically, Step 2 is limited to a technological analysis to determine whether the available options from Step 1 are feasible for the “type” of source being permitted—and not to the applicant’s proposed purpose or specific design elements. A “type” refers to a group, category, or class and not to a particular applicant or a particular facility’s unique design elements. *See e.g., Merriam-Webster’s Collegiate Dictionary* (p. 1354, 11th ed., vol. 5). Springfield, Massachusetts: Merriam-Webster, Inc. (“4d: a particular kind, class, or group”). Specifically, as used by EPA in BACT analyses, the phrase “source type” is distinct from a particular source, because it looks to similar facilities with similar physical and chemical emission characteristics and not to the specific qualities of the particular design put forward by the applicant. *See* NSR Manual at B.18. Therefore, the focus of a Step 2 analysis is on the feasibility of a control option, or technology, generally, and not the particulars of a specific facility’s design. Step 2 asks whether control option “is ‘demonstrated,’ in other words, by first asking whether it has been installed and operated successfully elsewhere on a similar facility.” *Mississippi Lime*, Slip Op. at 11 (citing NSR Manual at B.17.) If so, the inquiry need not consider the second question of whether a technology that has not been operated successfully elsewhere is nevertheless “available and applicable.” *Id.* Only those technologies that “are *neither* demonstrated nor found after careful review to be both available and applicable, are eliminated under step 2 from further analysis.” *Id.* (emphasis added). Here, there is

no question that combined-cycle generation is a production process that is demonstrated in practice. Hundreds of such facilities exist in the United States. Its elimination in Step 2 is not appropriate.

Moreover, the Region's interpretation of the Step 2 technical feasibility analysis would allow the applicant to define its proposed "source type" based on qualities specific to itself and a specific production process design. Here, it does so by allowing the applicant to use "technical feasibility" to mean its specific contractual obligations that are drafted based on a certain production process forming the basis for its proposal. (Response to Comments at 28.) This interpretation would effectively negate Congress' instruction to consider cleaner production processes when establishing BACT limits. *See* 42 U.S.C. § 7479(3) (defining BACT as "an emission limitation based on the maximum degree of reduction... achievable for such facility through application of production processes"). In fact, EPA has eschewed allowing sources to define its project purpose so narrowly as to exclude cleaner production processes or cleaner fuels in step 1 of a BACT analysis. It is only the "fundamental purpose" of the facility—and not particular design elements or unique qualities of specific design options—that determines whether a BACT requirement would "redefine" the source. *In re Northern Michigan University*, 14 E.A.D. ___, PSD 08-02, Slip op. at 26-27 (EAB, Feb. 18, 2009). Here, where the Region has not claimed in Step 1 that employing the cleaner combined-cycle production process "redefines the source," its expansive interpretation of "technical feasibility" analysis in Step 2 would invite applicants to "pav[e] an automatic BACT off-ramp" by reading cleaner production processes out of the statute thereby "frustrat[ing] congressional will." *Id.* at 27. Both the Board and the courts have rejected interpretations of BACT that would invite such subversion. *Id.* (citing *Sierra Club v. EPA*, 499 F.3d653, 656 (7th Cir. 2007).) The Region's interpretation of the "source type" in Step 2 is so narrow, in fact, that it invites every applicant to define it's preferred, higher-polluting, process into

its project description and thereby avoid BACT limits that would otherwise be based on cleaner production processes that are not rejected at Step 1 as “redefining the source.”

For example, in the Board’s *Desert Rock* case, it held that the Region (also the permitting authority in that case) improperly rejected integrated gasification combined cycle (IGCC) technology during a BACT review for a pulverized coal power plant. *In re Desert Rock Energy Company LLC*, 14 E.A.D. __, PSD 08-03, -04, -05, -06, Slip op. at 77 (EAB, Sept. 24, 2009). If, on remand, the Region could have simply asserted that IGCC is not “technically feasible” in Step 2 because it cannot be applied to a pulverized coal plant of the size and shape that the applicant had contracted to buy from a boilermaker, or because “the core process... is fundamentally different” to operate, *id.* at 68-69, the Board’s holding would be effectively meaningless. A permittee should not be invited to game the BACT process under Step 2 in ways that are not allowed under Step 1.

Moreover, an applicant’s desire to operate a proposed source in certain way—or, even in the only viable way—has never been allowed to shield the applicant’s specific design preference from the effects of a BACT determination. *See e.g., In re Pennsauken County*, 2 E.A.D. 667, 673 (Adm’r 1988) (noting that “imposition of the conditions may, among other things, have a profound effect on the viability of the proposed facility *as conceived by the applicant*” (emphasis added)); *In re Northern Michigan University*, 14 E.A.D. __, PSD 08-02, Slip op. at 25-26 (EAB, Feb. 18, 2009) (applicant’s business plan to rely on “just in time” fuel deliveries and existing coal suppliers did not shield fuel choices from alteration through BACT limits that would have altered these business plans of the applicant), 27 (“Clean fuels may not be ‘read out’ of the Act merely because their use requires ‘some adjustment’ to the proposed technology.”); (considering cost effectiveness issue after all control options selected); *Hibbing*, 2 E.A.D. at 843 (requiring consideration of burning natural gas, rather than petroleum coke, in the BACT analysis notwithstanding the applicant’s

desire and intent to use a different fuel). Thus, here, even if a cleaner production process may have an impact on the fastest ramp rate possible with the plant, and therefore impact how the applicant conceives of operating the plant, PPEC's operating preferences do not require that BACT limits be set based on higher polluting technology.

Furthermore, the particular cold start and ramp rates that the Region cites as the basis to find only the LMS100 generating technology, and not the cleaner combined cycle technology, to be technically feasible are not based on any record evidence. Notably, the Region suggests that the production process must achieve a startup rate of 100 MW in 10 minutes and 300 MW in 30 minutes, yet nothing in the record specifies this particular rate to meet the 2009 RFO or the PPA. Instead, only vague, generalized, narrative descriptions are used. For example, that the generation source must "be able to come online quickly," be "highly flexible," "provide regulation during the morning and evening ramps," "be repeatedly started and shut down as needed," and "be brought online quickly, even under cold-start conditions." (Fact Sheet (Ex 2) at p. 16.) Drawing the lines around these narrative descriptions so that only the specific attributes of a particular production process can meet them is exactly the type of "paving an automatic BACT off-ramp" from considering cleaner production processes that undermine congressional intent, and this Board's precedents, and should not be allowed.

II. THE FINAL PERMIT'S LONG-TERM CO₂ BACT EMISSION LIMIT BASED ON WORST CASE CONDITIONS CONFLICTS WITH THE DEFINITION OF BACT AND EPA PRECEDENT.

The CO₂ BACT limit for the combustion turbines changed dramatically from the draft permit to the final permit. In the draft permit, the Region proposed a BACT limit for the combustion turbines of 1,181 lb CO₂/MWh-net. (Draft Permit (Ex. 5) at 6.) In the final permit, however, the Region established a limit of 1,328 lbs CO₂/MWh-gross. (Permit (Ex. 1) at 6.)

Whereas the draft permit limit was based on a heat rate of 9,196 Btu/kWh-gross, Fact Sheet (Ex. 2) at 20-21, the final permit limit was based on a heat rate of 11,358 Btu/kWh-gross. Response to Comments (Ex. 3) at 16. This significant change in the CO₂ BACT limit basis was in response to the applicant's contention that it cannot achieve 9,196 Btu/kWh heat rates (and corresponding pounds of CO₂ per MWh emission rates) when operating at low load conditions. (Response to Comments (Ex. 3) at 14-17.) However, rather than establishing a limit that accounts for the fact that heat rates, and therefore emission rates, change to correspond with load changes, the Region took the drastic step of establishing a BACT limit that will apply on a long term (30 days or greater) averaging basis based on the highest heat rate and emission rate. (Id.)

That is, the Region assumed when establishing the BACT limit that the PPEC plant would operate at all times at 50% load and therefore have a heat rate of 11,358 Btu/kWh-gross and corresponding emission rate of 1,328 lb/MWh. (Id.) Yet, nowhere in the record is there a basis to assume continuous—*i.e.*, all 720 operating hours in each 720-hour rolling average—operation at 50% load. In fact, as set forth above, the final permit also assumes when setting the heat input limit of 3,914,556 MMBtu/year that the plant will operate at full load during the 4000 hours it is expected to operate each year, plus somewhere between zero and full load during the approximately 337 hours of startup and shutdown that are expected each year. (Response to Comments (Ex. 3) at 9.) In effect, the Region did the opposite of setting secondary BACT limits for periods of higher emissions that cannot comply with stringent BACT limits, *see e.g., In re Indeck-Elwood LLC*, 13 E.A.D. 126, 178 n. 100 (EAB 2006) (explaining the practice of establishing secondary BACT limits for higher-emitting operating periods), by establishing BACT for all periods of operation based on the achievable rate during the highest-emitting periods.

The effect of the changes made to the CO₂ BACT limit in the final permit is that the limit will never ensure that the plant is required to emit at BACT-level emission limits. Instead, because the plant is not expected to continuously operate at 50% load, every 720 operating hours within the BACT limit averaging period will include few instances of 50% load and the remaining hours at higher operating rates and lower emissions. This means that even when operating at 50% load, the plant can emit at rates greater than 1,328 lb/MWh because those periods will be averaged out with the other hours of higher operating rates, when emissions are necessarily lower.

Furthermore, the Region’s decision to establish BACT limits based on the worst-case operating conditions—which are not representative of lower-emitting operations during other periods—ensures that during most periods the source is not subject to BACT-level emission limits. Specifically, the CO₂ BACT limit in the final permit is based on the high heat rate, low efficiency, high emission rate that occurs when the combustion turbines operate at 50% of load. (Response to Comments (Ex. 3) at 16.) That heat rate (11,358 Btu/kWh after a 1.4% adjustment for variable performance based on ambient conditions, 3% for variability in new units, and another 3% for degradation in performance over time)⁸ translates to 1,328 lbs/MWh as the final permit limit on a 720 operating hour rolling basis. (Id. at 17.) In contrast, the heat rate at full load and applying the same 7.4% total “variability” is 9,385 Btu/kWh⁹-- which translates to an 18% lower emission rate of 1,097 lbs/MWh. Although the plant will operate at rates above 50% load during many, if not most, of its operating hours, and during those times lower CO₂ emission rates are achievable based on the better heat rate that occurs at higher operating rates alone, the final permit establishes a BACT-level emission rate for only those hours when the unit operates at 50% load.

⁸ 10,576 Btu/kWh * 1.014* 1.03*1.03= 11,358 Btu/kWh.

⁹ 8,738 Btu/kWh (from Ex. 3 at p. 14) * 1.014* 1.03 * 1.03= 9,385 Btu/kWh

III. THE CO₂ BACT LIMITS INCLUDE SAFETY FACTORS THAT ARE NOT BASED ON RECORD EVIDENCE.

As described above, the Region established new CO₂ BACT limits by starting with the identified heat rate when operating at 50% load. (Response to Comments (Ex. 3) at 16-17.) However, in doing so, the Region did not directly determine the emission rate from the heat rate. Instead, it added three different safety margins: (1) 1.4% to represent turbine performance variation “with ambient conditions”; (2) 3% for “variability in the new unit”; and (3) 3% for “degradation in performance over time.” These safety margins were added to the heat rate, which was then converted to pounds of CO₂ per MWh of energy production in the final permit. (Response to Comments (Ex. 3) at p. 17.) Thus, each of these percentage safety margins represents a direct increase in the emission limit.

Nowhere in the record is there a factual basis for these safety margins. Even if one grants the Region that there may be some variation in heat rate due to variation in ambient conditions, there is no basis in the record for the apparent conclusion that the ambient conditions result in 1.4% different in heat rate. Similarly, even if one were to grant that a new unit, as built, could slightly differ from its design and therefore have a different heat rate than designed, there is no factual basis in the record that a new unit will have a variation of 3% from the design heat rate (or that the variation is necessarily an increase, rather than a decrease in heat rate). And, finally, even if wear on a combustion turbine over time results in a decrease in an increase in heat rate, there is no factual basis in the record for assigning that decrease a 3% value. This lack of a factual record for each of these elements to the final CO₂ BACT emission limit requires remand.

The Board has repeatedly instructed permitting authorities that BACT determinations must be documented in the record. *In re Desert Rock Energy Co., LLC.*, PSD Appeal Nos. 08-03 thru

08-06, slip op. at 50 (EAB Sept. 24, 2009); *Newmont Nev. Energy Inv., LLC*, 12 E.A.D. 429, 442 (EAB 2005); *In re Gen. Motors, Inc.*, 10 E.A.D. 360, 363 (EAB 2002). Even when the Board generally defers to a permitting authority on technical issues, that does not relieve the permitting authority “of its obligation to adequately explain and support its rationale in the record.” *In re ConocoPhillips Co.*, 13 E.A.D. 768, 799 (EAB 2008) (citing *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 510 (EAB 2006) 510; *In re N.E. Hub Partners, L.P.*, 7 E.A.D. 561, 568 (EAB 1998). Here, the Region’s failure to document a factual basis in the record evidence for each of the upward adjustments in the BACT calculation requires a remand of the permit to make that record (or remove the upward adjustments).

IV. THE PM BACT LIMITS FOR THE COMBUSTION TURBINES ARE NOT SUPPORTED BY SUFFICIENT EVIDENCE IN THE RECORD OR BY SUFFICIENT EXPLANATION BY THE REGION.

The permit for the PPEC plant must contain BACT limits for particulate matter (PM/PM10/PM2.5), which is defined as:

an emissions limitation based on the maximum degree of reduction of each pollutant subject to regulation under [the Act] 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.

42 U.S.C. § 7479(3); 40 C.F.R. § 52.21(b)(12); *see also* 42 U.S.C. § 7475(a)(4) (requiring BACT); 40 C.F.R. § 52.21(j)(2) (same). This definition requires limits to be set based on the maximum achievable emission reduction with the best pollution control option and “tailor-made” for that facility and that pollutant. *In re CertainTeed Corp.*, 1 E.A.D. 743, 747 (Adm’r 1982); *NSR Manual*

at B.2 (“The reviewing authority then specifies an emissions limitation for the source that reflects the maximum degree of reduction achievable for each pollutant regulated under the Act.”). The plain meaning of “maximum” is “the greatest quantity, number, or degree possible or permissible; the highest degree or point (of a varying quantity...) reached or recorded; upper limit of variation.” Websters New World College Dictionary 837 (3rd Ed. 1997). Courts have instructed that the words “maximum” and “achievable” constrain EPA’s discretion in setting limits. *See Alaska Dept. of Envntl. Conservation v. EPA*, 540 U.S. 461, 485-89 (2004). The Board has repeatedly instructed permitting authorities that “BACT determinations are one of the most critical elements in the PSD permitting process, must reflect the considered judgment on the part of the permit issuer, and must be well documented in the administrative record.” *Mississippi Lime*, Slip Op. at 17 (citing *In re Desert Rock Energy Co., LLC.*, PSD Appeal Nos. 08-03 thru 08-06, slip op. at 50 (EAB, Sept. 24, 2009); *Knauf I*, 8 E.A.D. at 132; *In re Newmont Nev. Energy Inv., LLC*, 12 E.A.D. 429, 442 (EAB 2005); *In re Gen. Motors, Inc.*, 10 E.A.D. 360, 363 (EAB 2002)).

A. The Region’s Final BACT Limit For Operations Greater Than 80% of Load Lacks A Basis In The Record Describing How The Region Concluded That 0.0065 lb/MMBtu Represents BACT Based On The Five Lower Emission Test Results The Region Relied Upon.

As noted above, the Region established a PM BACT limit for all species of particulates (PM, PM10 and PM2.5) based on five emission tests from southern California combustion turbines that occurred during 2010 and 2011. (Fact Sheet (Ex. 2) at p. 14.) However, those emission data showed a range of 0.0008 lb/MMBtu to 0.0049 lb/MMBtu, whereas the Region proposed a BACT limit of 0.0065 lb/MMBtu. (Id.) Sierra Club commented that nothing in the record cited by the Region supported a limit of 0.0065 lb/MMBtu since the highest rate demonstrated in the five test results relied on by the Region was 0.0049 lb/MMBtu. (Sierra Club Comments (Ex. 4) at pp. 1-2.)

If intended to represent a “compliance margin,” Sierra Club noted in comments, the Region had not demonstrated a need for a compliance margin above 0.0049 lb/MMBtu, much less the compliance margin represented by 0.0065 lb/MMBtu. (Id.) Nevertheless, the Region’s final permit includes the 0.0065 lb/MMBtu limit, which represents a rate 32% higher than the highest emission data cited by the Region.¹⁰

The Region’s only response to Sierra Club’s comments about the lack of a basis for the 0.0065 lb/MMBtu limit was to note that the five emission tests it cited showed that emission rates could vary depending on the sulfur content of the pipeline natural gas and any lubricating oils in the unit. (Response to Comments (Ex. 3) at p. 26.) The Region also noted that the emission test data it relied on in the record were from a different combustion turbine model than the one being permitted. (Id. at 27.)¹¹ Yet, even assuming these assertions are true, they show only a basis for concern that the PPEC units could not continuously achieve the lowest demonstrate rate in the record. (Id.) They do not show, however, that the PPEC units cannot achieve the highest emission rate among the data selected by the Region (0.0049 lb/MMBtu), nor that a limit 32% higher than that rate is necessary to ensure compliance.

To the extent that the Clean Air Act’s plain language does not preclude an agency from establishing limits higher than the lowest emission rates achievable with the best control technology, the Board’s prior decisions hold that any operating margin above that demonstrated maximum emission reduction (lowest emission rate) must be based on specific findings in the

¹⁰ $(0.0065 - 0.0049)/0.0049 = 32.6\%$

¹¹ The Region does not specify how the turbine designs are different or whether any differences would result in emissions from PPEC that are higher or lower than those turbines it selected as the basis for the PM BACT limit in this case. *See e.g., In re Vulcan Construction Materials*, Slip op. at 35 n.34 (permitting authority asserted differences between sources of emission test data, but failed to analyze whether any differences resulted in emissions that are higher or lower than other facilities).

record, supported by evidence in the record. In *Newmont Nev. Energy Inv., LLC*, the Board accepted a limit that was higher than the lowest pollution rate potentially achievable through the best pollution controls because there was no evidence in the record that such limit was, in fact, achievable. 12 E.A.D. 429, 440 (EAB 2005). Under those circumstances, where *no* data existed, the Board nevertheless instructed the permitting agency that it must “adequately explain its rationale for selecting a less stringent emissions limit, and that rationale must be appropriate in light of all evidence in the record.” *Id.*

In *In re Russell City Energy Center*, 15 E.A.D. ___, PSD Appeal Nos. PSD 10-01; PSD 10-02; PSD 10-03; PSD 10-04; PSD 10-05; PSD 10-12; PSD 10-13 (EAB Nov. 18, 2010), the Board summarized the requirement that the permitting authority document its basis for not establishing BACT at lower limits that have been demonstrated in practice, holding “that the permit issuer is obliged to adequately explain its rationale for selecting a less stringent emissions limit, and that rationale must be appropriate in light of all evidence in the record.” *Id.* at 79. Specifically, where the petitioners in that case raised emissions performance test results at similar facilities, the Board held that the permitting agency was “obligated to adequately explain its rationale for selecting a less stringent emission limit, and that rationale must be appropriate in light of all evidence in the record.” *Id.* at 80. Such a demonstration is “inherently fact-specific and unique to the particular circumstances...” *Prairie State*, 13 E.A.D. at 55.

This record here, like the record in other cases where the Board remanded BACT determinations, stand in sharp contrast to *Russell City*, where the permitting agency used permit limits from recently permitted sources, plus emission performance data from other sources, and analyzed those data to determine the range of emission rates for similar sources. Slip. Op. at 80-81. In response to comments, the permitting agency in *Russell City* gathered and analyzed additional

data. *Id.* at 82. It then provided an explanation in the record for the specific “compliance margin” included in the BACT limits in that case. *Id.* The Board was then able to review both the evidence relied upon by the permitting authority and the agency’s analysis, to conclude that both were reasonable. *Id.* at 84. Here, however, the Region provides only its conclusion that 0.0065 lb/MMBtu (when operating above 80% load) represents BACT. As the Board has held in prior cases addressing the same issue:

While a well-supported compliance or safety margin will generally be upheld by this Board, a compliance or safety margin can cross the line from permissible to impermissible where it is excessively large or is not sufficiently documented and supported. Thus, selection of a reasonable safety factor is not an opportunity for the permittee to argue for, or for the permit issuer to set, a safety factor that is not fully supported by the record, or that does not reflect the exercise of the permit issuer’s considered judgment in determining that the emissions limit, including the safety factor, constitutes BACT.

Mississippi Lime, Slip Op. at 27-28 (internal quotes and citations omitted). Thus, even where a permitting authority determines that unavoidable variation in the emission control achievable with the top-ranked control option in a BACT analysis requires a compliance margin within a permit, above demonstrated lower emission rates from other facilities, the permitting authority must also make a record and provided a sufficient demonstration for the *amount* of compliance margin included in the final limit. *Id.* at 32-33 (finding that even if the authority “had established the need for compliance margins,” the authority still erred by failing to create a record that included “explanations for the actual margins” included in the final limits and requiring “sufficient rationales for the sizes of any such margins”); *In re Vulcan Construction Materials*, 15 E.A.D. ___, PSD 10-11, Slip op. at 34 (EAB, March 2, 2011) (holding that even when there is an explanation for the need to establish a limit higher than demonstrated lower emission rates at other facilities “it does little to

explain *the size of the particular compliance margin* chosen in this case” (emphasis added)), 35 (finding that the permitting authority erred by failing to provide explanation or data to support the need for a compliance margin, and additionally for failing to “provide any data or analysis supporting the size of the compliance margin”), 36 “even if [permitting authority] had established the need for a compliance margin, the record is wholly devoid of an explanation for the 30% margin for NO_x or the 240% margin for CO”).

The use of a compliance margin, and the establishment of a BACT limit, “is not an opportunity for the permittee to argue for, and the permit issuer to set, a safety factor that is not fully supported by the record, or that does not reflect the exercise of the permit issuer’s considered judgment...” *Russell City*, Slip. Op. at 86. At a minimum, the Region is required to identify the data in the record of the range of emissions from similar combustion turbines and explain how those data support the specific emission limits established in the permit. *See In re Mississippi Lime Co.*, 15 E.A.D. ___, PSD 11-01, Slip op. at 24 (EAB, Aug. 9, 2011) (remanding BACT determination where the permitting authority failed to explain how it determined from the record evidence how it reached the specified numeric permit limit from its BACT determination), 30-31 (permitting authority failed to specify how it determined the margin between its BACT limit and compliance data from other sources represented the appropriate margin supportable by the record), 32 (permitting authority failed to provide an explanation in the record for how it derived the specific numeric value representing a limit with a compliance margin). Nowhere in the record does the Region document why 0.0065 lb/MMBtu represents the appropriate compliance margin, as opposed to the 0.0049 lb/MMBtu highest emission rate from the data set the Region selected, or even 0.0050, 0.0055 or 0.0060 lb/MMBtu. While under some circumstances the Board has allowed a permitting authority to establish a BACT limit at a rate other than the lowest demonstrated

emission rate, it has done so only where the permitting authority has documented its basis in the record. *Mississippi Lime*, Slip op. at 25 (citing NSR Manual at B.24); *Vulcan Construction Materials*, Slip op. at 36-37. That was not done here. Remand is appropriate.

B. There Is No Basis In The Record For The Region’s Determination That 80% Load Represents The Operating Range Below Which 0.0065 lb/MMBtu Is Not Achievable.

As also noted above, the Region revised the BACT limit at the request of the applicant to specify that the 0.0065 lb/MMBtu PM limit only applies “at loads of 80% or higher.” (Permit (Ex. 1) at 6.) This change was requested by the applicant because, it claimed, it may not be able to comply with an emission limit of 0.0065 lb/MMBtu at “low load.” (Response to Comments (Ex. 3) at 6.) Even if it were true that the PPEC combustion turbines could not achieve 0.0065 lb/MMBtu at all operating levels, there is no basis in the record to determine that 80% load is the threshold above which 0.0065 lb/MMBtu is achievable¹², and below which it is not achievable. Since the effective emission limit for operations of just below 80% load are significantly higher than 0.0065 lb/MMBtu (at 79.9% load, the limit is approximately 0.0079, or 20% higher). Even assuming that a less stringent low-load PM BACT limit is necessary, the less stringent low load limit should only apply to those operating conditions at which 0.0065 lb/MMBtu is not achievable. The record does not support a conclusion that 80% load defines that point. Instead, the Region appears to have arbitrarily picked that number. While a permitting authority may be due deference as to its documented and explained technical determinations, conclusory determinations lacking record evidence in support or a reasoned explanation are not. *See e.g., Vulcan Construction Materials*, Slip op. at 36 n.35 (conclusory assertions not due deference).

¹² The only “evidence” that the Region cites for this is a self-serving, and unsupported, assertion by the permit applicant. *See* Response to Comments (Ex. 3) at p. 6 n.3 (citing email from applicant’s engineering firm to Region).

C. There Is No Basis In The Record For The Region’s Determination That 5.5 lb/hour Represents The Lowest Achievable Emission Rate For All Loads Lower Than 80%.

In addition to lacking a basis for using 80% load as the demarcation for where 0.0065 lb/MMBtu is achievable, the record also lacks a basis for the Region’s conclusion that for the entire operating range below 80% load, 5.5 lb/hour represents the “maximum degree of reduction... achievable.” 42 U.S.C. § 7479(3). As noted above, the only actual emission data in the record for “low load” particulate emissions indicates that even as low as 10% load from cold start conditions, emissions of 0.021 lb/MMBtu were achievable. (Response to Comments (Ex. 3) at p. 19.) This represents less than half of the emission rate that is required by the 5.5 lb/hour limit that the final permit establishes as BACT for the entire range of operations up to 80% load. Especially in light of this data in the record showing that 0.0021 lb/MMBtu was achieved at very low load conditions, the lack of any record evidence to support the 5.5 lb/hour BACT limit is remarkable.

CONCLUSION

For these reasons we respectfully urge the Board to review and remand the Pio Power Energy Center LLC PSD permit to the Region.

Respectfully submitted, this 19th day of December, 2012.

MCGILLIVRAY WESTERBERG & BENDER LLC



David C. Bender
211 S. Paterson Street, Ste 320
Madison, WI 53703
Phone: (608) 310-3560
Fax: (608) 310-3561
bender@mwbattorneys.com

SIERRA CLUB
Joanne Spalding
Travis Ritchie
85 Second Street
San Francisco, CA 94105
Phone: (415) 977-5725
Fax: (415) 977-5793
joanne.spalding@sierraclub.org
travis.ritchie@sierraclub.org

STATEMENT OF COMPLIANCE

Pursuant to the Board's April 19, 2011, Order Governing Petitions for Review of Clean Air Act New Source Review Permits, this Petition compliance with the word limitation set by the Board. This Petition contains 8,871 words, based on the word count function in Microsoft Word.

A handwritten signature in black ink, appearing to read "D.C. Bender", with a horizontal line extending to the right.

David C. Bender