

notice and comment rulemaking to determine whether it meets the requirements of the CAA. CAA § 110(k)(2); 42 U.S.C. § 7410(k)(2). EPA must approve a SIP submission that meets the minimum requirements of the Act. CAA § 110(k)(3); 42 U.S.C. § 7410(k)(3); 40 C.F.R. §§ 51.123(o)(1) - (2); 51.124(o)(1) - (2); *see also Union Elec. Co. v. EPA*, 427 U.S. 246, 265 (1976). EPA does not have any discretion to reject a complete SIP on any ground beyond that it fails to meet the minimum requirements of the Act. Thus, approval of a state SIP "is not a 'significant regulatory action'" *See* 73 Fed. Reg. 11,845, 11,846 (March 5, 2008); *accord* 73 Fed. Reg. 23,101, 23,102 (April 29, 2008). If the consequences of accepting the Delaware SIP – a duty over which EPA has little discretion – were as drastic as Petitioners now allege, SIP approval would have been a major federal action with a very significant impact. However, Petitioners misstate the impact of SIP approval. In reality, consistent with the CAA, EPA Region 3's action did not and could not make Delaware's state-law-only CO₂ provisions part of the CAA.

3. *New Arguments Raised by Petitioners Do Not Support Petitioners' Assertion that CO₂ Is Regulated.*

With these latter two arguments, Petitioners are again pointing to disparate and ill-fitting examples in a misguided attempt to create a massive, far-reaching and completely unintended emissions control regime for all sources of CO₂ over 100-250 tons per year. Ultimately, however, Petitioners still fail to demonstrate by these arguments that CO₂ is "subject to regulation" as interpreted by the EPA, an interpretation that is not clearly erroneous, and that is entitled to deference from the Board.

a. Congress's 2008 Appropriations Legislation Does Not Make CO₂ Subject to Regulation.

- i. The Appropriations Issue Was Never Raised in Comments, and thus Petitioners Lack Standing to Raise this Argument.

This is another issue that Petitioners have waived by failing to raise it properly during the comment period for the Desert Rock permit. The public comment period on the draft PSD permit for the Desert Rock Project was held from July 27, 2006 through November, 13, 2006. The *Fiscal Year 2008 Consolidated Appropriations Act*, H.R. 2764; Pub. L. 110-161 ("2008 Appropriations Act"), was enacted on December 26, 2007. NGO Petitioners submitted at least five comments³⁰ after the 2008 Appropriations Act was enacted, and never once raised this issue, even by passing reference. Accordingly, Petitioners have failed to raise this issue in any capacity with EPA, and thus do not have standing to raise the issue in this appeal.

- ii. The 2008 Appropriations Act Requiring Increased Monitoring of CO₂ Does Not Subject CO₂ to Regulation.

Even if the Board were to reach the merits of Petitioners' argument, the 2008 Appropriations Act simply calls for increased monitoring, which, for the same reasons discussed above with respect to every other monitoring and recording obligation Petitioners cite to, does not equate to "subject to regulation" under EPA's interpretation.

b. No Endangerment Finding Has Been Made with Respect to CO₂.

Petitioners have pieced together a variety of predictions and statements made by various EPA officials in a baseless effort to convince the Board that EPA has made an implicit endangerment finding on a national basis regarding CO₂ under Section 202(a) of the CAA. *See*

³⁰ As noted previously (*see* n.12, *supra*) EPA rejected all comments submitted after March 2008 (which included four of NGO Petitioners' comments) because they did not raise any significantly new intervening events, and "they were submitted more than seventeen months after the close of the comment period and the commenters could have been reasonably expected to submit them at the appropriate time during the comment period." AR 121 at 1.

generally NGO Petitioners' Supp. Br., Section I.1.D.iv. According to Petitioners, this undeclared "finding" is enough to subject CO₂ to regulation under the Act. *See id.* at Section I.1.D.i. Petitioners could not be more wrong in their assessment. First, because endangerment findings trigger other duties and responsibilities throughout many inter-related sections of the CAA, implicit conclusions do not constitute endangerment findings by the Administrator. Second, and more critical, an endangerment finding alone is not enough to subject CO₂ to regulation.

Endangerment requirements call on the Administrator to "exercise his or her judgment regarding whether a particular air pollutant or source category causes or contributes to air pollution which may reasonably be anticipated to endanger public health or welfare." *ANPR* at 160. EPA has explained that it views the phrase "in his or her judgment" to "call for the Administrator to make comparative assessment of risks and projections of future possibilities, consider uncertainties, and extrapolate from limited data." *Id.* at 173. Accordingly, to make a positive endangerment finding, the Administrator must balance the likelihood and severity of possible effects of a pollutant in exercising his or her judgment. *Id.* A positive endangerment finding is a prerequisite for regulation under any provision that has an endangerment test. *Id.* The positive finding itself does not constitute a regulation requiring actual control of emissions. *Id.* at 166. Rather, once an endangerment finding is made, EPA still needs to implement regulations. *Id.* at 74. Only then will the pollutant be subject to actual control.

A great deal of discussion in the ANPR is dedicated to the fact that the Administrator has not yet made such an endangerment finding, but is considering possibly doing so.³¹ Thus, the

³¹ *See, e.g., ANPR* at 174-75, where EPA states:

The CAA does not define the concept "cause or contribute" and instead requires that the Administrator exercise his judgment when determining whether emissions

ANPR alone negates Petitioners' arguments that an implicit endangerment finding has been made. Without this prerequisite, there is no authorized regulation of greenhouse gases such as CO₂.

For the reasons stated above, Petitioners have failed to establish that EPA's interpretation of "subject to regulation," formalized by the Johnson Memorandum and supported by the Desert Rock administrative record, is clearly erroneous, nor that there is any policy matter over which the Board should exercise its discretion. Further, Petitioners cannot show that, in light of the Agency's formal interpretation that CO₂ is not a regulated pollutant, any different outcome from the current state of things would result were the Board to review the Desert Rock PSD Permit. Accordingly, the EAB should deny review of all issues raised by Petitioners regarding whether a CO₂ BACT limit must be imposed in the Desert Rock PSD permit.

II. EPA REGION 9 PROPERLY FOUND THAT CONSIDERATION OF IGCC IN THE BACT ANALYSIS WOULD AMOUNT TO RE-DEFINING THE PERMITTED FACILITY

A. EPA Has Wide Discretion Regarding Whether to Consider IGCC as a Control Option in a BACT Determination.

EPA's 1990 Draft New Source Review Manual recommends a standardized "top-down" process for BACT determinations. NSR Manual; *see Indeck*, slip op. at 10 (citing *Inter-Power*, 5 E.A.D. at 135). As the Board has repeatedly pointed out, the "top-down" BACT analysis is not mandatory, 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

of air pollutants cause or contribute to air pollution. As a result, the Administrator has the discretion to interpret "cause or contribute" in a reasonable manner when applying it to the circumstances before him. In sum, EPA invites comment on all issues relevant to making an endangerment finding, including the scientific basis supporting a finding that there is or is not endangerment under the CAA, as well as the potential scope of the finding (i.e., public health, welfare, or both).

reached. See *In re Prairie State Generating Company, LLC*, PSD Appeal No. 05-05, slip op. at 16 (EAB Aug. 24, 2006) ("Prairie State") (citing *In re Steel Dynamics, Inc.*, 9 E.A.D. 165, 183 (EAB 2000)). A "top-down" approach accomplishes this through the completion of five basic steps: (1) identifying all available control options for a targeted pollutant, (2) analyzing the technical feasibility of each control option, (3) ranking the feasible options in order of effectiveness, (4) evaluating the energy, environmental, and economical impacts associated with each option, and (5) selecting as BACT a pollutant emission limit that is achievable by the most effective control option that was not eliminated in a preceding step. NSR Manual at B-6.

The first step in a "top-down" analysis is to identify, for the emissions unit in question, all "available" control options. NSR Manual at B-5. Available control options are those air pollution control technologies or techniques with a practical potential for application to the emissions unit and the regulated pollutant under evaluation. *Id.* Air pollution control technologies and techniques include the application of production process or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of the affected pollutant. *Id.* The identification process should consider technologies employed outside of the United States. *Id.* In some circumstances, inherently lower-polluting processes are appropriate for consideration as available control alternatives. *Id.* The available control alternatives should include not only existing controls for the source category in question, but also controls applied to similar source categories and gas streams, and innovative control technologies. *Id.*

NGO Petitioners claim the BACT process requires evaluation of IGCC as a potentially lower-emitting production process and "innovative fuel combustion technique" when considering a permit application for a pulverized coal-fired power plant, such as Desert Rock. NGO

Petitioners' Supp. Br. at 72. However, permitting, financing, designing, constructing, and operating an IGCC power plant, amounts to a monumental and redefining change in the project scope as compared to the activities associated with a pulverized coal-fired power plant. Accordingly, EPA was correct in concluding that IGCC would redefine the Desert Rock project and therefore in declining to consider IGCC in the BACT determination.

EPA and the EAB have recognized that there are limits on the degree to which a permitting authority can and should dictate the design and scope of a proposed facility through the BACT analysis. The NSR Manual states:

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 electric 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). However, this is an aspect of the PSD permitting process in which [permitting authorities] have the discretion to engage in a broader analysis if they so desire.

NSR Manual at B-13 (emphasis added). This passage in the NSR Manual is referred to as EPA's "redesign policy" and has been implemented by EPA for some time. The EAB has upheld this policy of not redefining the sources of a proposed facility in many other PSD permitting proceedings and has stated that the NSR Manual "makes clear that the permitting authority is entitled to wide latitude in how broad a BACT analysis it wishes to conduct in this regard." *In re Hawaiian Commercial & Sugar Co.*, 4 E.A.D. 95, 100 (EAB 1992).

For example, in *In re Old Dominion Electric Cooperative*, which involved a permit issued under federal PSD permitting regulations by the Commonwealth of Virginia (pursuant to a delegation of authority from EPA Region 3), the Administrator found no clear error in the Commonwealth's adherence to the "redesign policy" and subsequent rejection of a challenger's proposal to substitute one type of electric generating facility (fired by natural gas) for another

(coal-fired) on the grounds that such an alternative would redefine the source. 3 E.A.D. 779, 793-94 (Adm'r 1992); *see also In re SEI Birchwood, Inc.*, 5 E.A.D. 25, 29 (Adm'r 1994) (rejecting a challenge based on EPA's failure to consider a natural gas-fired facility in place of the proposed 220-megawatt coal-fired electric generating facility).

Further, the same year it decided *Old Dominion Electric*, the Board also upheld the State of Hawaii's application of the "redesign policy" in excluding consideration of a different boiler type under step 1 of the "top down" BACT analysis. *Hawaiian Commercial*, 4 E.A.D. 95 (EAB 1992). In that case, the applicant requested a PSD permit covering the construction of a 30 MW Circulating Fluidized Bed ("CFB") Boiler, which was designed to burn three different types of fuels— coal, fuel oil and biomass — to preserve maximum operational flexibility. *Id.* at 95. The petitioner in the case argued that the EPA should have required the applicant to install a combined cycle facility fueled with low sulfur distillate or residual oil instead. *Id.* at 99. In its permitting decision, the State of Hawaii (acting under delegated authority), rejected this argument, reasoning that the State did not have the authority under the PSD regulations to define the type of boiler to be used, or even to require use of a specific type of equipment, fuel, or air pollution control device. *Id.* at 99 n.7. The Board agreed with the State's application of the "redesign policy," noting that the petitioner's choice of boiler and fuel would redefine the source. *Id.* at 100. In reaching this conclusion, the Board noted that the definition of BACT includes consideration of both clean fuels and air pollution control devices, and so the State did in fact have the authority to consider requiring specific equipment, fuel or air pollution control devices. *Id.* at 99 n.7. Nonetheless, the Board noted that that "the permitting authority is entitled to wide latitude in how broad a BACT analysis it wishes to conduct in this regard," and that the

petitioner had "provided no good reason for curtailing [the State's] discretion here nor [had] he shown that the State abused this discretion." *Id.* at 100.

Petitioners here attempt to distinguish *Old Dominion Electric* and *Hawaiian Commercial* as irrelevant to this proceeding because those cases involved petitioners seeking to replace a proposed coal-fired power plant with one burning an entirely different fuel. NGO Petitioners' Supp. Br. at 84 n.59. In making this argument, however, Petitioners overlook the main holdings of those cases, which are that permitting authorities have wide discretion in determining the scope of the available control technologies for a proposed facility.

Petitioners also ignore the EAB's ruling in *Inter-Power*, where the Board specifically determined that the redesign policy was applicable to two different types of coal-fired power plants. 5 E.A.D. at 146. In *Inter-Power*, the Commonwealth of Massachusetts challenged a PSD permit issued by EPA Region 2 for the construction of three CFB boilers in Halfmoon, New York, asserting that BACT for SO₂ should have been based on the BACT considered in a recently permitted pulverized coal power plant. *Id.* at 131-32. The Commonwealth had submitted a comment during the public notice and comment period on the draft *Inter-Power* permit arguing that a pulverized coal power plant at the Ware Cogen facility was similar to the proposed Halfmoon CFBs. *Id.* at 141. In response to this comment, EPA Region 2 explained that Ware Cogen was not a similar source because it was a pulverized coal power plant, not a coal-fired fluidized bed boiler facility. *Id.* at 141 n.19. The Board agreed with EPA Region 2, noting that "the Ware Cogen facility was not a coal-fired fluidized bed facility. Rather, it is a pulverized coal facility Therefore, the Region did not clearly err in not considering Ware

Cogen as a 'similar source'" even though the two sources each used coal as its primary fuel source.³² *Id.* at 146.

The EAB precedent established in *Old Dominion*, *Hawaiian Commercial* and *Inter-Power* squarely conflicts with NGO Petitioners' main argument as to IGCC. Thus, by their petition, NGO Petitioners are requesting that the EAB overturn its policy of recognizing a permitting authority's discretion in applying the redesign policy during BACT determinations between clearly different sources using different fuels, such as a coal-fired and natural gas-fired power plant, but also between different combustion types using the same fuel such as the difference between a pulverized coal facility and a coal-fired fluidized bed facility. In advancing this position, NGO Petitioners have focused on the fact that the Desert Rock Project will use the same fuel and will produce the same saleable product (electricity) as an IGCC plant. However, as clearly established in *Inter-Power* where coal was a common fuel for both the proposed technology and a proposed alternative technology that the Board found would redefine the source, and where each technology produced electricity, these two facts do not preclude application of the redesign policy nor do they require EPA to consider any specific factors when determining whether a different source category should be considered as a control option in a particular BACT determination.

³² As reflected in the Desert Rock administrative record, EPA Region 9 used its discretion and compared emissions reduction efficiencies from a coal-fired fluidized bed facility to those from Desert Rock even though it was not required to do so under the *Inter-Power* decision. See AR 46 at 32-35.

B. As Explained in the Record, EPA's Finding that IGCC Should Not be Considered as a Control Option for a Pulverized Coal Power Plant is Based upon Sound Judgment and is Neither Clearly Erroneous Nor an Abuse of EPA's Recognized Discretion.

Given the vast technical and physical differences between an IGCC plant and a pulverized coal-fired power plant, and the Board's established policy of granting permitting authorities wide discretion in determining the breadth of the BACT analysis it wishes to conduct for a permit application, the Petitioners are hard pressed to demonstrate to the Board that EPA committed clear error, abused its discretion or acted arbitrarily in finding that an IGCC plant is not similar to a pulverized coal-fired power plant. As previously stated by the Board, "[i]n order to obtain review of a permit issuer's decision not to conduct a broader BACT analysis that would include redefinition of the source, a petitioner must show a good reason in the circumstances of the case for curtailing the permit issuer's discretion or that the permit issuer abused this discretion." *In re Kendall New Century Development*, 11 E.A.D. 40, 52 n.14 (EAB 2003) (citing *Hawaiian Commercial*, 4 E.A.D. at 99-100).

1. *The Physical and Business Differences Between a PC Boiler and an IGCC Plant is Evidence that EPA Region 9 Did Not Abuse its Discretion in Finding that an IGCC Plant is Not a Similar Source as Compared with a PC Boiler.*

The differences between a pulverized coal-fired power plant and an IGCC plant are stark. AR 120.10 at Section 2 (discussing the differences between the processes). In a pulverized coal-fired power plant, coal is crushed or pulverized and then burned (oxidized) in a large boiler. The temperature in the boiler is relatively constant because pulverized coal burns at a more consistent rate than lump coal and the boiler is operated under minimal pressure. Water is routed through tubes within the boiler to produce steam. The steam is then routed to a turbine to produce electricity. The entire process is straight forward and simple.

In contrast, producing electricity through an IGCC plant is a completely different and complex process that is distinguishable from coal combustion. AR 120 at 19. Gasification is a chemical process widely used to make a variety of products within the chemical and fuels industries. As EPA notes in the Response to Comments, the IGCC process is more allied with the operation of a refinery or chemical plant than with a pulverized coal-fired power plant. AR 120 at 19-20. An IGCC plant does not burn coal to make electricity but rather, it converts the coal into a synthetic gas, or "syngas," which is comprised of carbon monoxide and hydrogen (CO and H₂), CO₂, a residue material ("slag"), and hydrogen sulfide. AR 120.10 at 2-4, 3-35. Syngas is created through a chemical process as opposed to a thermal destruction process. The conversion of coal to syngas is energy intensive and requires the operation of equipment distinct from that used to operate a pulverized coal-fired power plant. The syngas is then sent to combustion turbines that burn the syngas to generate electricity, similar to how natural gas-fired turbines operate. Before the syngas can be used in the turbines, however, all of the impurities, such as sulfur compounds, metals, alkalytes, ash, and ammonia must be removed to prevent corrosion of the turbines. AR 120.10 at 5-4. The removal of these impurities is similar to the processes employed at a refinery. The process operates under extremely high pressure (400 to 1000 psia) or extremely low temperatures. AR 120.10 at A-16. Temperatures throughout the IGCC process are not consistent and could vary from below freezing to up to 2500 °F. *Id.* An IGCC plant requires the continuous use of uncontrolled flares and disposal of the slag. AR 120.10 at 2-11. Furthermore, an IGCC plant cannot operate on a continuous basis with just coal as the primary feedstock, but it must have alternative fuels on-site, such as natural gas to address failures of the gasifiers and petcoke to supplement low quality coal. Historically, the U.S. operating IGCC units have supplemented their coal firing with 55% - 100% petcoke, or natural

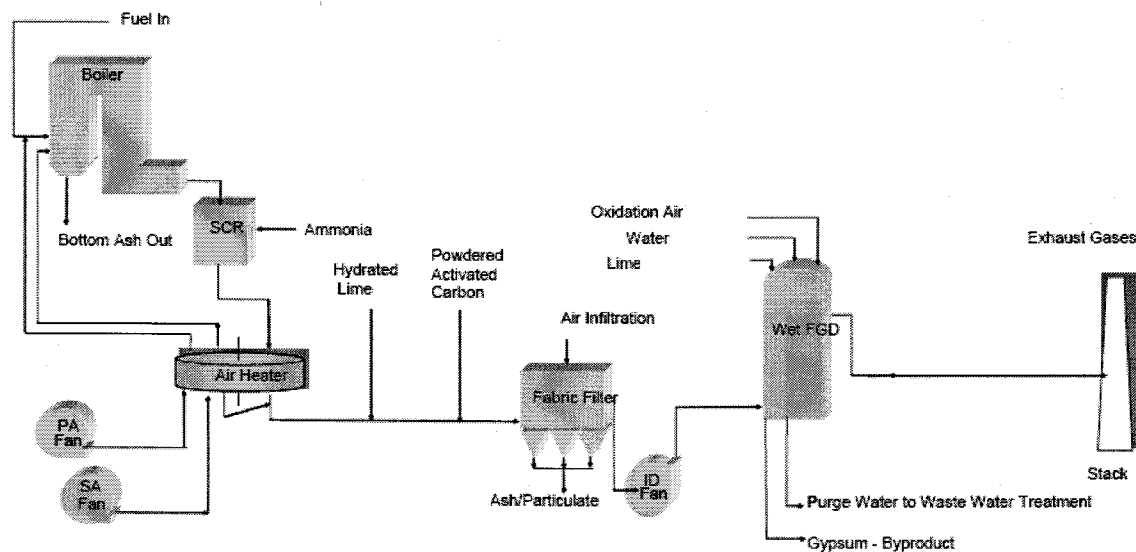
gas for the gas turbines. *See* AR 27 at 7-8, 13. Construction and operation of an IGCC plant therefore requires different equipment, operation and support facilities, and would require a complete redesign of the proposed Desert Rock Project from the bottom up. AR 120 at 19-20.

An IGCC plant is not only a different physical source in its design and operation, it is a different business venture altogether. There are many IGCC plants in the country such as Eastman Chemical (production of methanol, acetic acid, methyl acetate, etc. -Kingsport, TN) and Dakota Gasification Company (production of synthetic natural gas, chemicals and fertilizer - Beulah ND), and Coffeyville Resources (ammonia, fertilizer - Coffeyville, KS), but only two of them are currently used to make commercial electricity, the Wabash and Polk power plants. Moreover, the business of operating an IGCC plant is distinguishable because an IGCC plant produces by-products such as hydrogen, ammonia, methanol, and sulfur products that must be sold through separate service contracts in an area without a market or infrastructure for re-use or transportation of such IGCC byproducts. Unused concentrated chemical byproducts from the IGCC plant would have to be landfilled and treated as hazardous materials. None of these materials are by-products created through the operation of a pulverized coal-fired power plant. For example, the gasification process reactions at an IGCC plant are carried out in a chemically reducing environment, rather than an oxidative one; therefore, none of the feedstock sulfur is converted to sulfur dioxide. AR 120.10 at 2-6, 3-16. Instead, feedstock sulfur is converted primarily to hydrogen sulfide (a highly toxic chemical) and, to a minor degree, to carbonyl sulfide, compounds that are removed from the raw gas in gas treatment systems and converted to commercial grade sulfur or sulfuric acid. AR 120.10 at 2-6, 3-5 to 3-6. The hydrogen and carbon monoxide contained in the syngas product can be used as basic building blocks for a wide variety of chemicals, such as ammonia, methanol, acetic acid, or commercial grade hydrogen.

Whereas, a pulverized coal power plant using Desert Rock's design creates high quality marketable byproducts with an existing infrastructure and competitive local market demand for Pozzolan Class F flash for cement enhancement or replacement, synthetic gypsum for building materials, and bottom ash for aggregate and roads. Each ton of Desert Rock's flash and synthetic gypsum off-sets greenhouse gas emissions that would otherwise be created through other anthropogenic sources. Any byproducts not sold to market are permitted to be landfilled under existing regulations without being treated as a hazardous material.

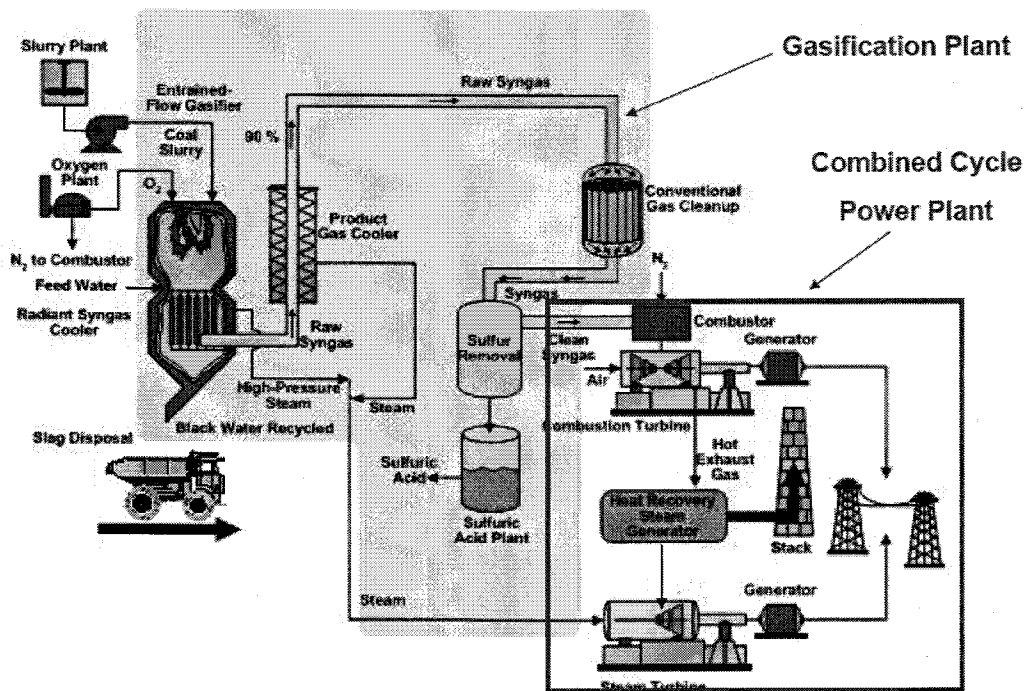
The two diagrams below demonstrate the process flow of pulverized coal-fired and IGCC plants and show that the two sources are completely different. Note that in the diagram for the pulverized coal boiler ("PC boiler"), the majority of components are pollution controls. The boiler island, where steam is produced, is only a fraction of the overall facility.

Diagram of PC Boiler Design



In contrast, IGCC plants, as detailed in the next diagram, look and operate nothing like a pulverized coal-fired power plant. IGCC plants have multiple processes that are not part of the design of pulverized coal boiler: vessels to handle different types of feeds, air separation units to ensure sufficient oxygen in the process, multiple gasifiers, gas cleanup and gas shift vessel, flare systems, and vessels to remove acid gases, including sulfur recovery units similar to those at refineries. See AR 120.10 at 2-3 to 2-17.

Diagram of IGCC Design



2. *The Design Changes Between an IGCC and a PC Boiler are Well Within the Parameters of Past Application of the Redesign Policy by the EAB.*

The Board and the U.S. Court of Appeals for the Seventh Circuit engaged in an extensive discussion of the necessity of the redesign policy in the *Prairie State* cases. *Prairie State*, slip op. at 26-44; *Sierra Club v. Prairie State Generating Co.*, 499 F.3d 653 (7th Cir. 2007) ("*Prairie State II*"). In *Prairie State*, the PSD permit applicant proposed a "mine-mouth" coal-fired

electrical generating plant designed to burn high-sulfur coal that was brought from the mine to the plant by conveyor belt. *Id.* at 21. Several interested parties, including the Petitioners, appealed Illinois EPA's decision to grant the PSD permit, arguing that Illinois EPA had to decide whether hauling low-sulfur coal from afar would be the best available means of controlling air pollution from the plant. *Id.* at 19.

The Illinois EPA (acting under a delegation of authority from the EPA) determined that consideration of low-sulfur coal, because it necessarily involved a fuel source other than the co-located mine, would require Prairie State to redefine the fundamental purpose or basic design of its proposed facility by obviating any need for the adjacent coal mine and modifying the plant's facilities for receiving coal. *Id.* at 21. Therefore, Illinois EPA determined that low-sulfur coal could appropriately be rejected from further BACT analysis at step 1 of the top-down BACT review method. *Id.* On appeal, the EAB granted the PSD permit because receiving coal from a distant mine would require Prairie State to reconfigure the plant as one that would not be co-located with a mine, and such a reconfiguration would constitute a redesign. *Id.* at 36-37.

In considering the *Prairie State* petitioners' appeal of the Board's decision, the Seventh Circuit observed that drawing a line "where control technology ends and a redesign of the 'proposed facility' begins" "is not obvious." *Prairie State II*, 499 F.3d at 655. The Court held that without some limit on what constitutes "control technology," the range of possible BACT technologies available would be endless and, indeed, would collide with the "alternatives" provision of the statute. *Id.* Any contrary conclusion would permit, for instance, the agency to order the applicant to redesign its plant as a nuclear plant rather than a coal-fired one.

The Seventh Circuit then described the change the *Prairie State* that petitioners sought as "fundamental" enough to constitute an equipment redesign:

Now it is true that a difference between this case and our nuclear hypothetical is that a plant designed to burn coal cannot run on nuclear fuel without being redesigned from the ground up, whereas Prairie State's proposed plant could burn coal transported to the plant from afar. But to convert the design from that of a mine-mouth plant to one that burned coal obtained from a distance would require that the plant undergo significant modifications—concretely, the half-mile-long conveyor belt, and its interface with the mine and the plant, would be superfluous and instead there would have to be a rail spur and facilities for unloading coal from rail cars and feeding it into the plant.

Id. (emphasis added).

Here, NGO Petitioners' formulation of the redesign policy misstates the holding of *Prairie State* and disregards the fact that the redesign policy focuses not only on the source's "basic design " but also on how that design relates to its "basic business purpose." As the Board stated in *Prairie State*:

[T]he permit issuer appropriately looks to how the applicant, in proposing the facility, defines the goals, objectives, purposes, or basic design for the proposed facility. Thus, the permit issuer must be mindful that BACT, in most cases, should not be applied to regulate the applicant's objective or purpose for the proposed facility, and therefore, the permit issuer must discern which design elements are inherent to that purpose, articulated for reasons independent of air quality permitting, and which design elements may be changed to achieve pollutant emissions reductions without disrupting the applicant's basic business purpose for the proposed facility.

Prairie State, slip op. at 30. Put another way, the EPA may exclude from the BACT determination any production process that would require "any fundamental change" to Desert Rock's "product, purpose or equipment." *In re Hibbing Taconite Co.*, 2 E.A.D. 838, 843 n.12 (Adm'r 1989) (emphasis added).

Held up to these standards, it is clear that considering IGCC as a control technology under BACT would require Desert Rock Energy to alter the fundamental design of the project – a result contrary to the EAB and the Seventh Circuit's reasoning. In fact, the changes that petitioners proposed to the permit in *Prairie State* are minor compared to the changes that would

be required if Desert Rock Energy were to build an IGCC plant instead of a pulverized coal-fired power plant. To modify the Desert Rock Energy's Project from a proposed pulverized coal-fired power plant to an IGCC plant would require a complete redesign of the facility from the ground up. As illustrated above, this redesign would amount to designing a completely different process similar to those processes used in a refinery or chemical plant and would resemble nothing like that of the permitted source. Simply to name a few: a 100-mile rail spur and a ten-mile pipeline would need to be built to bring auxiliary fuel to the site, the physical structure and process units would need to be completely designed from the ground up, combustion turbines would need to be constructed, and waste handling operations would resemble nothing like the current design involving completely different waste products, such as acids and hydrogen. Given the facts and design changes at issue in *Prairie State*, Region 9's find that IGCC at Desert Rock is not a similar source to a PC boiler is not even a close call.

3. *EPA's Decision to Classify IGCC as a Different Source under the "Redesign Policy" is Clearly Explained and Supported by the Administrative Record.*

The EPA engaged in a thoughtful analysis of the impact of IGCC on the basic purpose and design of the Desert Rock Project presented in Desert Rock Energy's PSD application. After considering the IGCC analysis made by Desert Rock Energy and by commenters during the public comment period and a variety of reports, articles and letters now contained in the record,³³ the EPA found that:

³³ See "Environmental Footprints and Costs of Coal-Based Integrated Gasification Combined Cycle and Pulverized Coal Technologies" (July 2006) (AR 120.10), Desert Rock Energy's "Integrated Gasification Combined Cycle Compared to the Desert Rock Energy Project" report (AR 27), "Desert Rock Energy's Desert Rock Energy Project Integrated Gasification Circulating Fluidized Bed Combustion" report (Sept. 2005) (AR 34), Ambient Air Quality Impact Report (July 26, 2006) (AR 46), an article by Douglas J. Smith entitled "IGCC Technology Continues to Develop" (AR 46.14).

With respect to the [Desert Rock P]roject proposed by [Desert Rock Energy], our assessment is that the application of the IGCC process would fundamentally change the nature of the proposed major source as it would change the basic design of the equipment Desert Rock Energy proposed to install. [Desert Rock Energy] has applied to construct a facility that fires pulverized coal in a boiler to generate steam to drive an electric turbine. An IGCC facility uses a chemical process to first convert coal into a synthetic gas and to fire that gas in a combined turbine [citing AR 120.10]. The combined cycle generation power block of an IGCC process employs the same turbine and heat recovery technology that is used to generate electricity with natural gas at other electric generation facilities. Thus, the combined cycle generation power block portion of the IGCC process is very similar to existing power generation designs that EPA has agreed would redefine the basic design of the source when an applicant proposed to construct a pulverized coal-fired boiler. *In re SEI Birchwood, Inc.*, 5 E.A.D. 25 (1994); *In the Matter of Old Dominion Electric Cooperative Clover, Virginia*, 3 E.A.D. 779 (Adm'r 1992). Furthermore, the core process of gasification at an IGCC facility is fundamentally different than operating a boiler. Coal gasification is more akin to technology employed in the refinery and chemical manufacturing industries than technologies generally in use in power generation (i.e., a controlled chemical reaction versus a true combustion process). Use of coal gasification technology would necessitate different types of expertise to operate the [Desert Rock Project] to produce the desired product (electricity). Thus, these fundamental differences in equipment design are sufficient to conclude that the IGCC process would redefine the proposed source.

AR 120 at 19-20.

Given the expansive administrative record, EPA's thorough response explaining its decision, and the clearly evident technical and operational differences between the two types of sources, EPA's finding that an IGCC plant should not be considered a control technology for a pulverized coal-fired power plant was not a result of clear error or an abuse of discretion, nor have NGO Petitioners shown that EPA's discretion should have been curtailed for any reason. Accordingly, EPA's exclusion of IGCC as BACT should be upheld, and review should be denied on this issue.

C. EPA's Application of its "Redesign Policy" to Exclude IGCC from its BACT Determination Does Not Write Out the Phrases "Production Process" and "Innovative Fuel Combustion Techniques" from the Statutory Definition of BACT Nor Does it Stall the Technology Forcing Aspects of the BACT Process.

NGO Petitioners insinuate that by excluding IGCC from the BACT determination, EPA has ignored key components of the statutory definition of BACT, or at least the technology forcing aspects of the BACT process. NGO Petitioners' Supp. Br. at 77-87. In making this argument, NGO Petitioners ignore the fact that there are various "production processes" and "innovative fuel combustion techniques" applicable to pulverized coal-fired power plants. Specifically, there are many types of PC boiler designs that impact emissions and that are properly considered in a BACT analysis for PC boilers. Pulverized coal boilers can vary in their firing type such as cyclone-fired or tangentially-fired; or their air movement utilizing forced draft or induced draft; or their steam pressure and temperature state of being subcritical, supercritical, or ultra-supercritical boilers. Given these options, Desert Rock Energy has proposed to build a state-of-the-art ultra-supercritical PC boiler and at the specific request of the EPA, Desert Rock Energy has to included as overfire air for the control of NO_x, which is an innovative technology that pushes the design of PC boilers in the direction envisioned by the technology forcing aspects of the CAA. The proposed boilers will be one of the first ultra-supercritical PC boilers in the United States.

With regard to Desert Rock Project's PC boilers, the term "ultra-supercritical" refers to the steam power cycle. This terminology is used to differentiate the pressure and temperature conditions of the steam as compared to other types of coal plants with lower pressure and temperature conditions. The ultra-supercritical cycle is currently the most advanced steam

power cycle that engineers have been able to develop that is both economical and reliable. Environmentally, it is the cleanest commercially viable coal technology currently available.

The advantage of using ultra-supercritical technology over other types of coal technology is that less energy is needed to convert the water used in the power generating process to steam. When compared to older technologies, ultra-supercritical power plants operate at increased efficiency and use less fuel, which in turn leads to lower emissions. For example, the average efficiency of an older coal plant is around 36-38%, while a newer super-critical plant can achieve an overall efficiency in the range of 43-45%, a twenty percent improvement. Each two percent increase in efficiency corresponds to approximately a 5% decrease in CO₂ production. EPA has recognized this advancement in PC boiler design in the administrative record. AR 120 at 70.

The above options, including Desert Rock Energy's chosen utilization of ultra-supercritical PC boilers, are the types of "production processes" and "innovative fuel combustion techniques" that should be evaluated in a BACT determination for a PC boiler. There is simply no evidence that, as NGO Petitioners argue, exclusion of IGCC from the BACT analysis somehow stalls the development of better control technologies. PC boiler process and combustion technologies continue to improve, and the Desert Rock Project demonstrates that the BACT process can and will force the technological progress needed and reduce emissions.

D. Petitioners' Arguments Are Not Material to the Outcome of the BACT Determination of the Proposed Boilers at Desert Rock Because IGCC is Not a Feasible Business Venture at the Desert Rock Project and Would Be Worse for the Environment.

Petitioners claim that EPA Region 9 categorically refused to consider IGCC in the Desert Rock permitting process. NGO Petitioner's Supp. Br. at 72-75. This assertion is not accurate.

See AR 27; 34; 46 at 35; 46.6; 46.8; 46.9 at 29; 46.10 at 3-4; 46.14.³⁴ As evident in the administrative record, EPA Region 9 specifically requested detailed "information from Desert Rock Energy regarding whether or not IGCC would be technically feasible using Navajo Nation coal from the BHP mine." AR 46 at 35.

STEAG AG, the original parent company of Desert Rock Energy, is the first companies in the world to construct and operate an IGCC power plant at the STEAG/Kellermann 163 MW plant in Lünen, Germany in 1972. Desert Rock Energy is very familiar with IGCC technology and actually considered IGCC early in the planning and design process of this business venture. After examining IGCC in the content of the primary purpose of the business venture – to develop power generation using the coal reserves on the Navajo lands as requested by the Navajo Nation³⁵ - Sithe determined that IGCC was not a feasible business option at the Desert Rock site

³⁴ The administrative record includes the following documents discussing and considering IGCC: Environmental Footprints and Costs of Coal-Based Integrated Gasification Combined Cycle and Pulverized Coal Technologies, EPA Report 430/R-06/006 (July 2006) (AR 46.6, AR 120.10), Sithe's Integrated Gasification Combined Cycle Compared to the Desert Rock Energy Project report (AR 27), Sithe's Desert Rock Energy Project Integrated Gasification Circulating Fluidized Bed Combustion report (Sept. 2005) (AR 34), Ambient Air Quality Impact Report (July 26, 2006) (AR 46), an article by Douglas J. Smith entitled "IGCC Technology Continues to Develop" (AR 46.14), a Draft Response to Comments from Federal Agencies, Newmont Energy NV (AR 46.10), a PSD Permit to Construct, Pre-Draft Statement of Basis, Deseret Power Electric Cooperative Bonanza Power Plant (May 19, 2006) (AR 46.9), and a BACT evaluation for Southern Illinois Clean Energy Center IGCC and Substitute Natural Gas Methanation Plant (Oct. 2004) (AR 46.8).

³⁵ In light of the depressed economic conditions on the Navajo reservation – more than 50% of working-age Navajo are unemployed, and Navajo per capita income is roughly \$7,412 – and the Navajo Nation's vast natural resources, the Navajo Nation has sought to develop energy resources on Navajo land for the benefit the Navajo people and the promotion of economic development in the Navajo Nation. See AR 29; Steven C. Begay, Testimony Before the Senate Committee on Indian Affairs, Oversight Hearing on Indian Energy Development – Regaining Self-Determination Over Reservation Resources, May 1, 2008, at 3. The Navajo Nation has pursued construction of the Desert Rock Project as one means of stimulating the Navajo economy through the use of Navajo coal and Navajo human resources. Best estimates suggest

given the quality of Navajo coal and the altitude of the site. *See* AR 27 at 3 ("At an elevation of 5,415 ft. an IGCC plant would generate significantly lower power output and significantly higher auxiliary load compared to a [super critical pulverized coal] plant"). Two documents in the administrative record detail Sithe Global's technical and financial responses to Petitioners' claims about IGCC at the Desert Rock, and EPA considered these responses in its Review of Desert Rock Energy's PSD application. AR 27; AR 34.³⁶ Sithe Global's analysis, as set out in these documents, concluded that no existing or anticipated IGCC design can be applied to Desert Rock given the quality of the coal to be used.³⁷ Any application of IGCC at Desert Rock would be unique, without operating history, and subsequently extremely expensive and therefore unfinanceable. Furthermore, as EPA recognized in its Response to Comments, it is well known and documented that elevation plays a deleterious effect on air moving equipment, such as compressors and turbines, due to the thinning of air and reduced atmospheric pressure when

that Navajo revenues from the Desert Rock Project will be up to \$50 million per year, half of which will come from the use of Navajo coal.

³⁶ NGO Petitioners allude to some "confidential" analysis relating to IGCC. NGO Petitioners' Supp. Br. at 102 n.72 (citing AR 113 at 90). Desert Rock Energy and Sithe Global are unaware of any such document or analysis. The document referenced in the email raised by NGO Petitioners is in the administrative record at AR 27. Petitioners are simply trying to conjure up some conspiracy theory where none exists.

³⁷ All of Petitioners' analysis relating to IGCC is based on eastern coal types, particularly bituminous Illinois #6 or Pittsburg #8 coal, rather than addressing the characteristics particular to Navajo coal. Bituminous Illinois #6 and Pittsburg #8 coal are hard coals with low ash content (9%) and a higher heating value ("HHV") of 12,000 Btu/lb or higher. In contrast, Navajo coal is a lower ranked, soft sub-bituminous type coal, with higher ash content (21% ash) and a heating value of 8,910 Btu/lb. In addition, Navajo coal has a high ash initial fusion temperature greater than 2600°F, as compared to the eastern coals that have a fusion temperature of 2300°F. Fusion temperature is the temperature at which the ash becomes soft to fluid, a necessity for gasification and formation of slag. Navajo coal also has a higher moisture content. The combination of these factors means that more heat and energy would be required to produce the same amount of megawatts from an IGCC power plant than from the proposed PC boilers. A Navajo Coal IGCC heat rate would be 14% higher than a Pittsburg #8 coal heat rate and 8% higher than an Illinois #6 coal heat rate. *See* AR 46.6.

compared to sea level operation. See AR 120 at 224-25; Air Liquide, Gasification at Elevation ASU Design Impact - Presentation at Workshop on Gasification Technologies, Denver, CO (Mar. 14, 2007) ("Air Liquide Report"). Most electric motors are designed to operate at altitudes up to 3,300 feet (at constant temperature). Air Liquide Report at 12. Above 3,300 feet, most motors are derated due to the reduced heat dissipation of the thin air. *Id.* Between 5,500-6,000 feet, the reduced rating of electric motors is approximately 6% of power. *Id.* IGCC equipment that would be impacted by atmospheric pressure includes, but is not limited to, distillation columns, heat exchangers, absorbers, and piping. *Id.* at 13. To mitigate the impact of the pressure drop, the size (or cross sectional area) of the equipment affected would need to be increased, *id.*, resulting in an extremely large and expensive facility as compared to other IGCC plants operating at lower altitudes. Additionally, turbine performance would be adversely impacted by the high elevation at Desert Rock. AR 27 at 8-9. Because a turbine is a constant speed machine, the volume of air is proportional to the air's density. AR 27 at 9. The thinner and less dense air at higher elevations results in a lower air flow through the turbine, thereby resulting in less lower power being output. Operation at a higher elevation will also reduce the capacity of the gas turbines at the Desert Rock Project by approximately 20%, which corresponds with a need to increase the megawatt generation and the plant size, by approximately 19%, to account for compounding auxiliary load and turbine derating.

From an environmental prospective, Desert Rock's ultra-supercritical pulverized coal plant sets new standards in permitted emission limits and expectations of power plant performance for the United States and the global coal fleet. The efficiency of the ultra-supercritical design is greater than the IGCC plant; therefore, the ultra-supercritical plant consumes less coal, processes less pollutants, and emits less CO₂ and other greenhouse gas

emissions. AR 27 at 5, 11. Page 5 of Sithe Global's "Integrated Gasification Combined Cycle Compared to the Desert Rock Energy Facility Project" report contains a chart comparing the permitted levels from the two operating and other permitted IGCC plants in the U.S. to the permitted levels of the Desert Rock boilers. AR 27 at 5. The permitted emission rates at Desert Rock are below those of permitted IGCC plants. *Id.* In addition, the water consumption rates associated with using IGCC at the Desert Rock site would range between 21,000 acre-ft/yr to 39,000 acre-ft/yr. In contrast the permitted water consumption rate at the Desert Rock Project's ultra-supercritical plant is 4,500 acre-ft/yr.

The conclusion to be drawn from this discussion is that NGO Petitioners' comments are not material to the validity of the Desert Rock PSD permit because utilization of IGCC is not a possible option at the Desert Rock Project. Vendors have never designed an operational IGCC plant that can overcome the coal characteristics and altitude issues applicable to the Desert Rock Project. Technical studies show that such operation is not even considered for these conditions. Furthermore, the water intake requirements and the end-of-day emission rates from an IGCC plant would be worse for the environment than the permitted ultra-supercritical PC boilers at Desert Rock. Given the technical expertise of EPA Region 9 and the supporting administrative record showing that EPA Region 9 considered IGCC, the Board should deny review of EPA Region 9's determination that IGCC is not an available control technology because of its many disadvantages at the Desert Rock site and its ultimate finding that IGCC should not be considered in the BACT analysis for the Desert Rock Project.

III. PETITIONERS ARE USING COLLATERAL IMPACTS IN A DISINGENUOUS MANNER TO RE-INTRODUCE IGCC INTO THE BACT ANALYSIS.

The fourth step of a BACT top-down analysis instructs "the permitting authority, on a case by case basis, [to take] into account energy, environmental, and economic impacts and other

costs" when determining whether an emission limitation is achievable. CAA § 169(3), 42 U.S.C. § 7479(3). This requirement is known as the collateral impacts clause. *In re Hillman Power Co., L.L.C.*, 10 E.A.D. 673, 683 (EAB 2002). The Board has stated that the collateral impacts clause "temper[s] the stringency of the technology impacts whenever one or more of the specified 'collateral' impacts – energy, environmental, or economic – renders use of the most effective technology [for controlling a particular PSD-regulated pollutant] inappropriate." *Id.* (citing *In re Columbia Gulf Transmission Co.*, 2 E.A.D. 824, 826 (Adm'r 1989)); *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 116-17 (EAB 1997); *In re World Color Press, Inc.*, 3 E.A.D. 474, 479 (Adm'r 1990). The collateral impacts clause creates an exception to the general rule that unregulated pollutants are not part of the BACT analysis, which "applies whenever choosing one control technology over another for a regulated pollutant has the incidental effect of increasing or decreasing emissions of unregulated pollutants." *In re Genesee Power Station*, 4 E.A.D. 832, 848 (EAB 1993). Petitioners are attempting to distort the meaning and application of the collateral impacts clause and its excepted consideration of non-regulated pollutants in an attempt to force EPA to redesign the proposed Desert Rock facility into an IGCC facility.

The NGO Petitioners have attempted to reframe several of their unsuccessful arguments made elsewhere in their Supplemental Brief as a collateral impacts analysis argument. For example, as this brief demonstrates throughout, Petitioners failed to show that EPA erred in its BACT analysis by not selecting another technology to control Desert Rock's CO₂ emissions or to reduce the project's impacts on water resources, vegetation and soils, humans, plants, or animal life. Now, in their back door attempt to get IGCC considered as BACT, this time pursuant to the collateral impacts clause, Petitioners erroneously founded their collateral impacts discussion upon the presumption that IGCC is BACT technology. As explained in Section II, *supra*, IGCC

is not available BACT technology for Desert Rock because the use of IGCC is not a possible option. Furthermore, Petitioners have failed to present any evidence either in public comments to EPA or in their briefs that use of IGCC would in fact reduce CO₂ emissions, so Petitioners have not even established that the remedy they seek would address the CO₂ collateral impact they are alleging. *See* NGO Petitioners' Supp. Br. at 113 (citing Ex. 28 to NGO Petitioners' Supp. Br. at ¶¶ 56-59, which merely cites examples of studies that indicate that IGCC may be economically more attractive if carbon sequestration ever becomes commercially available and does not show conclusively that emissions are always lower from IGCC facilities). The permitted facility will actually have lower CO₂ emissions than an IGCC plant because the permitted facility would use less coal to make the same amount of electricity than that of an IGCC plant. Furthermore, the collateral impacts clause was meant to address local or source-specific concerns, yet the NGO Petitioners do not discuss any unique local considerations that would require the selection of a different BACT technology. Lastly, with respect to their argument that the project collaterally impacts endangered species, Petitioners fail to show that a separate collateral impacts analysis beyond the endangered species consultation being undertaken is required for issuance of a PSD permit. For these reasons, NGO Petitioners have not met their burden of proof that collateral economic, environmental and energy impacts compel the use of IGCC technology over the chosen ultra-supercritical PC boiler technology proposed by Desert Rock Energy, and thus, the Board should deny review of NGO Petitioners' challenges to the Desert Rock PSD permit related to the collateral impacts of the Desert Rock Project.

A. Petitioners Have Failed to Show that Evaluation of Collateral Impacts Would Have Led to the Selection of a Different BACT.

In arguing that EPA should have evaluated the collateral impacts of CO₂ emissions, Petitioners advance the incorrect position that selecting IGCC technology would produce lower

CO₂ emissions at the Desert Rock Project. NGO Petitioners' Supp. Br. at 112-13, 122-24; AR 66 at 12 n.30, 36. The Board has previously stated that when a Regional Office is evaluating a PSD permit application, it cannot redefine the design of the source by requiring the applicant to build a project different from the one proposed. *Prairie State*, slip op. at 20; see Section II, *supra* (discussing the reasons for rejecting IGCC technology as not available BACT technology for this project). However, NGO Petitioners' argument in favor of IGCC not only tries inappropriately to redefine the source through the collateral impacts clause, but it suffers from two further errors, in that the NGO Petitioner provide no support for any other control technology and IGCC would, in fact, create more CO₂ emissions than the Desert Rock Project as proposed.

The EAB should not entertain Petitioners' disingenuous and thinly veiled attempt to redefine the source by presenting this same BACT argument as a separate challenge to the collateral impacts of the source. Petitioners are trying to use the collateral impact clause to compel a complete separate alternative to the project, which is not the intended use of this clause. As the Board has recently noted, "section 165(a)(2) does not impose upon the Region a duty to conduct an analysis of 'alternatives' that were not identified by an interested person during public comment." *Deseret*, slip op. at 23.

Furthermore, by failing to mention any specific control technology other than IGCC in their comment letter with respect to assessing the collateral impacts of the project, Petitioners have waived any right to discuss the collateral impacts, if any, of other control technologies that might have been used at the Desert Rock facility.³⁸ The EAB has also provided clear precedent

³⁸ In fact, the use of the collateral impact analysis clause has minimal impact on the Desert Rock BACT determination because EPA Region 9 imposed the "top" BACT as identified in the analysis, which is the most stringent alternative and found no adverse environmental,

stating that a petition must present all of the issues in dispute with specificity. See *In re Arecibo & Aguadilla Regional Wastewater Treatment Plants*, 12 E.A.D. 97, 117 (EAB 2005)

("Comments submitted during the comment period must be sufficiently specific. In evaluating whether to review an issue on appeal, this Board frequently has emphasized that the issue to be reviewed must have been specifically raised during the comment period.") (citing *In re New England Plating*, 9 E.A.D. 726, 732 (EAB 2001)(emphasis in original); *In re Maui Elec. Co.*, 8 E.A.D. 1, 9 (EAB 1998)); *In re Broward County*, 6 E.A.D. 705, 709 (EAB 1993) (citing *In re Sequoyah Fuels Corp.*, NPDES Appeal No. 91-12, slip op. at 4 (EAB Aug. 31, 1992)). By failing to present any arguments relating to control technologies other than IGCC in their public comment letter, Petitioners have failed to meet the burden of showing "a compelling reason to believe [that there was] an erroneous permit determination – in other words, [that EPA Region 9's assessment] materially affected the quality of the permit determination" or that there was "clear error" in the BACT analysis that altered the permitting decision. *Prairie State*, slip op. at 58-59 (citing *In re Mecklenburg Cogeneration L.P.*, 3 E.A.D. 492, 494 n.3 (Adm'r 1990)). Accordingly, NGO Petitioners have not established any basis under which review of the collateral impacts issue is warranted, and the Board should therefore deny review of the Desert Rock PSD permit on these grounds.

B. CO₂ Emissions Are Not a Local or Source-Specific Issue that Must Be Analyzed Under the Collateral Impacts Analysis.

Even if the Board were to grant review of the collateral impacts issue, NGO Petitioners have not successfully shown in their petition that Congress intended to require the analysis of CO₂ as part of the collateral impacts analysis, and they have not even established that the

energy, or economic impacts associated with the controls. See Section V for a full discussion of the BACT analysis.

remedy they sought, IGCC, would have lower CO₂ emissions than the permitted source. The principal architect of the 1977 Clean Air Act Amendments, Senator Edmund S. Muskie, stated that the intent of the collateral impacts clause was to allow the reconsideration of BACT while giving thought to the local conditions affecting a particular application. *Columbia Gulf*, 2 E.A.D. at 827 (quoting Senate Debate on S. 252 (June 8, 1977), reprinted in 3 SENATE COMMITTEE ON ENVIRONMENT & PUBLIC WORKS, A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1977 at 729 (Comm. Print Aug. 1978)). Specifically, Senator Muskie explained:

One objection which has been raised to requiring the use of the best available pollution control technology is that a technology demonstrated to be applicable in one area of the country is not applicable at a new facility in another area because of difference [sic] in feedstock material, plant configuration or other reasons. For this and other reasons, the committee voted to permit emission limits based on best available technology on a case-by-case judgment at the State level.

Id.

Consistent with this legislative intent, the Board has clarified that "the primary purpose of the collateral impacts clause . . . is to allow use of a less effective control technology when source-specific energy, environmental or economic impacts or other costs constrain a source from using a more effective technology." *World Color Press*, 3 E.A.D. at 479 (emphasis added). In order to serve this purpose, "the collateral impacts clause operates primarily as a safety valve whenever unusual circumstances specific to the facility make it appropriate to use less than the most effective technology." *Id.* at 478-79 (emphasis added) (noting also that "the collateral impacts clause focuses on specific local impacts which constrain a particular source from using the most effective control technology"). NGO Petitioners have entirely ignored the intentionally limited application of the collateral impacts clause to source specific, localized impacts by failing to present any evidence indicating that Desert Rock itself presents any specific or unusual

circumstances that require special consideration of CO₂ emissions when other local facilities have not been required to conduct a similar CO₂ analysis as part of their collateral impacts review.

As fully discussed and explained in the Desert Rock administrative record, a proper collateral impacts analysis should focus on source-specific, local, or unusual circumstances. AR 120 at 29-33. For example, a proper collateral impacts assessment might consider circumstances that create "[a]n exceptional demand on water resources" such that this concern would "constrain a source from using that technology in favor of a less stringent, less water-intensive technology." *World Color Press*, 3 E.A.D. at 479 n.15 (citing *Columbia Gulf*, 2 E.A.D. 824).³⁹ Alternatively, an applicant might conduct a collateral impacts analysis by considering "the effects that different flue gas temperatures, acid gases inlet concentrations, control technology placement in relation to particulate control devices, and other matters would have on the formation and control of dioxin and other air toxics." *Hillman Power Co.*, 10 E.A.D. at 687. In contrast, by alleging in their Petition for Review and Supplemental Brief that an assessment of CO₂ emissions is required under the collateral impacts clause, NGO Petitioners are not calling for an analysis of equivalent scope to those in *World Color Press* or *Hillman Power Co.* Rather, Petitioners are calling for a complete redesign of the Desert Rock Project not because of site specific or localized concerns, but in response to a global issue, and demanding use of a technology that not even NGO Petitioners can prove would address their concerns. Global climate change, as all Petitioners acknowledge, is global in nature and not unique to the Desert Rock Project. *See, e.g.*, NGO

³⁹ As a preliminary matter, NGO Petitioners' allegations regarding the need to select IGCC technology to reduce water consumption or solid waste production are not dispositive where the technology they urge would require a complete redesign of the source. *Prairie State*, slip op. at 20; *see* Section II, *supra*.

Petitioners' Supp. Br. at 117-18. Thus, NGO Petitioners' demand that CO₂ analysis o be conducted pursuant to the collateral impacts clause, and that IGCC be used to minimize the impacts of CO₂ is completely inconsistent with the purpose of the collateral impacts analysis. *See Columbia Gulf*, 2 E.A.D. at 827 ("The collateral impacts clause operates primarily as a safety valve whenever unusual circumstances specific to the facility make it appropriate to use less than the most effective technology.").

Because of the global nature of the climate change, NGO Petitioners have only been able to address generally, and have failed to offer "information that suggests that unusual circumstances or local conditions predispose [the Desert Rock] facility" to have the problems that NGO Petitioners objected to in their petition more so than other plants, for which CO₂ analysis has not been required. *Kawaihae*, 7 E.A.D. at 116-17. Rather, NGO Petitioners are using this project-specific appeal as a general soap box to object to all electric power production facilities and coal fired power plants because of their carbon emissions. The EAB appeals process is not an appropriate forum for their complaints, nor can their general grievances maintain their collateral impacts argument in this case. *Id.* at 117 (noting that the petitioners' claim must be rejected for presenting a hypothetical scenario rather than an actual facility where the complained problem has occurred and not providing any information suggesting that the facility in question has unusual circumstances or local conditions that predispose the site to have the complained of problem); *see also In re Terra Energy Ltd.*, 4 E.A.D. 159, 161 (EAB 1992) (noting that the petition was insufficient because it merely expressed generalized concerns about the impact on the environment and failed to identify specific permit conditions that gave rise to the petitioner's concerns).

In arguing that CO₂ emissions should be considered during the collateral impacts analysis, Petitioners point to a certain draft of the NSR Manual, which at that time stated that "greenhouse gases may be considered." NGO Petitioners' Supp. Br. at 115 (attaching Exhibit 13, an outdated version of the NSR Manual at B.49) (emphasis added). The weight accorded to the superseded version of the NSR Manual cited by NGO Petitioners is diminished by the fact that the guiding draft version currently available to the public does not include such guidance. *See* EPA, New Source Review (NSR) Archives, Technical Information, <http://www.epa.gov/ttn/nsr/gen/wkshpman.pdf>. Moreover, the word "may" clearly leaves the issue to the discretion of the permitting authority. Nothing prevents a permitting authority from considering greenhouse gases, but a permit cannot be remanded on the basis that the permitting authority declines to make such a discretionary consideration the now-superseded Draft NSR Manual. Furthermore, EPA has considered, fully responded to and rejected this argument which was first raised by NGO Petitioners during the notice and comment period. *See* AR 120 at 29-33. Therefore, the Board should defer to EPA Region 9's discretion on this issue, as allowed for in EPA guidance and, as a result find no clear error or abuse of discretion upon which review of this issue could be granted.

More important to the Board than a superseded draft version is the current guidance on collateral impacts analysis. The current version of the NSR Manual is consistent with EPA Region 9's Response to Comments on this issue in that it emphasizes that the collateral impact analysis "should be made based on a consideration of site-specific circumstances" and "need only address those control alternatives with any significant or unusual environmental impacts that have the potential to affect the selection or elimination of a control alternative." NSR Manual at B.47. "Generally, these types of environmental concerns become important when

sensitive site-specific receptors exist or when the incremental emissions reduction potential of the top control is only marginally greater than the next most effective option." *Id.* "[W]here the applicant can show that unusual circumstances at the proposed facility create greater problems than experienced elsewhere, this may provide a basis for the elimination of that control alternative as BACT." *Id.* (emphasis added). Because their collateral impacts analysis calls for the assessment of a global, rather than source-specific local issue, it does not meet the standard for invoking the collateral impacts clause, and thus, the NGO Petitioners' argument must fail. *See Columbia Gulf*, 2 E.A.D. at 827.

C. Petitioners Fail to Show that the Costs of Regulating CO₂ Emissions Are Currently Within the Range of Costs Being Borne By Similar Sources.

Another allegation of NGO Petitioners is that the costs of CO₂ emissions should be included in the collateral impacts analysis. As with their other collateral impacts arguments, NGO Petitioners are unable to show that the cost of regulating Desert Rock's CO₂ emissions "is within the range of costs being borne by similar sources also charged with controlling that pollutant." *Inter-Power*, 5 E.A.D. at 135. Thus, again, Petitioners are trying to distort the collateral impact clause to reach an improper end. The intent of the collateral impacts analysis is to allow for reconsideration of the most stringent BACT in light of collateral effects that favor less stringent technology, while giving thought to local and unique conditions that may shape the determination. *Columbia Gulf*, 2 E.A.D. at 826-27. Petitioners are somehow twisting the collateral impact clause to require permitting authorities to consider the cost of future regulations; something that has never been done in PSD permitting and is not remotely present in any PSD permitting guidance. Costs associated with possible future CO₂ regulation (or any other type of air pollution regulations) will not be unique to Desert Rock (nor to any particular source) and will be absorbed by the entire economy of the United States. There is nothing

unique about the cost of CO₂ regulation to the Desert Rock Project that informs the source-specific Desert Rock BACT analysis or suggests that reconsideration of the chosen BACT would address the collateral impacts identified by NGO Petitioners.

NGO Petitioners have failed to even name a "similar source" that is currently subject to CO₂ emissions. Petitioners only mention IGCC technology, which is not a "similar source" as discussed above, and in no way demonstrate that CO₂ emissions from IGCC technology would be lower than that of the Desert Rock facility. As noted above, CO₂ emissions would likely be greater from an IGCC plant than from the permitted facility. Although NGO Petitioners have provided a range of cost estimates for future CO₂ emissions control, this cost alone, which is not specific to the type of facility regulated, is insufficient to support review of the Desert Rock PSD Permit because NGO Petitioners have not established (and cannot now establish, because they have urged only IGCC technology in their public comments) that "similar . . . facilities are being required to bear this additional expense to meet BACT." *Prairie State*, slip op. at 149; AR 66 at 12 n.31. Requiring Desert Rock Energy to incur such costs while other similar sources are not subject to similar regulation is inappropriate. *Inter-Power*, 5 E.A.D. at 149-50 (concluding that requiring a source to use lower sulfur coal to obtain lower emission rates would require that source "to bear costs beyond the costs being borne by similar facilities" and therefore, the Regional Office's decision to reject that alternative based "on cost-effectiveness grounds was not clearly erroneous." (emphasis in original)). The Desert Rock Project will have the lowest CO₂ emissions rate of any coal plant in the western United States. Thus, the Desert Rock Project will have a low, if not the lowest, compliance costs in any future CO₂ program; such compliance may be in the same order of magnitude as a liquefied natural gas-fired combined cycle plant.

NGO Petitioners' reliance on *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 538 F.3d 1172 (9th Cir. 2008), to establish that EPA must assess the cost of carbon regulation is misplaced. *Center for Biological Diversity* is a National Environmental Policy Act ("NEPA") case that did not involve the issuance of a PSD permit or the application of regulations under the CAA. Rather, in *Center for Biological Diversity*, the National Highway Traffic Safety Administration ("NHTSA") considered the economic practicability of setting maximum feasible average fuel economy rates. *Id.* at 1180-81. The U.S. Court of Appeals for the Ninth Circuit directly commented that the NHTSA's NEPA analysis was distinguishable from situations where PSD permit approval was being challenged. *Id.* at 1201 (comparing the NEPA issue before the court to the PSD review conducted in *Citizens for Clean Air v. EPA*, 959 F.2d 839 (9th Cir. 1992)). The Ninth Circuit stated that assessing whether a PSD permit should have been issued is not analogous to a NEPA case because PSD cases involve a "high statutory threshold" of establishing that the specific technology that the petitioners advocated was BACT. *Id.* In light of the explicit distinction made by the Ninth Circuit, NGO Petitioners cannot now rely upon this inapposite case as authority in their petition for review of this PSD permit because they have failed overcome the threshold issue of establishing that IGCC is BACT. *Id.*

As EPA explained in their response to comments, although federal legislation may be passed to regulate CO₂ emissions, it is difficult at this stage to predict which proposal may be adopted. AR 120 at 32-33. Members of the 110th Congress introduced over 200 bills, resolutions, and amendments addressing global climate change, many of which contained different timelines, emissions reduction requirements, and mechanisms to achieve these reductions. *See, e.g.*, S. 3036, 110th Cong. (2008) (establishing a cap-and-trade system to cap CO₂ emissions from covered sources at 19 percent below current levels by 2020 and 71 percent

below them in 2050.); H.R. 2069, 110th Cong. (2008) (establishing a tax on coal, petroleum, and natural gas and increasing tax annually until emissions decrease 80 percent from 1990 levels); S. 1201, 110th Cong. (2008) (establishing a cap-and-trade system and freezing CO₂ emissions at current levels by 2011 and ultimately requiring a 17 percent reduction below 1990 levels by 2025). Adding to the confusion is a change in leadership of the committee vested with the authority to draft global climate change legislation, the House Energy and Commerce Committee.⁴⁰ These changes in leadership could represent a significant philosophical shift in addressing CO₂ emissions as both Representatives Henry Waxman and Edward Markey introduced legislation in the 110th Congress that differ from the House Energy and Commerce Committee discussion draft, as well as from each other. *See* H.R. 1590, 110th Cong. (2008) (establishing a cap-and-trade system and requiring emissions reductions of two percent per year in 2011 reaching 1990 levels by 2020, and requiring emissions to fall another five percent per year beginning in 2021 until an 80 percent reduction is achieved by 2050); H.R. 6186, 110th Cong. (2008) (establishing a cap-and-trade system and requiring a reduction of emissions to 85 percent below 2005 levels by 2025); and *Dingell-Boucher Discussion Draft* (establishing a cap-and-trade system and would reduce covered emissions to six percent below 2005 levels by 2020 and 80 percent below 2005 levels by 2050). Further, the global climate change discussion is now occurring against the backdrop of an economic downturn, and some Members of Congress have

⁴⁰ Former Energy and Commerce Chairman John Dingell (D-MI), working with his Energy and Air Quality Subcommittee Chairman Rick Boucher (D-VA), produced draft legislation to begin global climate change discussions in the 111th Congress. Unexpectedly, Congressman Henry Waxman (D-CA) challenged and defeated then-Chairman Dingell for control of the Committee. Currently underway is also a challenge for the Energy and Air Quality Subcommittee gavel, which may be passed from Chairman Boucher to Congressman Edward Markey (D-CA), former Chairman of the House Select Committee on Energy Independence and Global Warming.

acknowledged that global climate change legislation must be carefully designed to strengthen the nation's economy.

Without knowing the means that will be used to regulate greenhouse gases from major sources or the degree of emissions cuts required, data cannot be provided to "determine precisely the effect on air emissions" in order to quantify the benefits and costs of such regulation.

Citizens for Clean Air, 959 F.2d at 847. Without guidance from Congress or EPA, or a determinative strategy to address such emissions, it is impossible to say at this premature stage what the range of costs will be for similar sources to regulate carbon emissions. Thus, the Board should not force Desert Rock Energy to "embark upon an exploration of uncharted territory" by being subject to carbon regulation that NGO Petitioners have not shown are borne by similar sources. *Id.* (quoting *Vermont Yankee Nuclear Power Corp. v. Nat'l Res. Def. Council*, 435 U.S. 519, 553 (1978)).

D. Petitioners Fail to Show that Consideration of the Endangered Species Act Consultation and Environmental Justice Issues Under the Collateral Impacts Clause Would Yield a Different Result.

Finally, NGO Petitioners assert that a separate endangered species assessment – beyond the Endangered Species Act ("ESA") § 7 consultation actually being undertaken - is required by the collateral impacts clause. NGO Petitioners' Supp. Br. at 123-24. As an initial matter, NGO Petitioners have not pointed to any data establishing the collateral impacts of CO₂ emissions on endangered species nor have they shown how this analysis can be conducted given that "some of the latest climate results from the science community . . . indicate that current science and models cannot link individual actions that contribute to atmospheric carbon levels to specific responses of species, including polar bears." Memorandum from Mark D. Myers to Director of Fish & Wildlife Service, at 1 (May 14, 2008). NGO Petitioners cite to *Indeck* for the proposition

that a separate collateral impacts analysis of the impact on endangered species is required. NGO Petitioners' Supp. Br. at 123 (citing *Indeck*, slip op. at 108). However, Petitioners fail to disclose to the Board that *Indeck* determined that a consultation conducted during the pendency of an appeal can meet the minimum sufficiency requirements. *Indeck*, slip op. at 111 n.150. Hence, the ongoing ESA consultation process is sufficient and NGO Petitioners have not made a showing that a separate analysis is required under the collateral impacts analysis clause. Accordingly, the full discussion about the Petitioners' allegations regarding the obligation to conduct a § 7 endangered species consultation and issues related to the delegation of the environmental impacts analysis to the Bureau of Indian Affairs ("BIA") can be found in Section XII, *infra*.

Rather than use this Section to repeat responses to duplicative Environmental Justice arguments raised by the NGO Petitioners, please see Section XI, *infra*, for a thorough response to NGO Petitioners' environmental justice claims regarding issues such as waster resources and the impact on vegetation and soils; issues which NGO Petitioners argued once as affronts to environmental justice and again through improper use of the collateral impacts clause. NGO Petitioners have not shown how consideration of these issues through a collateral impact analysis would change the outcome achieved by EPA Region 9's application of the appropriate mechanisms of the PSD program or how EPA Region 9's decisions on these issues are clearly erroneous. *Steel Dynamics, Inc.*, 9 E.A.D. at 744; *In re Cardinal FG Co.*, 12 E.A.D. 153, 164 (EAB 2005).

Given NGO Petitioners' misuse of the purpose and intent of the collateral impact clause, EPA Region 9's thorough response to comments, and NGO Petitioners' inability to show how consideration of any of the above issues — IGCC, CO₂ regulation, affects on endangered

species, and environmental justice — would yield a different outcome from the one actually reached by EPA Region 9, the Board should deny review of this issue.

IV. EPA WAS NOT REQUIRED TO ASSESS THE IMPACT OF CASE-BY-CASE MACT BEFORE ISSUING THE PSD PERMIT.

Another argument raised by Petitioners is the allegation that, although not actually a part of the PSD program, EPA must consider the requirements for hazardous air pollutants ("HAPs") when determining BACT for non-HAP pollutants. As an initial matter, Petitioners waived this argument by failing to preserve this issue for appeal. Moreover, even if the Board were to grant review of this argument, the argument would fail. The CAA does not contain any requirement mandating that a case-by-case MACT determination be prepared for HAPs concurrently with the development of the PSD permit (which does not contemplate regulation of HAPs). Rather Congress expressly exempted the regulation of HAPs from the PSD requirements under section 112(b)(6) of the Act. CAA § 112(b)(6); 42 U.S.C. § 7412(b)(6). Having failed to overcome the reality of this statutory exclusion of HAPs from PSD review, Petitioners have not shown any deficiency with the Desert Rock PSD permit because EPA Region 9 did not conduct a case-by-case MACT analysis concurrent with its PSD analysis.

A. Petitioners Lack Standing to Raise Arguments Regarding the Role of a Case-By-Case MACT Analysis in the Development of a PSD Permit.

As a threshold matter, Petitioners lack standing and have waived their right to raise any arguments related to the regulation of any HAPs, including mercury, under the CAA and the impact of those regulations on the emission levels of non-HAP pollutants set during the PSD permitting process. As Petitioners acknowledge, "in order to demonstrate that an issue has been preserved for appeal, a petitioner must show that any issues being appealed were raised with reasonable specificity during the public comment period," unless that issue was not reasonably

ascertainable during the public comment period. *Indeck*, slip op. at 23, n.49 (citing 40 C.F.R. § 124.13; *In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 250 n.8 (EAB 1999)); NGO Petitioners' Supp. Br. at 127. Here, Petitioners fail to demonstrate adequately that this issue was persevered appropriately for appeal.

Petitioners did not submit any timely comments raising this issue during the original comment period. Petitioners argue that they submitted comments "on the Draft Permit related to the control of mercury emissions and the Clean Air Mercury Rule [("CAMR")]" and, thus, because Mercury is a HAP, Petitioners have preserved for appeal the broad issue of the impact of other HAP pollutants on the PSD permitting process. *Id.* at 50-52. NGO Petitioners' Supp. Br. at 128 (citing AR 66 at 50-52; AR 73 Comment 70 at 2). As part of the CAMR rulemaking, EPA promulgated a New Source Performance Standard ("NSPS") for mercury that is applicable to electric utilities such as Desert Rock. 70 Fed. Reg. 28,606 (May 18, 2005). However, nowhere in these comments do NGO Petitioners relate issues surrounding the control of mercury, or other HAPs, to the requirements imposed under the then applicable CAMR and NSPS. NGO Petitioners' comments also do not address how the CAMR and NSPS requirements impact the BACT analysis for other, non-HAP, pollutants undertaken during the PSD permitting process. NGO Petitioners are now, through this proceeding, for the first time raising the issue of HAP regulation's impact on the BACT process.

The comment to which NGO Petitioners refer was submitted by NGO Petitioners to EPA on November, 13, 2006, the last day of the public comment period on the draft Desert Rock PSD Permit. AR 66. However, the comment never discusses performing a case-by-case MACT analysis concurrent with the PSD permitting process, reviewing the requirements of CAMR or NSPS (the regulatory programs controlling mercury throughout the comment period), or utilizing

this analysis to influence the selection of BACT for non-HAP pollutants. *Id.* Rather, the comment merely presents NGO Petitioners' general objections to the lack of mercury emissions limits in the PSD permit. *Id.* at 50-52. NGO Petitioners now place undue weight on this solitary, generalized comment to allege that they have standing to argue that a case-by-case MACT determination for the Desert Rock Project must be performed concurrently with the development of the PSD permit because of the MACT determination's alleged potential influence on the BACT analysis of non-HAP pollutants. NGO Petitioners' Supp. Br. at 129-49. However, this argument is patently different from those general mercury concerns raised by NGO Petitioners in their November 13, 2006 comment. AR 66 at 50-52.

The Response to Comments shows that EPA Region 9 understood NGO Petitioners' comment as requesting that EPA Region 9 identify what measures Desert Rock would need to take to comply with CAMR. AR 120 at 35.⁴¹ NGO Petitioners did not phrase their comment in a manner whereby EPA Region 9 could not have interpreted the NGO Petitioners' comments as a request for EPA to consider the regulation of HAPs generally as part of its BACT analysis for SO₂, NO_x or any of the other criteria pollutants. Thus, it is unreasonable "[t]o expect [EPA Region 9] to have inferred from these comments the arguments [NGO] Petitioners now raise on appeal. . . ." *Indeck*, slip op. at 58.

Moreover, NGO Petitioners' objections about mercury emissions fail to satisfy the specificity requirement associated with preserving the issues of whether the regulatory requirements established through the regulation of HAPs, generally, should be considered in the BACT analysis for non-HAP pollutants or whether a MACT determination must be performed

⁴¹ EPA Region 9 acknowledged that because CAMR had been vacated, a case-by-case MACT determination would be required prior to construction. AR 120 at 35-36.

concurrently with the BACT analysis. *See Arecibo & Aguadilla*, 12 E.A.D. at 117 ("Comments submitted during the comment period must be sufficiently specific. In evaluating whether to review an issue on appeal, this Board frequently has emphasized that the issue to be reviewed must have been specifically raised during the comment period." (emphasis in original)) (citing *New England Plating*, 9 E.A.D. at 732; *Maui Elec.*, 8 E.A.D. at 9). Because NGO Petitioners failed to specifically raise these issues during the public comment period, review of this issue is not warranted. *Id.*

The requirement to 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 BP Cherry Point*, 12 E.A.D. 209, 219 (EAB 2005). The rules are intended to "ensure that the permitting authority has the first opportunity to address any objections to the permit, and that the permit process will have some finality." *Id.* (quoting *In re Sutter Power Plant*, 8 E.A.D. 680, 687 (EAB 1999)); *see also Indeck*, slip op. at 58 (noting the efficiency and integrity functions associated with the requirement to raise issues during the public comment period).

NGO Petitioners' lack of specificity cannot be overcome by an argument that they were unable to raise a more precise challenge during the comment period. These issues were "reasonably ascertainable" during the public comment period and should have been included in NGO Petitioners' November 13, 2006 comment, if not sooner. CAMR and NSPS were the applicable programs at the time, and it would have been reasonable to conclude that they would have imposed some restrictions on the Desert Rock Project's mercury emissions. The fact that now a MACT case-by-case analysis is required, as opposed to CAMR or NSPS, does not give

NGO Petitioners any new insight on the interplay between HAP regulation and the PSD permitting process that was not ascertainable before the comment period closed. If the NGO Petitioners were concerned about how control of HAPs would ensure a proper BACT analysis for non-HAP pollutants, they had the means and knowledge to have raised this issue during the public comment period.

Further, NGO Petitioners acknowledge that at least one of their rank was a party to *State of New Jersey v. EPA*, which sought to challenge the EPA rule delisting electric utility steam generating units ("EGUs") from regulation under section 112 of the CAA and led to the vacatur of CAMR and the NSPS for mercury after the close of the comment period. NGO Petitioners' Supp. Br. at 129 n.93 (noting that "one of Petitioners [NRDC] here was even involved in the *New Jersey* case"); *see also New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2007) (noting that John D. Walke⁴² and Jon Devine⁴³ participated on the brief for Environmental Petitioners). This involvement in the *New Jersey* case indicates that at least one of the NGO Petitioners should have anticipated that EGUs, including the Desert Rock Project, might be subject to case-by-case MACT analysis. In fact, the Board has previously held that it is not unreasonable to expect that "a petitioner can raise an issue where a decision is anticipated, but has not yet been issued. . . ." *Christian County*, slip op. at 16. All of the NGO Petitioners had notice of EPA's delisting of EGUs from regulation under section 112 following the publication of the delisting rule in the Federal Register on March 29, 2005 – more than eighteen months before the close of the public comment period for the Desert Rock facility's PSD permit. *See* 70 Fed. Reg. 15,944 (Mar. 29,

⁴² John D. Walke's biography on NRDC's website notes that he is a senior attorney and the director of the clean air project with NRDC's air and energy program. NRDC, NRDC Staff, <http://www.nrdc.org/about/staff.asp>.

⁴³ Jon Devine's biography on NRDC's website notes that he is a senior attorney. NRDC, NRDC Staff, <http://www.nrdc.org/about/staff.asp>.

2005). Furthermore, NRDC's petition for review in *New Jersey* was filed with the D.C. Circuit on May 18, 2005 – again, well in advance of the public comment period held from July 27, 2006 through November 13, 2006 for Desert Rock's PSD permit. Therefore, NGO Petitioners (including NRDC, which was specifically involved in the delisting rule appeal) had more than eighteen months to contemplate and consider how the challenges brought in *New Jersey* might impact the draft Desert Rock permit. Accordingly, these issues were reasonably ascertainable during the public comment period and the Board should deny review of these issues and avoid becoming "the first-level decision maker as to such newly raised issues, contrary to the expectation that 'most permit conditions should be finally determined at the [permit authority] level.'" *BP Cherry Point*, 12 E.A.D. at 219 (quoting *Knauf I*, 8 E.A.D. at 127). "To allow Petitioners to raise this issue at this stage would frustrate the Agency's important policy of ensuring predictability, efficiency, and finality in the permitting process by allowing the permit issuer the opportunity to address objections to the permit in the first instance." *ConocoPhillips Co.*, slip op. at 50.

Because these issues were reasonably ascertainable during the comment period, NGO Petitioners cannot overcome their lack of standing by demonstrating that they submitted comments after the comment period closed. NGO Petitioners point to comments they submitted to EPA on March 4, 2008, relating to the outcome of the *New Jersey* decision, which vacated the delisting rule. AR 59 (*see* attachment "Desert Rock Mercury Rule Filed".)⁴⁴ Although EPA exercised its discretion and opted to respond fully to NGO Petitioners' late comments, EPA emphasized that "these comments were submitted after the close of the public comment period."

⁴⁴ The State of New Mexico also points to late filed comments it submitted on June 19, 2008 as preserving this issue. Petitioner State of New Mexico's Supp. Br. at 35 (citing AR 102). EPA Region 9 chose not to respond to this late filed comment. AR 121 at 1.

AR 121 at 1. Even though the NGO Petitioners allege that EPA "misse[d] the point" of their comments, EPA fully responded to the only issue actually raised by the NGO Petitioners' comments. NGO Petitioners' Supp. Br. at 137; AR 121 at 21-23. EPA's election to respond to these late comments does not waive the threshold requirement of standing because the Board has previously determined that the mere fact that a party's comments are in the Administrative Record is insufficient grounds to establish standing where the comments were not received during the public comment period. *In re City of Phoenix, Arizona Squaw Peak & Deer Valley Water Treatment Plants*, 9 E.A.D. 515, 531 (EAB 2000) (explaining that petitioners lacked standing even when the agency had received the comments in advance of the public comment period and those comments were in the record). The Board expressly noted that the use of the word "during" in the title of 40 C.F.R. § 124.13 – "Obligation to raise issues and provide information during the public comment period" – "cannot be dismissed as superfluous." *Id.* at 529. Therefore, the Petitioners here were required to file "all reasonably available arguments supporting their position by the close of the public comment period," which they failed to do. 40 C.F.R. § 124.13; *see also* 40 C.F.R. § 124.19(a). As previously noted, these issues were reasonably ascertainable, during the public comment period so Petitioners should have submitted specific comments on their perception of how HAP regulations might impact the BACT analyses in the Desert Rock PSD permit. "[A] litigant cannot simply sit back, fail to make good faith arguments and then, because of developments in the law, raise a completely new challenge." *Christian County*, slip op. at 18 n.21 (quoting *Old Ben Coal Co.*, 62 F.3d at 1007). Because Petitioners waited to assert a reasonably ascertainable argument until after the close of the public comment period, they cannot overcome the threshold issue of standing so this issue should be dismissed.

B. Conducting a BACT Analysis as Part of the PSD Permitting Process Does Not Require a Source to Prepare Concurrently a Case-By-Case MACT Analysis.

In advancing their untimely argument for the first time, Petitioners unsuccessfully attempt to assert that the CAA contemplates that conducting a case-by-case MACT analysis is a PSD requirement. NGO Petitioners' Supp. Br. at 138-140; New Mexico's Supp. Br. at 36-39. In particular, Petitioners attempt to draw support from section 165(a)(3) of the Act, a provision that merely sets forth those preconstruction requirements that must be completed before construction on a major emitting facility may commence. CAA § 165(a)(3); 42 U.S.C. § 7475(a)(3) (noting that "[n]o major emitting facility . . . may be constructed . . . unless the following conditions are met). Petitioners construe this section in isolation without considering that Congress exempted HAPs from the PSD requirements.⁴⁵ CAA § 112(b)(6), 42 U.S.C. § 7412(b)(6). However, EPA Region 9, which was aware of this exemption, explained in its Response to Late Comments that it would "not be appropriate to include emission limits for HAPs in the PSD." AR 121 at 21.

Furthermore, under 40 C.F.R. § 63.43(c), case-by-case MACT determinations can be made through several different review processes and at several different stages of the pre-construction review process. The regulations make clear that sources may conduct case-by-case MACT determinations as part of the preparation of a Title V permit, by obtaining a separate Notice of MACT Approval according to the requirements of 40 C.F.R. § 63.43 (f)-(h), or through any other "administrative procedures for preconstruction review and approval" 40 C.F.R. § 63.43(c). Apparently conceding their unfounded argument that Congress has established case-

⁴⁵ Given the express exemption prohibiting the regulation of HAPs under the PSD program, it is not relevant that the original applicant, Steag Power LLC, commented that a holistic approach to "state-of-the-art emissions control" "may be useful to consider. . . during facility design," NGO Petitioners' Supp. Br. at 145. Petitioners are unable to point to a requirement to adopt a holistic approach to emissions control under the CAA.

by-case MACT as a PSD requirement, NGO Petitioners acknowledge in their Supplemental Brief that "MACT related HAP emissions themselves need not be incorporated into the permit required under [section] 165(a)(1)." NGO Petitioners' Supp. Br. at 139 n.105.

Petitioners have also failed to explain why the Desert Rock PSD permit must be updated or reopened at a later time if the forthcoming MACT determination establishes that more stringent emission requirements are necessary for any non-HAP pollutants regulated under the PSD permit, especially given that a full proper BACT analysis was conducted for the non-HAP pollutants consistent with EPA guidance and the definition of BACT. As NGO Petitioners note, PSD pollutants are often used as surrogates during the MACT analysis. NGO Petitioners' Supp. Br. at 144. Therefore, it is conceivable, for example, that if EPA Region 9 elects to use particulate matter ("PM") as a surrogate for non-mercury metals, the case-by-case MACT analysis may determine that more stringent PM emissions limitations are necessary than were previously determined in the PSD permit.⁴⁶ However, even if such a determination is made during the case-by-case MACT analysis after EPA Region 9's issuance of the PSD permit, the PSD permit would not need to be reopened because the lower limit can be set in an applicant's operating permit, and the applicant in such a scenario would merely need to comply with that more stringent emissions requirement. In fact, in recognition of such scenarios where emissions requirements conflict, EPA has issued guidance explaining how "multiple emissions limits may be streamlined into one limit" that is "at least as stringent as the most stringent limit" as a part of

⁴⁶ The current BACT analysis does not need to consider to-be-developed HAP requirements as a "BACT floor" since no HAP requirement existed at the time the BACT determination and PSD permit was finalized. Under NGO Petitioners' line of reasoning, BACT analyses would need to be continuously re-visited as new regulatory requirements become effective in the course of a project's development. This type of continuous permitting process over the course of a project's development is impractical and was never contemplated within the PSD program.

the source's operating permit. EPA, White Paper 2 – Guidance for Improving Implementation of the Operating Permits Program, at 2 (Mar. 5, 1996).

Overall, Petitioners have failed to present any reason their failure to raise these issues during the public comment period should be overlooked by the Board, or any solid legal obligation of EPA to perform a case-by-case MACT determination concurrently with PSD permit review. Their position is further diminished by the express exemption of HAPs from the PSD requirements under section 112 of the CAA. CAA § 112(b)(6); 42 U.S.C. § 7412(b)(6). In light of these shortcomings, Petitioners' argument that a case-by-case MACT determination must be part of the PSD permit process should be dismissed.

V. EPA REGION 9 COMPLETED A THOROUGH BACT DETERMINATION FOR NO_x AND SO₂ THAT IS CLEARLY REFLECTED IN THE ADMINISTRATIVE RECORD.

At the onset, Respondent notes that EPA Region 9 is the leading PSD permitting authority in the United States. EPA Region 9 houses national experts in determining and selecting BACT for inclusion in PSD permits.⁴⁷ EPA Region 9 oversees the permitting activities of some of the most stringent permitting authorities in the nation, including those in California. Therefore, EPA Region 9 unequivocally has substantial expertise in dealing with highly technical and sophisticated issues surrounding PSD permitting.

NGO Petitioners question the adequacy of EPA Region 9's BACT determination for NO_x and SO₂, and allege that these BACT determinations were not subject to public notice and comment. Specifically, NGO Petitioners claim that the Region's BACT determination was based "exclusively" on BACT limits in existing permits and on "thin" information. NGO Petitioners'

⁴⁷ EPA Region 9 staff has been used as expert witness in coal-fired power plant enforcement cases on BACT issues. See Expert Report of Matt Haber, Best Available Control Technologies for the Baldwin Generating Station, Baldwin, Illinois) (2002), submitted in *United States v. Illinois Power Co.*, No. 99-833-MJR (S.D. Ill. 2002) by the United States.

Supp. Br. at 156, 166-170. NGO Petitioners also claim that this analysis came after the close of the public comment period. These claims must fail. The administrative record clearly shows that the EPA Region 9 conducted a thorough and appropriate BACT analysis for NO_x and SO₂ and that this analysis contained all of the expected regulatory criteria. The administrative record also shows that EPA Region 9 conducted a thorough public process wherein the public, including Petitioners, fully participated in EPA Region 9's BACT determination.

A. EPA Region 9 Performed a Complete BACT Analysis for NO_x and SO₂ Consistent with the Well-Established Top-Down, 5-Step, BACT Process.

NGO Petitioners' assertion that EPA Region 9 relied "exclusively" upon only one set of information is disingenuous. The plain reading and the expansive information reflected in the administrative record relating to the BACT determinations for NO_x and SO₂ reveal a complete and reasoned analysis by the Agency that considered more than just BACT limits in existing permits. This reasoned analysis, undertaken pursuant to the 5-step top-down process, shows that the BACT limits for NO_x and SO₂ were properly set and justified following a public review process as called for under the NSR Manual. The Board has stated that it would not reject a BACT determination that deviated from the top-down process as long as all regulatory criteria were considered and applied appropriately. *ConocoPhillips Co.*, slip op. at 30 (citing *Knauf I*, 8 E.A.D. at 129-30 n.14, 135 n.25). With respect to the Desert Rock PSD permit, compliance with all of the aforementioned regulatory criteria is evident in the administrative record.

Step 1 of a top-down BACT analysis requires the identification of all demonstrated and potentially applicable control technology alternatives. NSR Manual at B-11. With the exception of IGCC, which is discussed in Section II *supra*, NGO Petitioners do not assert that EPA or Desert Rock failed to identify all available technology applicable to the Desert Rock Project, nor have NGO Petitioners successfully identified any other technology that should have been

considered. Moreover, the NGO Petitioners fail to inform the Board that Step 1 of the BACT analysis was conducted on the record before the close of the public comment period. *See* AR 6.1 at 4-1 to 4-22 (Desert Rock permit application); AR 46 (EPA Region 9's Statement of Basis and Ambient Air Quality Impact Report). The NO_x technologies identified in the record include selective catalytic reduction ("SCR"); selective non-catalytic reduction ("SNCR"); staged combustion techniques, including low NO_x burners, SCONO_x (a NO_x adsorption/desorption technology), and gas reburn. The SO₂ control technologies identified in the record are wet flue gas desulfurization, limestone injection, spray dryer absorber, and the use of low sulfur coal. Each of these technologies is discussed and fully characterized in both the Desert Rock application and in EPA Region 9's Statement of Basis and Ambient Air Quality Impact Report. *Id.* The references consulted by EPA Region 9 during this identification process indicate that the Region cast its net widely to gather and identify all of the demonstrated and potentially applicable control technology alternatives. The references consulted included the RACT/BACT/LAER Clearinghouse, recent permits issued for similar sources, EPA's National Coal BACT Workgroup database, Department of Energy/National Energy Technology Laboratory database, an EPA spreadsheet of recently permitted and proposed coal-fired power plants, trade journals, information from industry conferences and vendor guarantees, in addition to conducting discussions with EPA and tribal permitting staff. AR 6.1 at 7-1 to 7-2; AR 46.

Step 2 of a top-down BACT analysis allows the permitting agency or permittee to eliminate any control alternatives that are not technically feasible because the alternative is either not available or not applicable. NSR Manual at B-17. NGO Petitioners do not assert that EPA or Desert Rock improperly excluded a control option as technically infeasible. Moreover, NGO Petitioners again fail to acknowledge to the Board that Step 2 was also conducted on the record

before the close of the public comment period. The administrative record clearly indicates that the only identified technology that was excluded because of its technical infeasibility was the SCONO_x technology. AR 6.1 at 4-7. This technology was determined to be infeasible at Desert Rock because it is "extremely sensitive to the presence of sulfur in the flue gas and could not be applied to coal-fired boilers." *Id.* None of the identified SO₂ technologies were found to be infeasible. All of the remaining technologies identified by EPA Region 9 and Desert Rock Energy during Step 1 were considered in the remaining steps of the BACT determination.

The third step of a top-down BACT analysis requires ranking each remaining, technically feasible control technology in accordance with the control efficiency of each technology. NGO Petitioners do not assert that EPA or Desert Rock improperly ranked the control technologies pursuant to Step 3. Further, they again ignore in their arguments to the Board the fact that Step 3 of the BACT analysis was conducted on the record before the close of the public comment period. Table 3 in EPA Region 9's Statement of Basis and Ambient Air Quality Impact Report illustrates the assessed hierarchy of the NO_x feasible control options, while Table 4 of that report shows the determined ranking for the SO₂ control technologies. AR 46 at 8, 16. Thus, it is readily apparent in the record that EPA Region 9 undertook this analysis prior to the close of the public comment period, contrary to what NGO Petitioners would have the Board believe, and that this ranking of BACT technologies was available for public comment.

Step 4 of a top-down BACT analysis requires the permitting authority and permittee to either select the top-ranked control option or provide a clear justification regarding why that option is inappropriate as BACT for the specific project in question. NSR Manual at B-26. If the top-ranked control option is selected as BACT, no economic collateral impact or alternative analysis is required. *Id.* Environmental impacts, however, should be considered, even when the

top option is selected. *Id.* EPA Region 9 selected the top NO_x and SO₂ control options – SCR and low-NO_x burners for NO_x and wet flue gas desulfurization and low sulfur coal for SO₂. No economic analyses were required because the top control options were selected in both cases. *Id.* Environmental impacts, however, were considered in accordance with the NSR Manual's guidance. The environmental impacts for the SCR were noted in Desert Rock Energy's permit application and EPA Region 9's Statement of Basis and Ambient Air Quality Impact Report. AR 6.1 at 4-5 to 4-6; AR 46 at 10. The environmental impacts associated with SCR include unreacted ammonia being emitted to the atmosphere, safety issues, and increased loading to the particulate collectors. EPA Region 9 and Desert Rock Energy did not identify any adverse environmental impacts from the wet flue gas desulfurization. Further, no adverse energy impacts from the selected NO_x and SO₂ control options were identified. EPA Region 9 and Desert Rock Energy concluded that those impacts they did identify did not warrant selection of a lower-ranked control technology. NGO Petitioners do not assert that EPA or Desert Rock improperly selected the appropriate control option. And, yet again, NGO Petitioners fail to acknowledge to the Board that Step 4 was conducted and documented in the record before the close of the public comment period.

Step 5 of the top-down BACT process requires the permitting authority to select as BACT the most effective control option remaining after the Step 4 analysis and specify a BACT emission limit for the source reflective of the imposition of the control option selected. *ConocoPhillips*, slip op. at 29. As part of these efforts, the permitting authority should explain how it derived the specific emissions limit and indicate whether that limit reflects the best emission rate achievable through application of the selected BACT. *Id.* at 35-36.

NGO Petitioners claim that EPA Region 9 solely relied on existing permitting limits and did not consider demonstrated short term emissions data when selecting the BACT rate. The Board has held, however, that a permitting authority is not required to set the BACT "emission limit at the most stringent emissions rate that has been demonstrated" in practice by a facility using similar emission controls. *In re Newmont Nevada Energy Investment*, 12 E.A.D. 429, 441-42 (EAB 2005) (citing *Kendall New Century Dev.*, 11 E.A.D. at 53). The Board has recognized the use of "safety factors" in the calculation of permit limits to take into account variability and fluctuation in expected performance of the pollution controls and that setting of emissions limitations for one facility at the highest control efficiency demonstrated at another facility would make violations of the permit unavoidable. *Id.* at 442 (citing *In re Masonite Corp.*, 5 E.A.D. 551, 560 (EAB 1994)). As stated by the Board:

In essence, Agency guidance and our prior decisions recognize a distinction between, on the one hand, measured "emissions rates," which are necessarily data obtained from a particular facility at a specific time, and on the other hand, the 'emissions limitation' determined to be BACT and set forth in the permit, which the facility is required to continuously meet throughout the facility's life. Stated simply, if there is uncontrollable fluctuation or variability in the measured emission rate, then the lowest measured emission rate will necessarily be more stringent than the "emission limitation" that is "achievable" for the pollution control method over the life of the facility.

Id.

NGO Petitioners are here attempting to use short-term data from other similar sources to override EPA Region 9's technical expertise with respect to the NO_x and SO₂ BACT emission rates the Region has reasonably selected for the Desert Rock Project. This method and simplistic approach runs contrary to the long-standing EAB precedent and the application of the BACT process.

In fact, EPA Region 9 did exactly what NGO Petitioners are seeking through this argument in the administrative record as part of the overall BACT analysis. EPA Region 9 considered, on the record, actual emissions data from other facilities in its establishment of the BACT emission rates at issue. AR 120 at 45-56, 58-57. The administrative record presents EPA Region 9's rationale and decision-making process how it considered, or why it did not consider, actually achieved emission data. *Id.* With respect to setting the NO_x emission limit, EPA considered the following emission data from particular sources submitted by commenters and provided the following justifications of how EPA Region 9 treated such information:

- The NO_x emission limit in the PSD permit for Louisville Gas and Electric, Trimble County Unit 2 – EPA found that the emission limit was 4.17 tons/calendar day, not per unit of production. In contrast, the rate set for the Desert Rock Project is in lb/MMBTU. Therefore, the limits established for these facilities are not comparable. Furthermore, the permit in Trimble County Unit 2 was "designed to avoid PSD and minimize impacts on the nearest Class I area" so the emissions at that facility do not represent BACT. *Id.*
- The W.A. Parish facility achieved emission limits – EPA found that the facility was able to achieve lower NO_x emissions than Desert Rock Project because the W.A. Parish facility uses Powder River Basin ("PRB") coal, which has higher reactivity, lower fuel nitrogen content and a greater percentage of fuel nitrogen in the volatile fraction than the Navajo coal to be used by the Desert Rock Project. *Id.* at 59. Furthermore, the ash content of the coal that will be used by the Desert Rock Project is considerably higher, which can impact the performance of catalysts used in SCR. *Id.* at 60. EPA also noted that the W.A. Parish facility only achieved low emission rates for a brief period of time. *Id.*
- Data provided by one commenter from Babcock & Wilcox – EPA found that the data does not represent actual achieved emission rates, but rather, emission goals. Hence, this data does not represent BACT for NO_x and was of limited value in the Desert Rock PSD review process. *Id.* at 63.
- Data showing that 25 units had lower NO_x rates – EPA found that the provided data could not inform EPA's decisionmaking because it did not include the averaging period used for measuring the listed emission rates, the fuel used, or the boiler characteristics at these facilities. Moreover, the commenter's own data indicates that there is a wide range of control that is affected by site-specific factors. *Id.* at 68.
- Data submitted by a commenter from the Topsoe Report – EPA found the data that was submitted did not provide the NO_x emission rates in lb/MMBTU or the properties of the

fuel used and thus the data was not relevant to the establishment of NO_x emissions limits for the Desert Rock Project. *Id.* at 70.

With respect to setting the SO₂ emissions rate at the Desert Rock Project, EPA considered the following emission data from particular sources submitted by commenters and provided the following justifications for how EPA Region 9 treated such information:

- The Mitchell Power Station in Courtney, Pennsylvania achieved emission rates – EPA found that the data does not represent BACT because there was only 88 days worth of data provided, for a 17 month period. EPA Region 9 concluded that such rates do not demonstrate that the emissions levels are continuously achievable over the life of the facility. Furthermore, a closer look at the data shows that the Desert Rock Project's performance will be better than that achieved at the Mitchell Power Station, which had a daily average emission rate less than or equal to the Desert Rock Project's rate for only 29 days out of one year. *Id.* at 47-48.
- Data submitted regarding the Chiyoda bubbling jet reactor at the Shinko-Kobe power plant in Japan – EPA found that this data was insufficient to establish that it represents BACT. For example, one of the documents submitted about the technology did not contain any technical information regarding efficiencies achievable or guaranteed emission rates. The other document submitted shows efficiency rates ranging from 82%-99% and no data clarifying the conditions under which the higher rates were achieved. Furthermore, EPA noted that many of these higher rate facilities provided in this list are no longer in operation. Moreover, a paper written by Yasuhiko Shimogama (and relied on by the commenter) cannot establish that the technology is BACT because there was no data regarding averaging periods, permitted emission rates or actual emissions data. EPA took the additional step of communicating with the Shinko-Kobe power plant and learned that there are unresolved operational issues with the technology that require frequent plant shutdowns. *Id.*
- Emission data from Chiyoda's CT-121 FGD system, which is used at both the University of Illinois's Abbott Power Plant and Georgia Power's Plant Yates – EPA found that the emissions rates at the Georgia Power facility were significantly higher than the Desert Rock Project's rate. With respect to the Abbott Power Plant, EPA found that those units are not a good reference for BACT here because they are much smaller than the Desert Rock Project's units. *Id.* at 50.
- Numerous other data submitted by commenters regarding planned facilities – EPA found that this data did not establish BACT because those facilities either had not yet received emissions limits or established operational data or the data provided indicates that the emissions rates will be greater than those at the Desert Rock Project. *Id.* at 51.

- Data from Mitsubishi's reports guaranteeing SO₂ removal up to 99.8% -- EPA found the reports indicate that the guaranteed rates are for "super high" inlet SO₂ conditions (2,000-3,000 ppm), which are not representative of the conditions at the Desert Rock Project. *Id.* at 52.
- Data from Lake Michigan Air Director Consortium and Midwest Regional Planning Organization regarding 99.5% control and cost basis for SO₂ removal – EPA found that this data is not reflective of the Desert Rock Project's conditions or economics because the data assumes a fuel sulfur content of 2.5%, which is two to three times higher than the fuel sulfur content at the Desert Rock Project. Furthermore, the submission indicates that site-specific quotes are needed to obtain an accurate cost analysis. *Id.* at 53.
- Data from the AES-Puerto Rico facility – EPA found that this facility was not a similar source because the AES-Puerto Rico facility is a 454 MW facility with two circulating fluidized beds. In contrast, the Desert Rock Project is proposed to be up to a 1500 MW facility with two 750 MW PC boilers. Thus, there are several source-specific factors that vary between the two sources, including type and size of the boilers, the firing conditions, and load. Furthermore, the majority of the coal used at AES-Puerto Rico is in the 0.60% sulfur range, while the coal that will be used at the Desert Rock Project averages around 0.82% and may be up to 1.2%. EPA also noted that even with the same controls as employed by the AES-Puerto Rico facility, the Desert Rock Project's emissions would always exceed those at AES-Puerto Rico because the Desert Rock Project's coal has significantly lower energy content. Therefore, to produce the same amount of energy output, the Desert Rock Project would need to burn more coal, which creates more emissions. *Id.* at 54-55.
- Data from the NEVCO Plant – EPA found that the NEVCO Plant had numerous source-specific differences from the Desert Rock Project. Furthermore, the sulfur content of the coal used at NEVCO is much lower at 0.4% and its emissions limit is set on a different basis than the Desert Rock Project's (30-days at NEVCO as compared to a 24-hour average at the Desert Rock Project). *Id.* at 55.

As demonstrated by the administrative record, EPA Region 9 devoted multiple pages in its Response to Comments to a description of how it derived the Desert Rock Project BACT emission rates from the selected BACT for both NO_x and SO₂. This process included reviewing the possible relevance of actual emissions from similarly controlled sources, as requested by Petitioners during the comment period. Thus, there was no clear error in EPA Region 9's establishment of NO_x and SO₂ emission limits.

B. NGO Petitioners were Afforded Proper Public Notice and Comment of EPA Region 9's BACT Determination and They Participated Fully in Development of the BACT Emissions Rates.

NGO Petitioners claim that EPA Region 9 did not act properly because it did not select and fully justify the final BACT emission limits for NO_x and SO₂ until after the close of the public comment period. NGO Petitioners' Supp. Br. at 165-66. EPA Region 9 followed the process outlined in the NSR Manual – a procedure that the EAB has found to be authoritative on BACT issues. *See, e.g., ConocoPhillips Co.*, slip op. at 6. Section IV.E of the NSR Manual states, "the ultimate BACT decision is made by the permitting agency after public review." NSR Manual at B-53 (emphasis added). The NSR Manual further states:

The BACT emission limit in a new source permit is not set until the final permit is issued. The final permit is not issued until a draft permit has gone through public comment and the permitting agency has had an opportunity to consider any new information that may have come to light during the comment period.

Id. at B-54- 55 (emphasis added). It would be inconsistent with this guidance, and the Agency's intent to establish a dialogue as part of the public notice and comment requirement, to determine and fully justify the final BACT emission limit before the public comment period. A permitting authority must base its BACT determination on a full consideration of all timely public comments. 40 C.F.R. § 124.18. In accordance with this requirement, EPA Region 9's final BACT emission limit was derived after the public comment period closed, from a review of not only existing permit limits, but also after consideration of emission data from sources operating domestically and internationally, review of state regulator presentations, and deliberation on all timely public comments. AR 120 at 36-76.

Petitioners were not denied any opportunity to comment on EPA's legal and factual basis for its end-of-day BACT determination. In fact, Petitioners submitted a vast number of comments, including comments requesting that EPA Region 9 examine the actual operation and

emission levels at similar plants. AR 66 at 36-45. In response to those comments, EPA Region 9 examined the similar plants and fully responded to the Petitioners' comments on achieved emission rates. NGO Petitioners object to the fact that these analyses were done after the close of the public comment period. There is no basis for this objection, as the NGO Petitioners submitted comments and EPA Region 9 fully responded to those comments. If NGO Petitioners have substantive and specific challenges to EPA Region 9's selection of the BACT rates for NO_x and SO₂ as justified in the administrative record, they should have raised them, instead of the unsupported procedural challenges they are presently advancing. *Prairie State*, slip op. at 47 (noting that a challenge to a Regional Office's BACT analysis must contain "a detailed and specific explanation of [the Regional Office's] alleged error" and denying review where no such demonstration is made by petitioners); *see also Tondur Energy*, 9 E.A.D. at 714 (noting that 40 C.F.R. § 124.19(a) "requires that a petitioner both state the objections to the permit that are being raised for review and explain why the permit issuer's previous response to those objections (*i.e.*, the decision maker's basis for the decision) is clearly erroneous or otherwise warrants review").

As to the NO_x BACT limit, the only possible flaw to the administrative record that Petitioners raise is that EPA Region 9 did not consider the actual emissions from Unit 1 at the Trimble County LGE coal-fired power plant. NGO Petitioners' Supp. Br. at 161. However, NGO Petitioners only submitted comments to EPA Region 9 requesting examination of the permitted NO_x levels from Trimble Unit 2, which EPA Region 9 so did, as reflected in the Response to Comments. *See* AR 66 at 40 (Petitioners' comment); AR 210 at 58-63, 66 (EPA's response). NGO Petitioners cannot now say that EPA Region 9 should have intuited that NGO

Petitioners expected the Region to also consider Trimble Unit 1.⁴⁸ Because NGO Petitioners failed to make a specific request that Trimble Unit 1's actual emissions be considered by EPA Region 9 as part of its analysis to determine the BACT emission limit for the Desert Rock Project, NGO Petitioners have not met their burden of specificity to plead this issue before the Board. *See Arecibo & Aguadilla*, 12 E.A.D. at 117 ("In evaluating whether to review an issue on appeal, this Board frequently has emphasized that the issue to be reviewed must have been specifically raised during the comment period) (citing *New England Plating*, 9 E.A.D. at 732, and *Maui Elec. Co.*, 8 E.A.D. at 9); *see also Indeck*, slip op. at 58 (noting that it is unreasonable "[t]o expect the permit issuer to have inferred from these comments the arguments Petitioners now raise on appeal . . .").

Given the fact that EPA Region 9 performed a proper BACT analysis that is supported by the administrative record, and given the NGO Petitioners' full participation in the BACT process, it cannot be said that EPA Region 9 clearly erred, or was arbitrary or otherwise abusive of its discretion, when it set the NO_x and SO₂ BACT limits. Accordingly, the Board should deny review of the NO_x and SO₂ BACT emission limits.

⁴⁸ Petitioners cite to AR 25 (at 4) to indicate that they raised this issue with EPA. NGO Petitioners' Supp. Br. at 161. However, AR 25 is a copy of handwritten notes taken during a meeting held between EPA and citizen groups on April 22, 2005. Although this document is part of the administrative record, its inclusion in the record is not evidence that Petitioners raised this issue during the public comment period, which was held from July 27, 2006 to November 13, 2006. *See City of Phoenix*, 9 E.A.D. at 527-31 (explaining that petitioners lacked standing even when the Agency had received the comments in advance of the public comment period and those comments were in the administrative record because EPA cannot be obligated to conduct a time-consuming search of the entire administrative record to determine whether all comments had been addressed). In order to preserve this issue, Petitioners were obligated to raise the issue again during the public comment period. *Id.* at 531.

C. The Desert Rock Energy Project's NO_x Optimization Plan is Legal.

1. *A Public Comment Period Was Not Required to Include a NO_x Optimization Plan in the Final PSD Permit.*

A new public comment period is not required every time a new permit condition is added to a permit in response to comments received on a draft permit. *Indeck*, slip op. at 28. "Indeed, the regulations contemplate the possibility that permit terms will be added or revised in response to comments received during the public comment period." *Id.* (citing *In re Amoco Oil Co.*, 4 E.A.D. 954, 980 (EAB 1993); *In re Chem-Sec. Sys., Inc.*, 2 E.A.D. 804, 807 n.11 (EAB 1989)). Specifically, under 40 C.F.R. § 124.14, the Regional Administrator has discretion regarding whether to reopen a public comment period. The EAB generally defers to EPA's discretion regarding whether the public comment period should have been reopened as a result of changes made in a final permit. *In re Thermalkem, Inc.*, 3 E.A.D. 355, 357 (EAB 1990); *see also Amoco*, 4 E.A.D. at 981 ; *In re GSX Services of S. Carolina, Inc.*, 4 E.A.D. 451, 467 (1992).

One factor that the Board must assess whenever a change has been made to the draft permit is whether the record contained a thorough explanation of EPA's basis for changing the terms of the permit. *Indeck*, slip op. at 29 (citing 40 C.F.R. § 124.17(a)(1); *In re City of Marlborough, Mass. Easterly Wastewater Treatment Facility*, 12 E.A.D. 235, 245 (EAB 2005)). Here, EPA provided a clear basis for their inclusion of the optimization plan. EPA explained that the commenters had shown evidence regarding the W.A. Parish facility suggesting "that lower emission limits may be feasible for the [Desert Rock Project]." AR 120 at 62. However, EPA noted that the ash content of the Desert Rock Project's coal is considerably higher than the PRB coal used at the W.A. Parish facility. AR 120 at 60. EPA noted that according to a paper authored by Steven A. Benson, entitled *SCR Catalyst Performance in Flue Gases Derived from Subbituminous and Lignite Coals*, "ash can have significant impacts on SCR performance." AR

120 at 61. In particular, during combustion, "[t]he particles resulting from the reaction with minerals produce low-melting-point phases that cause a wide range of fireside deposition problems. . . . These particles cause low-temperature deposition, blinding, and plugging problems in SCR systems." *Id.* Given that the typical ash content of the coal used at W.A. Parish is around 4.6%, while the ash content of coal used at the Desert Rock Project is estimated to be approximately 20.5%, EPA was "still uncertain to what extent the ash content [would] affect SCR performance." *Id.* at 60, 62. Therefore, rather than just leaving the NO_x limit at the level set in the proposed permit, EPA Region 9 decided to lower the limit out of sensitivity to concerns raised by the commenters, and EPA Region 9 developed an optimization period to test the effects of the higher ash content on the operation of the SCR system. *See id.* The optimization process specifically calls for Desert Rock Energy to install boiler components and SCR systems that are designed to "achieve a NO_x rate of 0.035 lb/MMBTU on a 365-day rolling average, which is 22% lower than the level that the commenter claims represents BACT (i.e., 0.045 lb/ MMBTU on a 365-[day] rolling average basis)." *Id.* (emphasis added). Furthermore, EPA clarified that the five-year duration it had set for the optimization period "was established to ensure that [the optimization period] encompasses a complete catalyst life-cycle and includes a small amount of time necessary for the Permittee to compile and analyze the operating data." *Id.* Following the conclusion of the optimization period, the NO_x emission limit rate will be lowered from 0.05 lb/MMBTU (over a 365-day rolling period) to 0.0385 lb/ MMBTU (over a 365-day rolling period) "unless the data collected pursuant to the catalyst management plans indicates that these limits are not feasible and [Desert Rock Energy] submits an application for an adjustment of limits." *Id.* at 62, 89. This response shows that EPA stated its basis for instituting the NO_x

optimization plan "with reasonable clarity" and "adequately document[ed] its decision making."
Indeck, slip op. at 29.

Additionally, in assessing whether the comment period should be reopened, the permit issuer should assess "(1) whether reopening the comment period 'could expedite the decisionmaking process,' and (2) whether comments on the draft permit have given rise to 'substantial new questions.'" *Thermalkem*, 3 E.A.D. at 357 (citing 40 C.F.R. §§ 124.14(a)(1); (b)). In this case, NGO Petitioners and all other interested parties were given a "full and fair opportunity during the original comment period to present their views (pro or con) as to the draft permit's limits. . . ." *Id.* at 358. Petitioners have failed to show that reopening the comment period would expedite the decisionmaking process. Therefore, the only issue remaining is whether the final Desert Rock PSD permit raised "substantial new questions."

In *Thermalkem*, the Board reviewed a similar situation. The Board was asked to assess whether EPA should have provided public notice and comment when EPA entered into a settlement agreement to revise RCRA permit limits. *Id.* at 356. The settlement agreement at issue provided for the deletion of two permit conditions and the raising of permit limits for five other permit conditions. *Id.* The Board ultimately determined that the permit revisions did not need to undergo public notice and comment because they did not raise substantial new questions. *Id.* at 357 The questions raised by the revisions were the same as those presented in the draft and final permits – "namely, the appropriate limits on metal feed rates necessary to protect human health." *Id.* Therefore, the Board was satisfied that the *Thermalkem* petitioners had already been provided a fair opportunity to present their views about the limits included in the permit. *Id.* Moreover, the Board was reassured that the petitioners' interests were protected by the

procedures provided under 40 C.F.R. § 124.19(a), whereby any person who filed comments or participated in a hearing on the permit could petition the EAB for review. *Id.*

The same logic as was used in *Thermalkem* applies to the situation here regarding whether any new substantial questions were raised by the inclusion of a NO_x optimization plan in the final permit. The inclusion of the optimization plan addresses the question of whether the NO_x emission rates in the permit are sufficiently protective. Petitioners have already been given an opportunity to submit their opinions about the limits that should be imposed in the permit. Because the final permit does not raise substantial new questions, no public comment period was required to include a NO_x optimization plan in the final permit. *See Thermalkem*, 3 E.A.D. at 357-58.

NGO Petitioners seem to argue that the optimization plan did not pose the same questions purely on the grounds that NGO Petitioners were not provided an opportunity to comment on the duration of the optimization plan. Specifically, Petitioners allege that had they been given such an opportunity, they "would have submitted technical information explaining that the catalyst life cycle for SCRs . . . is 2 to 3 years rather than 4 or 5 years." NGO Petitioners' Supp. Br. at 172. As an initial matter, the issue of the duration of the catalyst life does not raise a substantial new question because the Petitioners' underlying argument is still the same – whether the NO_x permit limits imposed meet BACT requirements. *Thermalkem*, 3 E.A.D. at 358. The complaint that Petitioners raise is distinguishable from the situation in *Indeck*, where the Board opted to remand the permit due to lack of public comment because the permit allowed for the construction of a facility that was physically different from that which was proposed. *Indeck*, slip op. at 30. The optimization plan here does not represent a similar type of significant change to the permit conditions. Furthermore, Petitioners' unsupported statement regarding the life-cycle of the

catalyst is insufficient to meet Petitioners' heavy burden of showing that EPA committed clear error in applying its technical judgment when setting the duration of the optimization plan. *BP Cherry Point*, 12 E.A.D. at 223, 228. Without any legitimate basis to claim, or evidence indicating, that EPA did commit a clear error, the Board should defer to EPA's expertise and experience on this technical issue of typical catalyst life-cycle and deny review of the NO_x optimization plan. *Newmont Nevada Energy*, 12 E.A.D. at 477, 479.

NGO Petitioners also challenge the fact that they were not given the opportunity to comment on the conditions specified in the application Desert Rock Energy is required to file at the end of the optimization period to modify the NO_x emission limits. NGO Petitioners' Supp. Br. at 171. However, the Board has rejected similar arguments regarding whether provisions of an optimization test plan must be made subject to notice and comment. *See Prairie State*, slip op. at 111. The *Prairie State* petitioners argued that the optimization plan allowed the PM₁₀ BACT limit to be revised and that the "final permit does not require that [the test plan and report used to revise the BACT limit] be subject to public notice, review, and appeal." NGO Petitioners' Supp. Br. at 82, submitted in *Prairie State*, PSD Appeal No. 05-02 (filed June 8, 2005). The Board should follow *Prairie State*'s precedent and determine here that public notice and comment is not required with respect to the application to be provided to EPA.

NGO Petitioners also object to the fact that the permit does not mandate that a public comment period be held if the NO_x limit is readjusted as part of the optimization plan. NGO Petitioners' Supp. Br. at 172. However, this objection is baseless because NGO Petitioners (and the public generally) will be provided with an opportunity to comment on any modifications to the Title V operating permit or other permitting process that will make any new limit an enforceable requirement. 40 C.F.R. § 70.7(h).

Lastly, NGO Petitioners raise additional arguments related to the regulation of emissions during startup and shutdown. Rather than repeating Desert Rocket Energy's response to those arguments herein, Section VI, *infra*, contains a complete discussion of compliance with BACT emission limits during startup and shutdown.

2. *The EAB Has Consistently Upheld the Legality of Optimization Plans and Has Found that Such Plans Do Not Delay Implementation of BACT.*

The Board has addressed the issue of optimization plans in at least six other instances and has consistently upheld their use. *Indeck*, slip op. at 28; *Prairie State*, slip op. at 104; *AES Puerto Rico*, 8 E.A.D. at 352; *In re RockGen Energy Center*, 8 E.A.D. 536 (EAB 1999); *In re Hadson Power 14-Buena Vista*, 4 E.A.D. 258 (EAB 1992); *In re Pennsauken County, New Jersey Resource Recovery Facility*, 2 E.A.D. 768 (EAB 1989). Based upon NGO Petitioners' inability to cite to any cases contrary to this precedent, it is clear that EPA has authority to institute an optimization plan where there is uncertainty regarding the emissions limits that are achievable, and did not commit clear error or abuse its discretion in doing so here.

Although Petitioners take issue with the duration of the optimization clause instituted by EPA Region 9, the Board has "concluded that such 'optimization clauses' are not *per se* impermissible." *Indeck*, slip op. at 86 n.126. Where there is uncertainty regarding the appropriate emissions limit, the EAB has upheld optimization plans that provided for an opportunity to lower the emissions rate and even those that enable the applicant to show that the emissions rate is not achievable and should be increased. *See, e.g., Hadson Power 14*, 4 E.A.D. 258 (denying review of a permit involving a NO_x limit subject to downward adjustment); *AES Puerto Rico*, 8 E.A.D. at 352 (denying review of a permit allowing upward adjustment of the PM₁₀ limit after obtaining stack data). Moreover, the Board has upheld optimization clauses of lengthy duration. *See, e.g., Prairie State*, slip op. at 111 n.88 (upholding an optimization clause

that provided for a three-year test period that could be "extended to a fourth year under certain limited circumstances."). Rather than finding optimization plans objectionable, the Board has even gone so far as to state that such plans are a "creative yet justifiable approach to ensuring that the permit contains effective control of [emissions]." *AES Puerto Rico*, 8 E.A.D. at 352.

Rather than acknowledge the role of optimization plans as creative solutions, NGO Petitioners object to the optimization plan, characterizing it instead as a means to "delay, potentially indefinitely, the imposition of BACT on the [Desert Rock Project]." NGO Petitioners' Supp. Br. at 173. Although Petitioners argue that a lower NO_x emission limit is achievable, they take the curious position that the more stringent post optimization period NO_x limits will never apply because Desert Rock Energy would simply mail-in a sham application for a higher limit that is post marked before the end of the optimization period. *Id.* at 173, 174. The lower NO_x emissions limit of 0.0385 lb/MMBTU (rolling 365-day average) is the default emissions limit and would not apply if, and only if, EPA agrees that Desert Rock Energy has shown, with supporting data, that meeting this low limit is infeasible. AR 122, Conditions IX.E.4, IX.E.5. Unless NGO Petitioners agree that such a limit may not be achievable (which they clearly do not as seen in their other arguments), it is inappropriate for NGO Petitioners to suggest that Desert Rock Energy would submit a bogus application to simply delay lowering an achievable NO_x limit. Such a preposterous, unjustifiable, hypothetical situation should not be entertained by this Board. It simply is not ripe for review and the Board should not give credence to Petitioners' unfounded conjecture that Desert Rock Energy would act in such an inappropriate manner. *See Kawaihae*, 7 E.A.D. at 117 (noting that the petitioners' claim must be rejected for presenting a hypothetical scenario).

Further, the Board has previously rejected challenges based upon the argument that an optimization period delays the implementation of BACT. *Prairie State*, slip op. at 111. Specifically, in *Prairie State*, the petitioners challenged the implementation of an optimization period on the basis that "[a] BACT limit must be established in the PSD permit, before the start of construction, not over three years later." NGO Petitioners' Supp. Br. at 80, submitted in *In re Prairie State Generating Co.*, PSD Appeal No. 05-02 (filed June 8, 2005). The Board squarely rejected a challenge to the implementation of an optimization period on the basis that a final BACT limit must be established in the PSD permit, before the start of construction, in *Prairie State* because the "approach effectively establishes the lower limit . . . in the present Permit" unless the facility can show that the limit is not feasible. *Prairie State*, slip op. at 110-11. The optimization plan instituted by EPA Region 9 for the Desert Rock Project does precisely that, and so is consistent with the optimization plan upheld by the Board in *Prairie State*. Optimization plans are an effective way to push BACT to lower emissions limits, and NGO Petitioners should endorse such plans rather than attacking them.

For the above reasons and the thoroughness of the administrative record explaining EPA Region 9's decision-making process, the Board should deny review of all issues relating to the NO_x optimization plan.

VI. EPA REGION 9'S STARTUP AND SHUTDOWN BACT EMISSION LIMITATIONS WERE PROPERLY ESTABLISHED AND JUSTIFIED IN THE ADMINISTRATIVE RECORD

Petitioners claim that EPA Region 9 illegally exempted periods of startup and shutdown from compliance with the BACT emission limits. NGO Petitioners assert that EPA Region 9 has committed clear error because (1) it did not provide a sufficiently specific technical justification why the Desert Rock boilers cannot meet steady-state SO₂ or NO_x BACT limits during periods

of startup and shutdown and (2) it did not respond to NGO Petitioners' legal argument that the lb/hour emission limits have not been justified as BACT limits by EPA Region 9.

NGO Petitioners' first assertion is simply false. EPA Region 9 specifically recognized in the administrative record that "BACT applies during all periods of operation including startup and shutdown." AR 120 at 105. In fact, EPA Region 9 found that the PC boilers "should be able to comply with the steady state lb/hr limits in the permit during startup and shutdown." NGO Petitioners do not cite to any document in the administrative record wherein EPA Region 9 states a different conclusion, so it seems clear that this argument regarding the inability of the PC boilers to meet steady-state SO₂ or NO_x BACT limits depends not on any current fact but rather on the assumption that the lb/hour emission limits have not been justified as BACT limits by EPA Region 9.

EPA Region 9 explained in its Response to Comments that it did not propose a separate emission limit for startup and shutdown periods, but instead applied the steady state lb/hour limits in the permit during these periods. *Id.* The reason for applying the steady state lb/hour limit instead of the lb/MMBTU limit is because "the emissions from the boilers are greater relative to the heat input during startup and shutdown periods," and so it might be difficult to establish compliance with the lb/MMBTU limit even when the lb/hour limit is otherwise met. *Id.* The Desert Rock boiler initially starts on low sulfur fuel oil only. *See* AR 12 at 5-2, 5-3. Once the boiler warms up to an appropriate temperature level, coal firing is introduced and oil firing is cut back. *Id.* at 5-3. The transition period from 100% fuel oil to 100% coal takes approximately one hour. The startup period ends at approximately 40% load. *Id.* This transition affects both NO_x and SO₂ measurements. NO_x emissions are impacted during startup because of lower SCR performance at low temperatures and temperature variations due to flame instability.

SO₂ emissions are impacted during startup due to changes in fuel type, flue gas flow, SO₂ concentration in the scrubber, and transient reactions in the scrubbing media. Similar effects occur during shutdown of the boilers. As temperature decreases during the boiler shutdown, SCR performance is impaired and the SO₂ transition impacts in the scrubber and flue gas reduces the removal rate of the SO₂ controls. These impacts, along with low heat input during startup and shutdown periods, makes meeting the lb/MMBTU rate on a consistent basis impracticable. Given the unstable combustion and factors listed, emissions during startup and shutdown cannot be accurately monitored on a lb/MMBTU basis and compliance issues can be presented. Therefore, EPA Region 9's rationale for establishing secondary SO₂ or NO_x BACT limits cannot be clearer, and NGO Petitioners, who bear the burden of proving that EPA Region 9's decision was clear error, have not suggested any other appropriate method for calculating or establishing an emissions limit for these pollutants during periods of startup or shutdown. *See Prairie State*, slip op. at 117.

EPA Region 9's approach is consistent with how startup and shutdown emissions were permitted and upheld by the Board in *Prairie State*. In *Prairie State*, the Illinois Environmental Protection Agency permitted secondary BACT emission limits for startup and shutdown derived "directly from the primary heat input BACT limits" and which did "not authorize emissions greater than the primary limits would allow at the units' rated heat input." *Prairie State*, slip op. at 115-16. EPA Region 9 used this same approach when permitting the Desert Rock Project. The NGO Petitioners understood the approach EPA Region 9 used to set the BACT emission limits during startup and shutdown, as indicated by the comments they submitted on this issue during the public comment period. AR 23 at 49. NGO Petitioners recognized that the lb/hr limit was based on the "maximum hourly heat input capacity of 6,800 MMBTU/hr during startup and

shutdown." *Id.*; see also AR 12 at 106. As an example, the 408 lb/hr NO_x emission rate was calculated by multiplying the BACT emission limit of 0.06 lb/MMBTU by the boiler maximum heat rate of 6810 MMBTU/hr. After the optimization period is concluded, the NO_x emission rate will be set at 340.5 lb/hr (30-day average). This rate was calculated by multiplying the EPA proposed emission limit of 0.05 lb/MMBTU and the boiler maximum heat rate by 6810 MMBtu/hr. As in *Prairie State*, then, the secondary BACT limits on startup and shutdown at Desert Rock are derived directly from the primary heat input BACT limits and do not authorize SO₂ or NO_x emissions greater than the primary limits would allow at the units' rated heat capacity. See *Prairie State*, slip op. at 117; AR 120 at 105.

Given that EPA Region 9 followed the EAB's direction in *Prairie State* and justified its rationale of why a lb/hour emission limit should be used during startup and shutdown periods in the administrative record, the Board should deny review of this issue.

VII. THE PSD PERMIT APPLICATION EXCEEDED THE PSD MODELING REQUIREMENTS FOR OZONE AIR AMBIENT IMPACT ANALYSES

The Desert Rock PSD permit application approved by the Region incorporates a State of New Mexico Environmental Department 2004 CAMx photochemical modeling episodes approved by EPA for an 8-hour ozone attainment demonstration. Early Action Compact for Ozone, Clean Air Action Plan, (hereinafter "NM Demonstration").⁴⁹ AR 12 at 6-50; 70 Fed. Reg. 48,285 (Aug. 17, 2005) (EPA's approval of the San Juan County Early Action Compact Plan). The NM Demonstration included simulated emissions from a power plant similar to the

⁴⁹ The NM Demonstration, including the San Juan Clean Air Action Plan and associated modeling reports is available on New Mexico's "Four Corners Ozone Task Force," available at <http://www.nmenv.state.nm.us/aqb/ozonetf/index.html>.

Desert Rock Project.⁵⁰ Although EPA does not require ozone modeling for the PSD permit applications, if they did impose such a requirement, the extensive NM Demonstration would easily meet and exceed any potential statutory PSD impact analysis to show that the emissions from the Desert Rock Project will not cause or contribute to an ozone NAAQS violation. *Id.*

This section addresses NGO Petitioners' inaccurate and repetitive allegations relating to the ozone analysis. NGO Petitioners raise needlessly repetitive comments relating to the NM Demonstration, which were fully addressed in EPA Region 9's Response to Comments. Given the repetitive nature of these comments, the NGO Petitioners' Supplemental Brief fails to provide the necessary evidence to overcome the deference granted to permitting authorities in matters requiring technical expertise. *Newmont Nevada Energy*, 12 E.A.D. at 430. Additionally, it was proper for EPA to refer to the Scheffe Table as a "useful and appropriate" analysis of potential ozone impacts required by the permitting authority. *Masonite*, 5 E.A.D. at 579. Finally, as supported by the NM Demonstration and as analyzed by EPA in the Response to Comments document, there is no evidence that the Desert Rock Project would "cause or contribute" to an exceedance of the ozone standard; the untimely monitored data presented by the Petitioners does not alter that conclusion.

A. The Desert Rock Application Exceeded Any PSD Requirements to Show that the Desert Rock Project will Not Cause or Contribute to Ozone Levels.

The NM Demonstration reviewed and subsequently approved by EPA Region 9 met and exceeded the CAA PSD requirements to show that the proposed Desert rock Project will not cause or contribute to a violation of the 8-hour ozone NAAQS standard. 42 U.S.C. § 7475(a)(3);

⁵⁰ AR 120 at 125 (citing Section 4.2 of "Air Quality Modeling Analysis for the San Juan Early Action Ozone Compact: Maintenance for Growth and Control Strategy Modeling", Alpine Geophysics, LLC and ENVIRON International Corporation, Inc., 26 February 2004, available at <http://www.nmenv.state.nm.us/aqb/ozonetf/index.html> (Attachment 4 to the Clean Air Action Plan) (hereinafter referred to as "NM Growth and Control Strategy Modeling")).

40 C.F.R. § 52.21(k). To assess ambient air quality impacts of a proposed source upon a NAAQS standard such as ozone, the PSD regulations require an assessment of both the existing ambient air quality and whether the proposed facility will "cause or contribute" to future violation of a NAAQS, in this case the 8-hour ozone standard. NSR Manual at C.1-2; 40 C.F.R. §§ 52.21(i)(5)(i), (k), (m). Desert Rock's February 2004 application, May 2004 revised application and June 2006 revised modeling collectively addressed the ozone monitoring and ambient air impact requirements applicable to the Desert Rock Project. AR 6.1 at 3-5, 7-5; AR 12 at 3-4, 7-6; AR 43 at 6-11, 12. The NGO Petitioners' concerns relating to the extensive NM Demonstration that supported the PSD ozone ambient air quality analysis were divergent at best and were sufficiently addressed in EPA Region 9's Response to Comments document. In fact, the NM Demonstration conducted exceeds EPA modeling regulations for analyzing the potential ozone impact from a single source. AR 120 at 124; 40 C.F.R. Pt. 51, App. W. 5.2.1(c). EPA Region 9 reasonably relied upon the NM Demonstration to determine that the Desert Rock Project would not "cause or contribute to" a violation of the ozone NAAQS as required by Section 165 of the Clean Air Act.

1. *The Desert Rock Application Met the PSD Ambient Air Quality Analysis Requirements for Ozone*

The air quality analysis conducted by Desert Rock, including the NM Demonstration relied on by EPA Region 9, fulfill the PSD ozone analysis requirements. When assessing the current air quality, the Desert Rock application relied upon state monitoring data which has historically been accepted by EPA to fulfill the preconstruction monitoring requirement in the ambient impact analysis. AR 6.1 at 3-5, 7-5; AR 12 at 3-4, 7-6; 61 Fed. Reg. 38,250, 38,295 (July 23, 1996) (noting that "[h]istorically, [the PSD preconstruction monitoring data requirement has been satisfied largely through the use of monitoring data collected from existing

State or local agency air quality monitoring networks"); EPA, *Ambient Monitoring Guidelines for Prevention of Significant Deterioration* at A-21 (May 1987) (noting that an option for determining the existing air quality concentrations "is to use air quality data collected in the vicinity of the proposed source or modification"). No party disputes Desert Rock's compliance with this aspect of the ambient air quality analysis.

For the future ozone ambient air quality impact analysis, the regulations provide that "all estimates of ambient concentrations required under [paragraph 52.21(k)] shall be based on applicable air quality models, data bases, and other requirements specified in appendix W of part 51 of this chapter." 40 C.F.R. 52.21(k)(2)(1). Specific to ozone, the appendix W modeling guidance states that when ozone impacts from individual sources are evaluated EPA regulations require consultation with the EPA Regional Office to determine the most "suitable approach on a case-by-case basis." 40 C.F.R. pt. 51. App. W § 5.2.1(c). In the instant case EPA Region 9, as the permitting authority, relied upon an extensive photochemical ozone attainment demonstration, submitted by the State of New Mexico and approved by EPA. AR 120 at 124. The NM Demonstration includes complex modeling scenarios necessary to accurately replicate and predict the photochemistry involved in ozone formation which is caused by the "interaction of multiple pollution sources on a regional scale, rather than with an individual source." *Id.* EPA Region 9's response to NGO Petitioners' comments on the ozone impact analysis reflected the current state of regulatory guidance and clarified that "there is no EPA-approved model for estimating the ozone impact of individual point sources." *Id.* NGO Petitioners acknowledged this response to a limited degree by stating in their Supplemental Petition that EPA has little guidance on the precise method to model or evaluate ozone PSD ambient air quality impact analysis. NGO Petitioners' Supp. Br. at 200. Prior decisions of the Board have recognized that

There is little by way of formal regulatory requirement governing the analysis predicting whether either the 8-hour ozone or the PM_{2.5} NAAQS will be exceeded, and there is much that is assigned to the permit issuer's technical judgment made in consultation with EPA's Regional Office. We generally accord broad deference to permitting authorities with respect to issues, such as this one, requiring the exercise of technical judgment and expertise.

Prairie State, slip op. at 128-29 (citing 40 C.F.R. pt. 51, App. W. § 3.2.2(a)).

2. *EPA Reasonably Relied upon the NM Demonstration to Determine the Desert Rock Project would Not Cause or Contribute to a Violation of the Ozone NAAQS*

In the instant case, EPA Region 9 relied on the NM Demonstration to analyze any potential ozone impact. Unlike the lack of requirements for ozone PSD ambient air impact analysis, modeling an ozone attainment demonstration requires compliance with a series of protocols including model selection, episode selection, data base development, model performance evaluation, application of models, attainment demonstration, peer-review, and documentation. 40 C.F.R. § 51 App. W § 5.2.1; EPA, *Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5} and Regional Haze* (Apr. 2007). The NM Demonstration showed first, the proposed Desert Rock Project would not "jeopardize the ozone NAAQS", and further, the peak ozone increase from the proposed Desert Rock Project did not even occur at the same time or place as the maximum ozone levels modeled. AR 120 at 126. Based upon these findings, EPA reasonably determined that the Desert Rock Project would not "cause or contribute to" pollution exceeding the ozone NAAQS in violation of the CAA Section 165(a)(3). *See Prairie State*, slip op. at 139 ("EPA has long interpreted the phrase 'cause, or contribute to' to refer to significant, or non-de minimis, emission contributions.").

Consistent with EPA PSD requirements for other pollutants that refer to dispersion analysis for a full impact analysis, the NM Demonstration for San Juan County used a "credible

photochemical dispersion modeling study . . . under the direction of the NMED Air Quality Bureau staff." Environ, *Air Quality Modeling Analysis for the San Juan Early Action Ozone Compact: Base Case and Future Case Modeling* at 1-1 (Jan. 29, 2004) incorporated by reference by AR 12 at 6-50 and available as attachment 4 to the Clean Air Action Plan, and available at <http://www.nmenv.state.nm.us/aqb/ozonetf/index.html> (hereinafter "NM Base and Future Case Modeling"). The emissions inventory developed for the NM Demonstration included sources as far as Mexico to the south, Wyoming to the north, California to the west, and western Missouri to the east. NM Base and Future Case Modeling at 1-6. Significantly, the NM Demonstration also included emissions from a facility similar to the Desert Rock proposed facility. AR 120 at 124. Furthermore, the NM Demonstration model protocol was subjected to peer review by EPA, stakeholders, and the public. NM Base and Future Case Modeling at 1-4.

The Region highlighted the sophisticated nature of the ozone modeling in its Response to Comments by stating that the analysis exceeded those typically performed for a PSD permit:

The [NM Demonstration] incorporated impacts representative of the [Desert Rock Project] and the modeling showed continued attainment of the ozone NAAQS, emissions from the [Desert Rock Project] would not jeopardize the ozone NAAQS which is the only regulatory criterion applicable. The analysis performed for [Desert Rock Project] exceeds what is typically expected for ozone in a PSD permit.

AR 120 at 126 (emphasis added). NGO Petitioners allege that the timeframe used for the modeling was too short and that the wind on days modeled do not accurately reflect days when emissions from Desert Rock would have the most impact. NGO Petitioners' Supp. Br. at 193-94; New Mexico's Supp. Br. at 45-47. However, based upon its technical expertise, EPA Region 9 stated that in its judgment the time period used was sufficient because "[i]n this circumstance it was more important for the modeling to capture peak ozone-forming conditions, which it did."

AR 120 at 126. The model also included simulated emissions from a power plant source similar to Desert Rock, an additional power plant, and new oil and gas development.⁵¹ *Id.* at 124-25.

Petitioners attempt to muddle the CAA standard applicable to the ozone impact analysis by highlighting the phrases "minimal" and "2 ppb" in EPA's conclusion that the NM Demonstration adequately showed modeled power plants would have a "minimal effect on 8-hour ozone concentrations." NGO Petitioners' Supp. Br. at 194-95 (quoting *id.* at 125). EPA does not need to explain whether the impact is minimal, but only confirm that the projected emissions will not "cause or contribute" to a future violation of the ozone standard. 42 U.S.C. § 7475(a)(3); 40 C.F.R. § 52.21(k); NSR Manual at C.1-2. To allege EPA erred in its analysis Petitioners refer to the NO_x SIP Call which established a NO_x contribution threshold of 2 ppb. NGO Petitioners' Supp. Br. at 194-195 citing *Rule to Reduce Interstate Transport of Fine*

⁵¹ The NM Demonstration relies upon present and future estimates for oil and gas emissions provided by the New Mexico Oil and Gas Association ("NMOGA") as well as the Colorado Department of Public Health and Environment ("CDPHE"). NM Growth and Control Strategy Modeling at 4-3, *available at* <http://www.nmenv.state.nm.us/aqb/ozonetf/index.html> (incorporated by reference in AR 120 at 125). The estimates include an increase in NO_x emissions of 5,331 tons per year. *Id.* State of New Mexico Petitioners claim the NM Demonstration underestimates future oil and gas NO_x emission estimates in the area and briefly reference studies by New Mexico Environmental Department and the Western Regional Air Partnership. New Mexico's Supp. Br. at 48. These references, however, are far from sufficient to allege EPA erred in its review; New Mexico and the underlying document that New Mexico relies upon fail to provide even the title of any studies allegedly conducted by the organizations much less any actual data supporting the statements. *Id.* (citing AR 57.9 at 2). EPA Region 9's Response to Comments recognizes that the NM Demonstration incorporates an increase in future NO_x emission from oil and gas facilities of 5,331 tons per year. AR 120 at 125 (citing the NM Growth and Control Strategy Modeling). New Mexico's petition, however, provides no future evidence or data to support the claim that additional emission increases should be included in the NM Demonstration. Such a cursory reference to allegedly higher future emissions fails to meet the standard necessary to merit EAB review. *See, e.g., Newmont Nevada Energy*, 12 E.A.D. at 489 (concluding that in "such circumstances we have no basis to remand the permit for reconsideration" where a petitioner "repeats its comments on appeal . . . [and] cites no statutory or regulatory authority or case law to support any of its positions. Instead [the Petitioner] merely expresses its opinion that the permit should be remanded.").

Particulate Matter and Ozone (Clean Air Interstate Rule); Revisions to Acid Rain Program; Revisions to NOx SIP Call, 70 Fed. Reg. 25,162 (May 12, 2005). *Unlike the current situation, the sources evaluated in and modeling prepared for the NOx SIP Call relate to the ozone contribution to areas already designated as ozone nonattainment areas. Id.* Further, the 2 ppb was used by EPA in the NOx SIP Call as threshold marker for further analysis; if the ozone contribution exceeded 2 ppb, additional matrix were performed to determine whether the contribution was significant. *Id.* at 25,191.

Instead of discrediting the Region's conclusion, the NOx SIP Call methodology confirmed the Region's ozone impact analysis. As EPA explained in their Response to Comments document, the NM Demonstration did show that the maximum increase in ozone would be 2 ppb, but the Region concluded this was not a significant contribution because "[t]his increase did not occur at the same time and place as the overall modeled maximum of 69 ppb, so the addition of the power plants did not increase the maximum" ozone level. AR 120 at 125; *see also* NM Growth and Control Strategy Modeling at 4-6. Further, the Region explained that even if the NOx emissions of the modeled power plant facility were doubled, and then even if the NOx emission reductions had the improbable, but worst case effect of increasing the ozone levels in a one to one linear formation on the highest peak ozone day, the projected ozone levels still would not exceed the 75 ppb ozone standard. AR 120 at 125.

In a relevant decision, this Board concluded that when peak emission increases of proposed sources do not correspond with levels predicting a NAAQS or PSD increment exceedance, the evidence does not persuasively demonstrate that emissions from the proposed facility will "cause or contribute to" an exceedance. *Prairie State*, slip op. at 140-42. In *Prairie State*, the EAB referenced an EPA Memorandum that directly addressed the definition of "cause

or contribute to" and affirmed EPA's determination that found in order to be a significant source, the impact from the proposed source must also be demonstrated to be significant in a "spatial and temporal sense". *Id.* (citing *Memorandum from Gerald A. Emison, Director, to Thomas J. Maslany, Director, Air Management Division, Regarding Air Quality Analysis for Prevention of Significant Deterioration (PSD)* (July 5, 1988)). In other words, if the proposed source's peak emissions do not correspond to the modeled NAAQS or increment violation, then the proposed source is not "significant" and may receive a PSD permit. *Id.* Here, the NGO Petitioners have attempted to turn that finding on its head by arguing that even when an EPA-approved ozone photochemical model does not demonstrate the ozone NAAQS is exceeded *and* the proposed source's peak emissions do not correspond with the highest non-NAAQS-violating level, the permit for the proposed source should be denied.

NGO Petitioners also claim that variations in stack height, and location undermine the validity of the ozone model. NGO Petitioners' Supp. Br. at 193-94. Again, NGO Petitioners' comments and Supplemental Brief fail to point to a modeling standard that is required for PSD modeling and thus have no basis for their allegations against EPA's analysis of the NM Demonstration. *See Prairie State*, slip op. at 13 ("The Board's review of PSD permitting decisions is governed by 40 C.F.R. part 124, which 'provides the yardstick against which the Board must measure' petitions for review of PSD and other permit decisions."). Regardless, EPA Region 9 sufficiently addressed each of the alleged inconsistencies raised by NGO Petitioners in its Response to Comments. AR 120 at 123-26. EPA Region 9 recognized that ozone is not directly emitted from a facility and is assessed on a regional basis because ozone "does not occur until the plume has mixed with the surrounding air and chemically reacted with it over a period of hours." AR 120 at 125. Because of the unique nature of ozone formation the model used in

the NM Demonstration was "useful for estimating typical impacts, even though the inputs do not exactly reflect the [Desert Rock Project's] geographical location." *Id.* NGO Petitioners identified no new issues in their Supplemental Brief that EPA Region 9 raised in its Response to Comments nor did NGO Petitioners show any reasons that indicate why they believe EPA Region 9's response to their comments was insufficient. *Id.* at 52, 54; NGO Petitioners' Supp. Br. at 193. Merely repeating objections made during the comment period does not warrant review by the Board. *Prairie State*, slip op. at 13; *Knauf I*, 9 E.A.D. at 5.

Not only are NGO Petitioners asserting a hollow argument, but NGO Petitioners' proposed "remedy" is redundant. While recognizing that there is little guidance to evaluate PSD impact modeling and that the model used in the NM Demonstration, CAMx, is appropriate for ozone impacts analysis, NGO Petitioners have suggested that apportionment modeling should be conducted to assess the "impacts of a small number of sources or a single county on ozone NAAQS attainment issues." NGO Petitioners' Supp. Br. at 200. This proposed remedy is redundant because the NM Demonstration includes 2007 and 2012 future case modeling with specific, source apportionment scenarios that demonstrate the additional emissions from a power plant such as Desert Rock will have "minimal impact" on 8-hour levels. NM Growth and Control Strategy Modeling at 6-2.

Based upon these misleading arguments and redundant remedies, NGO Petitioners have failed to "surmount [their] heavy burden of overcoming the deference the board generally accords to permitting authorities in matters requiring technical expertise." *Newmont Nevada Energy*, 12 E.A.D. at 430. When challenging technical issues like modeling, the Petitioners must demonstrate why the permitting authority's technical analysis is clearly erroneous and that the evidence for an alternative modeling protocol clearly outweighs the evidence against its

application. *Id.* The NGO Petitioners fail to articulate error in EPA Region 9's determination that the NM Demonstration both met the CAA PSD Ambient Air Impact Analysis for ozone and showed that the emissions from the proposed facility do not "cause or contribute" to an ozone NAAQS exceedance.

B. The Scheffe Table is A Useful and An Appropriate Tool to Use for Ozone Impact Analysis

Grasping for arguments to challenge the Desert Rock Project's PSD ozone analysis, the Petitioners have alleged that the Scheff Table is an inappropriate method to rely upon for ozone analysis. NGO Petitioners' Supp. Br. at 192; State of New Mexico's Supp. Br. at 55-56. As an initial matter, this argument is meritless because the EAB has recognized the Scheffe Table as a "useful and appropriate" analysis of potential ozone impacts required by the permitting authority. *Masonite*, 5 E.A.D. at 579.

Moreover, in the instant case, EPA Region 9 only incorporated the Scheffe Table as part of a response to comments received on the Desert Rock Project's ozone impact analysis. Contrary to Petitioners' assertions, EPA did not "rely" on the Scheff Table for the PSD impact analysis. As discussed above, the NM Demonstration submitted to and approved by EPA, included an emission source similar to the Desert Rock Project and determined that even with those and other predicted emissions, the 8-hour ozone standard would not be exceeded. AR 120 at 125. Therefore, the Scheff Table that Petitioners complain of merely supplemented the extensive ozone modeling scenarios reviewed and approved by EPA for the Desert Rock Project. *Id.* at 124. Hence, Petitioners' argument related to the Scheffe Table has absolutely no merit.

C. The Monitored Data Petitioners Reference is Untimely and Not Sufficient to Demonstrate Desert Rock will "Cause or Contribute to" an Ozone Violation

As presented in EPA's Response to Comments document and discussed in Section VII.A above, EPA reasonably relied upon the NM Demonstration to determine the Desert Rock Project would not "cause or contribute" to an exceedance of the ozone standard. AR 120 at 123-26. The untimely monitored data referred to by NGO Petitioners and submitted by New Mexico does not alter that conclusion. NGO Petitioners' Supp. Br. at 197-99; New Mexico's Supp. Br. at 49-54; AR 62 at 12 (referencing the spreadsheet 2008.xls provided on "6-18-08 attachmenst.zip").

The Petitioners' argument appears to assert that the ozone ambient air impact analysis should be reevaluated based upon the premature assumption that recent monitoring data shows the area will be in nonattainment with the new 8-hour standard of .075 ppm (75 ppb). See NGO Petitioners' Supp. Br. at 197 n.139; New Mexico's Supp. Br. at 49-54; 73 Fed. Reg. 16,436 (Mar. 27, 2008) (promulgating the new 8-hour ozone NAAQS to be effective on May 27, 2008). The Petitioners attempt to refute EPA Region 9's review of the NM Demonstration through the presentation of untimely current monitored data is misplaced for three reasons. First, revisions of the NAAQS standards are not self-implementing and as of this writing, EPA has yet to even issue proposals for the prerequisite rules or guidelines that are necessary to implement the new source review requirements for permits issued under the new 8-hour ozone NAAQS. 73 Fed. Reg. at 16,503 ("EPA plans to address how these requirements, such as attainment demonstrations . . . new source review . . . and other implementation requirements, apply to the revised NAAQS in a proposed rulemaking in Fall 2008.).⁵² Second, as further explained *infra*, the untimely submission of additional monitoring data does not provide substantial new

⁵² As of January 5, 2009, to the Respondents knowledge, EPA has not issued the above referenced proposed rulemaking.