IN RE INTER-POWER OF NEW YORK, INC.

PSD Appeal Nos. 92-8 and 92-9

FINAL ORDER

Decided March 16, 1994

Syllabus

This action involves two petitions for review of a Prevention of Significant Deterioration ("PSD") permit issued by U.S. EPA Region II to Inter-Power of New York, Inc. ("Inter-Power") for the construction of three coal-fired fluidized bed boilers in Halfmoon, New York. The Commonwealth of Massachusetts and Concerned Citizens for the Environment, Inc. ("CCE") both petitioned for review of the permit. On April 7, 1993, the Board granted review of the permit determination because of the "importance and factual complexity" of the issues presented. The Board's order focused on the adequacy of Region II's Best Available Control Technology ("BACT") determination for sulfur dioxide ("SO_2"). The Board deferred consideration of the other issues raised by the petitions for review. Thereafter, on June 10, 1993, CCE filed a motion to expedite review and deny the permit on the ground that Inter-Power intends to change the project for which it had been granted the permit and, therefore, the present permit is moot. Following a review of all responses, including the June 10 Motion, the Board on December 10, 1993, issued an Order to Show Cause requiring Region II to demonstrate why the Region's BACT analysis for SO_2 was consistent with EPA guidance and requiring Inter-Power to affirm its present commitment to proceed with the facility that is described in Inter-Power's permit application. The Board received responses to the Show Cause order in January 1994.

Held: First, CCE's June 10 Motion is denied. Inter-Power's PSD permit is not moot. Inter-Power has submitted an affidavit that affirms Inter-Power's commitment to proceed with the facility described in its PSD permit application. Therefore, the permit cannot be denied on the grounds that Inter-Power does not intend to proceed with constructing the facility, as permitted.

Second, Massachusetts and CCE have failed to demonstrate that Region II's BACT determination for SO_2 was clearly erroneous. At the heart of Massachusetts' and CCE's objections is the contention that the Region erred in rejecting the use of lower sulfur coal at the Halfmoon facility on cost-effectiveness grounds. Here, the Region correctly recognized that it was required to examine the use of cleaner forms of coal as part of the BACT analysis. The Region concluded, however, after an analysis of lower sulfur coal, that requiring Inter-Power to use coals below an average of 1.87% sulfur would not be cost-effective on the grounds that (1) the incremental cost-effectiveness of using lower sulfur coal demonstrated that the use of lower sulfur coal would impose a significant economic penalty and (2) a review of all other coal-fired fluidized bed facilities demonstrated that the Region's proposed 0.22 lbs/MMBTU emission limit for SO_2 was the lowest SO_2 emission limit for any such facility in the Northeast, save for one facility with a unique coal source and, therefore, the proposed limit reflected BACT. Although Massachusetts and CCE raise questions about the

data relied upon by the Region and the Region's ultimate judgment that lower sulfur coal would not be cost-effective they failed to meet their burden of showing that use of a lower sulfur coal at Halfmoon would be cost-effective. More specifically, contrary to Massachusetts' contention, the Region did not clearly err in not presuming that the emission limit set at a recently permitted pulverized coal facility in Massachusetts was BACT, because the Region's conclusion that pulverized coal facilities are distinguishable from fluidized bed facilities is not clearly erroneous. In addition, the Region did not clearly err in relying on Inter-Power's incremental cost-effective analysis when there was nothing presented in the record to show that it was wrong. In such circumstances, the Region's BACT determination for SO_2 must be affirmed.

Third, the remaining objections to the permit identified by CCE fail to present any factual or legal errors or any policy considerations or exercises of discretion that warrant review. Several of CCE's objections restate issues raised in the comment period without indicating why the Region's response was clearly erroneous or raise issues that were not preserved for review because they were not raised during the comment period. Accordingly, none of the issues presented by CCE require further analysis or consideration by the Agency.

Before Environmental Appeals Judges Nancy B. Firestone, Ronald L. McCallum, and Edward E. Reich.

Opinion of the Board by Judge Firestone:

I. *BACKGROUND*

EPA Region II issued a Prevention of Significant Deterioration (PSD) permit on October 26, 1992, to Inter-Power of New York, Inc. (hereinafter "Inter-Power"),[1] for the construction of three coal-fired, circulating fluidized bed boilers in Halfmoon, New York (hereinafter "Halfmoon"). The project is expected to generate 210.6 megawatts of electrical power and to supply process steam to an adjacent General Electric Company facility.

The Commonwealth of Massachusetts (hereinafter "Massachusetts") and Concerned Citizens for the Environment, Inc. (hereinafter "CCE") filed timely petitions for review of the permit on November 24, 1992. CCE also filed an addendum to its Petition for Review on December 3, 1992, several days after expiration of the review period. The Board issued an order on April 7, 1993, granting review of the permit determination because of the "importance and factual complexity" of the issues presented. Order Granting Review, April 7, 1993. The Board's

[1] Region II has delegated its authority to issue most New York State PSD permits to the New York State Department of Environmental Conservation (NYSDEC), in accordance with 40 C.F.R. § 52.21(u). However, the delegation does not extend to power plants that are subject to the jurisdiction of the New York State Board on Electric Generation Siting and the Environment ("Siting Board"). Since the Halfmoon facility falls within that category, the Agency retains authority to issue a PSD permit. *See* EPA Reply Brief, June 4, 1993, at 2 n.1. Although the Siting Board did not have jurisdiction over the PSD determination, Siting Board approval was required under New York State Law. The Siting Board issued its separate approval of the Halfmoon facility in September 1992.

Order focused on the adequacy of Region II's Best Available Control Technology ("BACT") determination[2] for sulfur dioxide ("SO_2") for the Halfmoon facility. The order stated that:

> On review, the parties should address the adequacy of the BACT analysis for SO_2, including whether the Region gave proper consideration to the use of low sulfur coal as BACT. In addition, they should identify the factors that must be considered, and the demonstration that must be made, before a permit applicant may reject a control option, including low sulfur coal, on grounds of cost effectiveness.

Order, at 6. The Board deferred consideration of the other issues raised by the petitions for review. In addition, the Board denied review of the Addendum to Petition for Review filed by CCE on December 3, 1992, on the ground that it was not timely filed. *Id.*

The parties exchanged briefs in accordance with a schedule set forth in the Board's Order.[3] In addition, 17 individuals and organizations submitted timely amicus curiae briefs.[4] Thereafter, on June 10, 1993, CCE filed a Motion to Expedite review of the permit on the ground that Inter-Power intended to change the project for which it had been granted the permit. In particular, CCE charged that Inter-Power had filed papers with the New York State Siting Board that

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[2] As discussed in detail *infra*, Section 169(3) of the Clean Air Act provides that BACT is "an emissions limitation based on the maximum degree of reduction of each pollutant subject to regulation" that is "achievable" for the facility after "taking into account energy, environmental, and economic impacts and other costs." 42 U.S.C. § 7479(3).

[3] The Board's May 18, 1993 Order states that the Board will consider briefs received by June 21, 1993, and that "[n]o further briefing will be allowed * * *." Order at 2. Accordingly, the Board has not considered the Supplemental Reply submitted by the Commonwealth of Massachusetts on July 6, 1993 and the comments submitted by CCE on July 29, 1993.

[4] The Board received eleven timely amicus briefs either opposing the issuance of the permit or seeking more stringent permit conditions. Individual briefs were submitted by Anthony Marotta; Connie Kiluh; Carol Weiser; Matt Kelly; Representative Daniel E. Bosley, Massachusetts House of Representatives; Warren A. Duffy; William H. Ziegler; Kristee Iacobucci; the Hudson-Mohawk Group of the Sierra Club and the State of Vermont. Henrietta J. O'Grady, John P. Keating and Anthony S. Derico filed a joint brief. The Board also received six timely amicus briefs favoring the project from the Town of Halfmoon; John Thomas (Citizens for a New New York); Foster Wheeler Energy Corporation; Ebasco Services Incorporated; Massey Coal Sales Company, Inc. and the Pennsylvania Coal Association.

The Board received a brief from the Building & Construction Trades Council of Greater New York on May 19, 1993, and from CP Rail System on June 16, 1993, respectively. Since both briefs were received after the time period for amicus briefs had expired, they were not considered. *See* Order Granting Request for Extension of Time, May 3, 1993.

indicated Inter-Power's desire to re-configure the Halfmoon facility and that the pending permit should, therefore, be remanded and modified.

Following a review of all briefs and responses presented, including CCE's June 10 Motion, the Board on December 10, 1993, issued an Order to Show Cause requiring Region II to demonstrate why the Region's BACT analysis for SO_2 was consistent with EPA guidance and requiring Inter-Power to affirm its present commitment to proceed with the Halfmoon facility as described in Inter-Power's permit application. The Board has received and reviewed the responses to the Show Cause Order and this matter is now ready for decision.

A. *Statutory and Regulatory Framework*

This permit proceeding arises under the Clean Air Act program for the "prevention of significant deterioration of air quality," known as the "PSD," program, for areas of the nation that meet the National Ambient Air Quality Standards (NAAQS) for regulated pollutants. 42 U.S.C. §§ 7470-7492. The PSD program requires among other things that owners and operators obtain a permit before constructing or modifying certain stationary sources of air pollution. 42 U.S.C. § 7475, *see* 40 C.F.R. § 52.21(a). Inter-Power's proposed Halfmoon facility is subject to the PSD program.

Two features of the PSD program figure in our consideration of Inter-Power's permit. First, a proposed source must demonstrate that it will not cause or contribute to air pollution in excess of any NAAQS established under Section 109 of the Act, 42 U.S.C. § 7409, or the maximum allowable increments of air quality deterioration for any regulated pollutant. *See* 42 U.S.C. § 7475(a)(3). In this connection, smaller increments are allowable in areas designated Class I, a category consisting of national parks and national wilderness areas that have been deemed worthy of additional protection. Clean Air Act § 162(a), 42 U.S.C. § 7472(a). The Halfmoon facility is to be located near a Class I area.[5] Several objections to the permit relate to the Halfmoon's facility's ability to meet the NAAQS requirements.[6]

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[5] In particular, the Halfmoon facility is to be located near the Lye Brook Wilderness area in Vermont, which has been designated a Class I area. The Forest Service is the Federal Land Manager responsible for this area and has special duties under the Clean Air Act. 42 U.S.C. § 7475(a)(3) and (4).

[6] *See, infra*, Sections III through V.

Second, the PSD program requires that proposed sources apply the "best available control technology" or "BACT" to reduce air pollution. 42 U.S.C. § 7475(a)(4). BACT is, in turn, defined in § 169(3) of the Act as:

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

42 U.S.C. § 7479(3) (emphasis added). Thus, in deciding what constitutes BACT, the Agency must consider both the cleanliness of the fuel and the use of add-on pollution control devices. *Hawaiian Commercial & Sugar Company*, PSD Appeal No. 92-1 at 5, n.7 (EAB, July 20, 1992) ("the definition of BACT includes consideration of both clean fuels and use of air pollution control devices").

The phrase, "clean fuels" was added to the definition of BACT in the 1990 Clean Air Act Amendments. *See* section 403(d) of the Amendments, Pub. L. No. 549, 104 Stat. 2399, 2631-32. EPA described the amendment to add "clean fuels" to the definition of BACT at the time the Act passed, "as * * * codifying its present practice, which holds that clean fuels are an available means of reducing emissions to be considered along with other approaches in identifying BACT level controls." Letter from William G. Rosenberg, Assistant Administrator for Air and Radiation, to Henry A. Waxman, Chairman, Subcommittee on Health and Environment, House Committee on Energy and Commerce (Oct. 17, 1990), reprinted in 136 Cong. Rec. at S16916-17 (daily ed. Oct. 27, 1990) (legislative history accompanying statement of Senator Mitchell with unanimous consent).[7] EPA policy with regard to BACT has for a long time required that the permit writer examine the inherent cleanliness of the fuel. *Id. See also, In re Old Dominion Electric Cooperative* ("ODEC"), PSD Appeal No. 91-39 at 24-26 (EAB, Jan. 29, 1992).

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[7] The amendment to insert the words "clean fuels" as part of the BACT definition was explained in the Senate Report accompanying the 1990 Clean Air amendments as follows:

> The intent of this amendment is to continue the requirements for case-by-case determinations of BACT as in current law * * *.

The EPA interpretation of the statute that guides BACT determinations is embodied in the Agency's "top-down" approach to BACT analysis. *Citizens for Clean Air v. EPA*, 959 F.2d 839, 845 (9th Cir. 1992); *In re Pennsauken County, New Jersey Resource Recovery Facility*, PSD Appeal No. 88-8, at 4-6 (Adm'r, Nov. 10, 1988).[8] Under the "top-down" approach, permit applicants must apply the most stringent control alternative, unless the applicant can demonstrate that the alternative is not technically or economically achievable. In determining the most stringent control option, the proposed source is required to look to other recently permitted sources. *Draft Manual* at B.29. "In the absence of unusual circumstances, the presumption is that sources within the same source category are similar in nature, and that [they can bear the same] costs and other impacts." *Draft Manual* B.29. Where the applicant proposes to eliminate the most stringent control alternative on the grounds that it is not "economically" achievable, EPA guidance provides that the record must show that the option is not cost-effective. *See generally Draft Manual* at B.31-B.46. Agency guidance defines "cost effectiveness" to mean "the dollars per ton of pollutant emissions reduced." *Draft Manual* at B.31. Cost-effectiveness usually involves two considerations. First, the permit writer must evaluate whether the total cost per ton of control for the pollutant is within the range of costs being borne by similar sources also charged with controlling that pollutant. Second, the permit writer should evaluate the comparative cost-effectiveness of various control options to determine their incremental cost-effectiveness. Both of those considerations are described in greater detail in the *Draft Manual* and recent BACT decisions.

For example, the *Draft Manual* explains that in determining adverse economic impact:

> It is important to keep in mind that BACT is primarily a technology-based standard. In essence, *if the cost of reducing emissions with the top control alternative, expressed in dollars per ton, is on the same order as the cost previously borne by other sources of the same type in applying that control alternative, the alternative should initially be considered economically achievable, and, therefore, acceptable as BACT.*

Draft Manual at 44 (emphasis added).

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[8] The most recent guidance on EPA's October 1990 top-down approach to BACT analysis, is contained in the *Draft New Source Review Workshop Manual* (Draft Manual). While the *Draft Manual* is not accorded the same weight as a binding Agency regulation, it reflects the Agency's current thinking and has been looked to by this Board in construing BACT. *See, e.g., In re Hawaiian Commercial & Sugar Company, supra*, at 6; *ODEC, supra*, at 6 n.6.

In this connection, the economic circumstances of the individual source should not be the focus of the cost-effectiveness evaluation. Rather, the focus should be on the "average * * * cost-effectiveness of the control alternative." *Draft Manual* at B.31. The *Draft Manual* further explains, however, that:

> [W]here a control technique has been applied to only one or a very limited number of sources, the applicant can identify those characteristic[s] unique to those sources that may have made the application of the control appropriate in those case(s) but not for the source under consideration.

Draft Manual at B.29. In addition, Agency decisions have also helped to explain the role of an incremental cost-effectiveness evaluation in selecting BACT among various control options. In *In re World Color Press, Inc.*, PSD Appeal No. 88-14 at 11 n.18 (Adm'r, Dec. 13, 1990), for example, the Administrator noted that a cost comparison of alternatives relative to their respective emissions reduction efficiencies is proper in deciding BACT. "[I]f a particular technology has a cost that is exceptionally high relative to another technology, but has only a negligibly higher emissions reduction efficiency, its greater cost (economic impact) might justify rejecting it as BACT." *See also, In re Genesee Power Station*, PSD Appeal Nos. 93-1 - 93-7 at 19 (EAB, Oct. 22, 1993) (holding that it would not be cost-effective to require a permittee to spend an additional $5 million to reduce particulate emissions by 23 tons per year).

Finally, the Administrator has determined that a cost-effectiveness evaluation (both average and incremental) must be based on "objective" economic data taken from other facilities and that the analysis must be sufficiently detailed to support the determination. *See Pennsauken, supra*, at 9 (the analysis must be more than "merely conclusory"). Ultimately, a control option may be rejected where the costs for the option "would be disproportionally high when compared to the costs normally associated with BACT for the type of facility (or BACT control costs in general) for the pollutant." *Draft Manual* at 45. As discussed in detail below, much of this appeal concerns the adequacy of Region II's BACT determination for sulfur dioxide and in particular the adequacy of the cost-effectiveness evaluation.

B. *The Inter-Power Permit*

1. *The BACT Analysis for Sulfur Dioxide*

Inter-Power applied for a PSD permit for the Halfmoon facility on November 17, 1989. As part of the permit application process, Inter-Power submitted a series of analyses, including a BACT analysis in which it proposed an emissions limitation of 0.26 lbs/MMBTU for SO_2. Best Available Control Technology Demonstration (November 1989) ("BACT Analysis"). ARI 11, Vol. II at Appendix F.[9] Inter-Power proposed a BACT strategy that would limit SO_2 by using "high temperature limestone injection into the [combustor] to achieve greater than 90 percent SO_2 removal." ARI 11 at Appendix F at II-F-1. Inter-Power arrived at a 0.26 lb/MMBTU based on the assumption that it would be using Pennsylvania bituminous coal with an average sulfur content of 1.87% and a maximum sulfur content of 2.3%."[10] ARI 11 at 2-11 and 4-3.

As part of its BACT analysis, Inter-Power considered the use of both cleaner fuel and add-on technology. First, with respect to cleaner fuels, that is coal with a lower sulfur content below the proposed 1.87%, Inter-Power included an analysis of data from the New York State Energy Plan. The New York State data indicated that in 1987 coal with a sulfur content of less than 0.5% and 1% cost $51.20 and $44.66 per ton, respectively, that coal with a sulfur content of between 1.0% and 1.5% cost $37.64 per ton, and that coal with a sulfur content of between 1.5% and 2.0% cost $38.14 per ton. Finally, the data showed that coal with a sulfur content between 2.0% and 2.3% costs $39.30 per ton.[11] ARI 11 at Appendix II-B-3. Inter-Power explained that it proposed to use a coal range of 1.75% to 2.3% sulfur [with an average 1.87% sulfur content] on the grounds that the range would allow for "flexibility of coal supply while generally avoiding the higher cost of * * * coal [below 0.75 percent]." *Id.* at 3. Inter-Power also included an analysis of recent BACT decisions for coal-fired fluidized bed boilers that showed that but for the facilities located in California, where low sulfur coal is more readily and economically available, Inter-Power proposed to use

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[9] References to the Administrative Record will be cited as "ARI."

[10] It made that choice after analyzing "10 different coals from * * * potential suppliers in western Pennsylvania" which ranged in sulfur content from 0.95 to 2.27% sulfur. BACT Analysis at 2-11. All but two of the coals had sulfur contents less than 1.69%. It stated that the emissions rate of 0.26 lbs/MMBTu represents "the control level obtained for the worst-case (*i.e.*, 2.3% sulfur) fuel" it planned to use. ARI 11 at 4-45. *See also* ARI 11 at 2-11, and Appendix II-B-3.

[11] As discussed *infra*, the Region later asked Inter-Power to address the New York State data that indicated that coal with 1-1.5% sulfur costs *less* per ton than the coal Inter-Power was proposing to use.

coal with a sulfur content that was comparable to the sulfur content used by the other coal-fired fluidized bed boiler facilities.[12]

Inter-Power went on to analyze add-on control options in its BACT analysis. Using "limestone injection to reduce SO_2 emissions to 0.26 lb/MMBTU [based on its decision to use 2.3% sulfur coal as a worst case]" Inter-Power evaluated and ranked several post-combustion control systems based on their "effectiveness and economics." ARI 11 at 4-45. *See also* ARI 11 at Appendix II-F, "SO_2 Control Cost Analysis."[13] Based on this analysis, Inter-Power concluded that both wet scrubbing and dry scrubbing would reduce SO_2 emissions but that neither would be cost-effective at Halfmoon because:

> the economic penalties associated with installing and operating a wet or dry FGD system downstream of the [coal-fired fluidized bet boiler] are severe for a minimal increase in the overall SO_2 removal efficiency of only 6 percent.

See ARI 11 at 4-45, 4-60. Specifically, the cost-effectiveness analysis demonstrated that dry scrubbing would cost $6,480 per ton of SO_2 removed and wet scrubbing would cost $10,836 per ton. ARI 11, Vol. II at 4-58. Importantly, no one has appealed from the Region's decision not to require any add-on technology as BACT.

Following Region II's review of Inter-Power's permit application, the Region sent a letter to Inter-Power on June 21, 1990, stating that Inter-Power's permit application was "complete but remains unapprovable" for several reasons, including, as it relates to this appeal, Inter-Power's decision not to use lower sulfur coal.[14] The Region stated that:

> Inter-Power should state why it has selected the higher sulfur coals as BACT which cause greater SO_2 emissions and which according to *Appendix II-B* are more expensive than the lower sulfur coals. [15]

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[12] Among the coal-fired fluidized bed boilers Inter-Power identified were: (1) Holyoke, Holyoke, Massachusetts, 2.2% sulfur coal; (2) AES Thames, Montville, Connecticut, 3.24% sulfur coal; (3) Lanhoff Grain, Danville, Illinois, 2.6% sulfur coal.

[13] Table II-F-9, titled "Sulfur Dioxide BACT Analysis: Ranking in Increasing Order of Control Efficiency" lists three control options: limestone injection with fabric filter (designated "base"); base plus wet limestone FGD and base plus dry limestone FGD.

[14] Letter from Region II to David Walden, Vice-President, Inter-Power of New York, June 21, 1990, ARI 87.

[15] The Region referred to the 1987 New York State data indicating that coals with 1-1.5% sulfur content cost $37.64 per ton or $1.15 *less* per ton than coals with 1.5-2% sulfur.

Region II also noted that a coal-fired fluidized bed boiler in Panther Creek, Pennsylvania, had been recently permitted with an emission limit for SO_2 of 0.16 lbs/MMBTU, and asked Inter-Power for "more information on why Panther Creek can achieve this SO_2 level and Inter-Power cannot."

Inter-Power responded to the Region's letter on August 3, 1990. ARI 93. With respect to the Region's request for an explanation as to why it did not propose to use 1.0% to 1.5% sulfur coal, which was allegedly cheaper than the coal Inter-Power proposed to use, Inter-Power submitted what it described as "more comprehensive data," and more recent data from the *Electric Power Monthly*. The *Electric Power Monthly* data included the average sulfur content and price per MMBTU of coals used by New York, Connecticut and Massachusetts electric utilities between January 1989 and January 1990 ("tri-state data"). ARI 93 at 9.[16] Inter-Power also plotted the tri-state data for coal cost and sulfur content and performed a statistical regression of the data. The resulting regression, called the best-fit curve, indicates that "price increases as a function of sulfur content." Inter-Power then projected the cost effectiveness of utilizing coal with lower sulfur content from the "best-fit" curve. Taking 2.3% sulfur coal as a base, the incremental cost-effectiveness of utilizing coal with a 2% sulfur content was projected to be $3,270 per ton of SO_2 emissions reduced, at a cost of an additional $896,000 annually. The cost effectiveness of utilizing coal with a 1.75% sulfur content was projected to be $4,375 per ton of SO_2 emissions reduced, at a cost of an additional $2 million annually. If 2% sulfur coal is taken as the base, the incremental cost-effectiveness of using 1.75% sulfur coal was projected to be $6,030 a ton of SO_2 emissions reduced at a cost of an additional $1 million annually. ARI 93 at Attachment 3. Inter-Power asserted that the table demonstrated that "the economic penalties [of using lower sulfur coal] are significant, especially when viewed as increments to the price of the basic [coal-fired fluidized bed] equipment." *Id.* at 9.[17] Nonetheless, Inter-Power stated that it would agree to a 0.23 lbs/MMBTU limit for SO_2, based on its intention of burning coal with an average sulfur content of 1.7% to 2.0%. *Id.*

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[16] No public comments were received specifically challenging the accuracy of these data.

[17] Inter-Power did not prepare a total or average cost-effectiveness analysis on the grounds that the control equipment, the limestone injectors, are part of the combustion unit and thus it is extremely difficult to determine an uncontrolled baseline. In addition, the control technology controls both SO_2 and NO_x and it would be very difficult to determine which costs are attributable to SO_2 controls and which to NO_x control. ARI 307; Response to Comments at 5.

Inter-Power also responded to Region II's request for more information on the Panther Creek Project in Pennsylvania. Inter-Power explained that the Panther Creek project provided for a lower SO_2 emission limit of 0.156 lbs/MMBTU because Panther Creek has access to a proprietary source of low sulfur waste coal located adjacent to the facility. ARI 93 at 11-12. Inter-Power explained that to transport equally low sulfur coal in the quantities necessary for operating the Halfmoon facility would cost $11.5 million annually because the coal is high in ash and low in energy value. For these reasons, Inter-Power concluded that using such coals would be economically infeasible. *Id.*

Finally, Inter-Power provided additional information on all of the other recently permitted coal-fired fluidized bed boilers in New York State and the rest of the Northeast. These data indicated that Inter-Power's proposed 0.23 lbs/MMBTU limit would be lower than any of the most recently permitted boilers save for Panther Creek which was distinguishable. *Id.* at 11.[18]

2. *Issues Relating to NAAQS Compliance*

The Region also addressed sulfur dioxide air quality and other air quality-related impacts in the Inter-Power permit. Inter-Power's original modeling analyses showed that the Halfmoon facility might cause or contribute to exceedances of the NAAQS for SO_2. In addition, these analyses indicated that the Halfmoon facility had the potential to adversely impact water resources in the Lye Brook Wilderness Area by increasing acid deposition. As noted above, the facility is located near the Lye Brook Wilderness Area of Vermont, which has been designated a Class I area under the Clean Air Act, and is therefore entitled to special protection under the Act. ARI 307; Final Permit Decision.

On March 20, 1991, Inter-Power submitted a new modeling analysis to the Region based on more recent New York State air quality data that significantly changed the initial air quality analysis. The new air quality analysis showed a significant decrease in the impact that the Halfmoon facility would have on the Lye Brook Wilderness. However, the data indicated that the project would certainly cause exceedances of the NAAQS for SO_2.

In response to the new data, Region II issued a revised draft permit on May 19, 1992. The revised permit provided for increased

[18] Inter-Power identified the following 4 coal-fired fluidized bed boiler facilities: (1) Northeastern Power Co., Kline Township, PA (0.32 lbs. SO_2/MMBTU); (2) Goodyear, Niagara Falls, NY (0.5 lbs SO_2/MMBTU); (3) Holyoke, Holyoke, MA (0.24 lbs SO_2/MMBTU); and (4) AES Thames, Montville, CT (0.32 lbs SO_2/MMBTU).

protections for Lye Brook, notwithstanding the projected *decrease* in the impact of the Halfmoon facility on the wilderness area. The Region's revised permit provides that the combined impact of SO_2 emissions from Halfmoon and the adjacent General Electric facility will be less than the historical SO_2 emissions from the General Electric facility alone. This condition is intended to assure that there will not be a net increase of emissions that could potentionally affect Lye Book. Second, the revised permit requires offsets from the General Electric facility and the Norlite Corporation to mitigate Inter-Power's projected SO_2 NAAQS exceedances. The offsets insure that Inter-Power's proposed emissions do not result in any NAAQS exceedances for SO_2.

3. *The Final Permit*

Region II received numerous public comments on the draft Inter-Power permits, including numerous comments from Massachusetts and CCE challenging the BACT analysis for SO_2. First, Massachusetts asserted that BACT for SO_2 should have been based on the recently permitted Ware Cogen facility in Ware, Massachusetts which is allegedly similar to the proposed Halfmoon facility but may only burn 0.75% sulfur coal and must achieve a 0.12 lb/MMBTU SO_2 emission limit. Region II explained, in response, that Ware Cogen is not comparable because it is much smaller. ARI 307 at 6-7. As explained in greater detail *infra*, the Ware Cogen facility is not only smaller, but it is not a coal-fired fluidized bed boiler facility.[19]

In addition, Massachusetts and CCE argued that Inter-Power should be required to use lower sulfur coal because other Northeastern utilities are burning lower sulfur coal, that is coal below 1.5% and even 1% sulfur content. In response, Region II explained that while these facilities burn lower sulfur coal, they do not have any add-on controls for SO_2 and, therefore, the facilities are not comparable. ARI 307, at 6-7.

The Region also received comments from CCE on a variety of other issues, including (1) the permit's emissions limitation for nitrogen oxides; (2) the permit's failure to include emissions limits for certain non-regulated pollutants; (3) the potential impact of the facility on Lye Brook; and (4) objections to Inter-power's modeling analysis. Region II addressed all of CCE's comments and issued a final permit on October 26, 1992. ARI 307.

[19] The Region was mistaken when it assumed that Ware Cogen was a fluidized bed boiler in the Response to Comments, ARI 307 at 6-7. Rather, the facility is a pulverized coal facility, that intends to achieve this emission limit by using low sulfur coal in combination with a dry scrubber. ARI 105 and ARI 128; Ware Cogen BACT analysis and Final Permit Decision. Further, Ware Cogen consists of an existing unit and a proposed new unit. The combined emission limit for SO_2 at the facility is 0.432 lbs/MMBTU (ARI 128 at 13).

As noted above, Massachusetts and CCE filed timely petitions for review of the permit. In addition, on June 10, 1993, CCE filed a motion to remand the permit on the grounds that Inter-Power proposed to change the design of the Halfmoon facility. The Board's conclusions regarding the terms of the PSD permit and CCE's June 10, 1993, motion are set forth below.

II. *DISCUSSION*

This discussion is divided into three basic parts. Part I concerns CCE's June 10, 1993, motion. Part II concerns the adequacy of the Region's BACT analysis for SO_2. Part III to Part V collectively address the additional issues raised by CCE's petition.

A. *CCE's June 10, 1993 Motion*

As noted above, on June 10, 1993, CCE filed a Motion to Expedite Final Resolution of Inter-Power of New York's, Inc. [sic] Prevention of Significant Determination [sic] Permit, Review, and Appeal. The motion alleged that Inter-Power had submitted a revised compliance filing with the New York State Board on Electric Generation Siting and the Environment on November 23, 1992, in which Inter-Power proposed significant design changes in the Halfmoon facility. CCE argued that the Agency's failure to acknowledge and address Inter-Power's proposed changes would prejudice CCE by requiring it to expend limited resources to oppose the present permit. Therefore, it asked the Board to:

> Take notice of the changes filed with the State by Inter-Power, revise the PSD permit and BACT determination accordingly, [and] afford parties opportunity to respond * * *."

CCE Motion, at 3.[20]

In response to CCE's motion, Inter-Power did not deny its desire to change the project. Rather, Inter-Power explained that its decision would hinge on whether the proposed "changes" would require another State hearing. Inter-Power's response led this Board to order Inter-Power on December 10, 1993 to affirm that it is presently committed to construct the Halfmoon facility for which it received a PSD permit or show cause why the permit should not be denied on the

[20] Massachusetts supports CCE's motion, arguing that "the issues raised on review may become moot or new issues may emerge" because the project has been "materially altered." Massachusetts Brief at 4.

grounds that Inter-Power does not intend to construct the facility identified in its permit application.

In response to the Board's Order, Inter-Power has submitted the affidavit of David F. Walden, Vice President for Project Management at Inter-Power. The affidavit states:

> As requested by the Board's December 10 Order, I make this affirmation to state that Inter-Power is presently committed to construct the facility for which U.S. EPA Region II issued the PSD permit and that it intends to construct the facility identified in its PSD permit application except to the extent the facility identified in the application must be modified to be in compliance with such permit.

We read this affidavit together with an accompanying letter to the New York State Siting Board[21] to mean that despite earlier submissions to the New York State Siting Board Inter-Power does not presently intend to pursue any changes to the Halfmoon facility and, therefore, the pending PSD permit is not moot. Accordingly, CCE's June 10, 1993 Motion asking for this Board to require Region II to revise or deny the PSD permit on the grounds that Inter-Power intends to change the design of the Halfmoon facility is denied.

B. *BACT Analysis for SO_2*

At the heart of this appeal is Massachusetts' and CCE's contention that the permit's emissions limitation for $S0_2$ does not reflect BACT.[22] Massachusetts asks the Board to remand Region II's BACT determination for a new analysis, with a renewed opportunity for public comment, based on the use of low sulfur coal as fuel. Alternatively, it asks the Board to amend the permit to limit the $S0_2$ emissions rate to 0.12 lbs/MMBTU, the emissions limitation imposed on the "Ware Cogen" facility in Ware, Massachusetts. *Id.* at 1, 5-7. CCE argues that other electric generation projects in New York and adjacent states fire coals with a lower sulfur content than the coal proposed for the Halfmoon

[21] On January 6, 1994, counsel for Inter-Power sent a letter to the New York State Siting Board in which he states that "Inter-Power intends to amend its November 1992 compliance filing to the extent necessary to bring that filing into alignment with the [EPA] PSD permit. [Exhibit A to Response to Show Cause Order.]

[22] As noted above, neither Massachusetts nor CCE object to the Region's decision not to require the use of add-on controls as BACT, but instead focus their objections on the Region's decision not to require a lower emission level through use of lower sulfur coal.

facility, and that Inter-Power has not demonstrated that it could not afford to use lower sulfur coal. *Id.* at 15-16. CCE also seeks a lower SO_2 emission limit.

1. *Standard of Review*

Before embarking on an evaluation of these arguments, the Board must emphasize the heavy burden Massachusetts and CCE face in proving that they are entitled to the relief they request. In general the Board will defer to the permit issuer's judgment absent evidence of a clear error of fact or law. 40 C.F.R. § 124.19(a). *See also In re SEI Birchwood, Inc.*, PSD Appeal Nos. 93-11 and 93-12 at 2 (EAB, Jan. 27, 1994) (cases cited therein). Here, it is important to remember that in granting review, the Board was careful to note that further briefing was needed because of "the importance and factual complexity" of the issues presented and not because of any identifiable error. In addition, the Board undertook the extraordinary step of issuing a Show Cause Order before issuing a decision, because it was not clear from the record before us whether the Region had clearly erred in its BACT determination for SO_2.

Ultimately, Massachusetts and CCE may only prevail if the evidence in the record in support of their view clearly *outweighs* the evidence presented by the Region in support of its decision. In this connection, it is important to distinguish between BACT decisions where the permit issuer failed to consider an "available" control option in the first instance[23] and decisions where the option was considered but rejected.[24] Where a more stringent alternative is not evaluated because the permitting authority erred in not identifying it as an "available" option, a remand is usually appropriate, because a proper BACT analysis requires consideration of all potentionally "available" control technologies.[25] However, where an alternative control option has been evaluated and rejected, those favoring the option must show that the evidence "for" the control option *clearly outweighs* the evidence "against" its application. *See ODEC, supra*, at 28 ["[T]he petitioners have not persuaded me that the State's choice represents clear error

[23] *See, e.g., Genesee Power Station, supra* at 30 (remanding is appropriate where fuel cleaning was not considered, but is a potentionally "available" technology).

[24] *ODEC, supra*, at 28 (the State's decision *not* to require a control technology was upheld because it was carefully considered and evidence did not conclusively show its use was BACT).

[25] Importantly, these cases do not mandate adoption of an alternative but simply "consideration" of the alternative. *Genesee* at 30 ("It is important to emphasize that although MDNR must *consider* that combination in its BACT determination * * *, it does not follow that MDNR must ultimately *require* such a combination * * *.").

because the evidence "for" and against [the option] * * * was in such close balance."]. Here, Massachusetts and CCE had the burden of showing that use of a lower sulfur coal at Halfmoon would be cost-effective. Tested by this standard, Massachusetts and CCE have failed to meet their burden.

2. *Region II's BACT Determination For SO_2 Was Not Clearly Erroneous*

From the outset, Region II recognized that BACT for SO_2 at the Halfmoon facility would turn on the sulfur content of the coals Inter-Power proposed to use in combination with the coal-fired fluidized bed boiler's limestone injection system. *See, e.g.*, ARI 87; June 21, 1990 Letter from Region II to David Walden. The issue, as the Region correctly stated, was to select the lowest sulfur coal "achievable." Response to Show Cause Order at 8. In that no one questions the control-effectiveness of low sulfur coal, the Region properly focused its critique of Inter-Power's BACT analysis on the cost-effectiveness of using a cleaner coal. ARI 87. The Region's objections were dictated both by the 1990 Clean Air Act amendments which, as discussed above, expressly require consideration of clean fuels in selecting BACT, as well as prior decisions of the Administrator, which state that a proper BACT analysis must include consideration of cleaner forms of the fuel proposed by the source. *ODEC, supra*, at 26 n.39.

It was against this backdrop that Region II required Inter-Power to explain: (1) why Inter-Power should not be required to use a less-polluting and potentially less costly 1-1.5% sulfur coal, as suggested by the 1987 New York State Energy Plan data, and (2) why Inter-Power should not have to meet the 0.156 lbs/MMBTU SO_2 limit set for the recently permitted Panther Creek coal-fired fluidized bed boiler facility. Inter-Power submitted a response which, as discussed above, included (1) a detailed analysis based on extrapolated data from the *Electric Power Monthly* that showed that requiring coal with a sulfur content below 1.75% would not be cost-effective and (2) information on the Panther Creek facility that showed that Panther Creek has access to a unique low-sulfur coal source and, therefore, the Panther Creek facility is distinguishable from the Halfmoon facility. Further, Inter-Power submitted an updated survey of *all* other recently permitted coal-fired fluidized bed boilers that showed that Inter-Power's proposed SO_2 limit for BACT would be lower than the limit set for any other recently permitted coal-fired fluidized bed boilers in the Northeast, save for Panther Creek. ARI 93; *see also, supra* footnotes 12 and 18.

Based on this information, and the information contained in the initial BACT analysis, Region II set a 3-hour 0.22 lbs/MMBTU limit for SO_2 as BACT for the Halfmoon facility. The limit is based on Inter-Power using 1.87% sulfur coal. For the reasons set forth below, we find that the Region's BACT decision for SO_2 is not clearly erroneous.

First, contrary to Massachusetts' contention, the 0.12 lbs/MMBTU emission limit for SO_2 set by Massachusetts for the proposed Ware Cogen facility, did not establish any presumption with respect to BACT for the Halfmoon facility. Mass. Petition at 6. As noted at the outset, EPA guidance provides that it is *presumed* that sources "within the same category" are subject to the same limit. *Draft Manual* at B.29. The *Draft Manual* states:

> In the absence of unusual circumstances the presumption is that sources within the same category are similar in nature and that cost and other impacts that have been borne by one source of a given source category may be borne by another source of the same source category.

Draft Manual at B.29. The Ware Cogen facility is not a coal-fired fluidized bed facility. Rather, it is a pulverized coal facility that proposes to meet its SO_2 emission limit through the combined use of low sulfur coal and an add-on dry scrubber. ARI 128, Ware Cogen permit.[26] Therefore, the Region did not clearly err in not considering Ware Cogen as a "similar source." Rather, it properly relied upon the surveys of other coal-fired fluidized bed boilers in selecting BACT.[27] The surveys of other coal-fired fluidized bed boilers shows that the proposed 0.22 lbs/MMBTU limit would be the lowest emission limit for SO_2 of any recently permitted fluidized bed facility in the Northeast. However, the Region did not simply rely on an examination of other fluidized bed boilers to establish a limit. Rather, a limit was set after an analysis of the use of lower sulfur coal.

As discussed below, Massachusetts and CCE have not shown that Inter-Power's analysis of the use of a lower sulfur coal was so flawed as to be clearly erroneous. In response to the Region's request for an

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[26] Massachusetts' contention that it was somehow prejudiced by the Region having erroneously referred to Ware Cogen as a coal-fired fluidized bed facility is without merit. As the permitting authority, Massachusetts clearly knew that the Ware Cogen facility was not a coal-fired fluidized bed facility. *See* ARI 105; BACT Analysis for Ware Cogen at 20.

[27] Neither of the Petitioners has questioned the Region's conclusion that "similar sources" for purposes of determining BACT in this case include only "coal-fired fluidized bed facilities."

evaluation of lower sulfur coal, Inter-Power prepared an analysis using different data than it had used to prepare its initial BACT analysis. Inter-Power's analysis was based on data taken from the *Electric Power Monthly*, which included coal costs for utilities throughout the tri-state area and which showed that lower sulfur coal, that is coal below 1.75% sulfur, generally costs more than higher sulfur coal and that very low sulfur coal, below 1% sulfur, costs significantly more than higher sulfur coal. Inter-Power performed a regression analysis with the data, resulting in "a best-fit" curve. Inter-Power used the best-fit curve to show that there would be significant economic penalties associated with requiring Inter-Power to use low sulfur coal below 1.75% sulfur. ARI 93. In particular, the analysis suggests that the incremental cost-effectiveness of using coal with a sulfur content below 1.75% would be approximately $4,000 a ton, assuming a base case of 2.3% sulfur coal and approximately $6,000 a ton, assuming a base case of 2% sulfur coal.

Both Massachusetts and CCE raise questions about Inter-Power's data. In particular, they suggest that Inter-Power may have over-stated the incremental cost-effectiveness of using a lower sulfur coal below the 1.87% (average) sulfur Inter-Power proposes to use. Massachusetts and CCE point to the initial New York State data and, extra-record data collected by the Federal Energy Regulatory Commission in 1990,[28] to argue that coal with a sulfur content between 1.0% to 1.5% costs virtually the same per ton as coal with a 1.5%-2.0% sulfur content and, therefore, Inter-Power should be required to use a lower sulfur coal and meet a lower SO_2 emission rate.

While Massachusetts and CCE have raised questions about Inter-Power's cost-effectiveness analysis, they have not demonstrated that the analysis is clearly erroneous. We recognize that in some cases questions regarding the accuracy or validity of the data may be so great that the Board will require further study, but that is not the case here. To begin with, we cannot say that the Region clearly erred in rejecting the initial New York State data and relying instead on the more comprehensive "tri-state" data obtained from the *Electric Monthly Report*. Permit issuers must be free to exercise expert judgment and rely on the data they conclude are more accurate or comprehensive. Indeed, neither Massachusetts nor CCE have demonstrated that the *Electric Monthly Report* data are inaccurate or incomplete.

In addition, CCE and Massachusetts have not provided us with any basis for questioning the Region's expert conclusion that measur-

[28] CCE's reliance on extra-record data is misplaced. Under the rules governing these proceedings, the Board will not consider extra-record evidence, except in extraordinary circumstances not relevant here. *See* 40 C.F.R. § 124.18(c).

ing coal costs as a function of energy produced (MMBTU) as opposed to cost per ton is more accurate. Accordingly, we accept that the tri-state data provides a better means of assessing cost-effectiveness. While Massachusetts and CCE continue to argue that the cost of coal per ton is a valid measure, they have not pointed to any evidence to show that the Region's view is wrong. Therefore, Massachusetts and CCE have not established that the best-fit curve derived from the tri-state data and ultimately used to demonstrate the cost-effectiveness of various coals is fundamentally flawed or based on any clear error of fact.[29]

Finally, Massachusetts and CCE have not demonstrated that the Region's ultimate judgment—that use of coals below 1.87% sulfur would not be cost-effective—was clearly erroneous. The Region concluded that it was not cost-effective to require Inter-Power to use coals below 1.87% (average) sulfur and expend an additional $4,000 to $6,000 or more a ton for SO_2 removal in order to obtain a marginal increase of SO_2 removal beyond that already obtained through use of coals in the 1.75% to 2.3% sulfur range. As the Region stated in its response to comments:

> In the August 3, 1990 Letter [ARI 93] (Walden to Riva) Inter-Power provides an economic analysis on the feasibility of using lower sulfur coals. That analysis demonstrates that sulfur coals with less than 1.5% sulfur would be economically infeasible for this facility. In addition, * * * based on the existing and proposed [coal-fired fluidized bed facilities] that we looked at an SO_2 emission rate of 0.22 lbs/MMBTU * * * is within the SO_2 BACT range [6].

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[29] CCE's contention that cost-effectiveness is not a relevant consideration and that Inter-Power should be required to pay for the lowest sulfur coal it can afford is without merit. As discussed in detail at the outset of this decision, EPA has historically and consistently viewed cost-effectiveness to be a proper basis for rejecting a control option, without regard to an individual source's financial status. *Draft Manual* at B.31

CCE's contention that Inter-Power should be required to meet a .208 lbs/MMBTU emission limit for SO_2 because Inter-Power presented testimony in the State permitting proceeding, suggesting it could meet that limit to achieve NAAQS compliance is also misplaced. Compliance with NAAQS and BACT are separate issues and must be separately evaluated. *See In re Columbia Gulf Transmission Co.*, PSD Appeal No. 88-11 at 9 (Adm'r, June 21, 1989). *See also Draft Manual* at B.54 (regardless of BACT, emission limits may be made more stringent to meet NAAQS). Thus, as the *Draft Manual* explains:

> A permit cannot be issued to a source that would cause or contribute * * * to [a NAAQS] violation regardless of the outcome of the BACT analysis.

Draft Manual at B.54.

Thus, the fact that Inter-Power could theoretically achieve a limit to meet its absolute NAAQS obligations is not relevant in setting a BACT limit that requires a different analysis.

Neither Massachusetts nor CCE have shown that the projected increased cost per ton for SO_2 removal presented by Inter-Power in its August 3, 1990 letter is clearly wrong.[30] Nor have the Petitioners shown that similar Northeastern coal-fired fluidized bed boiler facilities are being required to bear this additional expense to meet BACT. Rather, the Petitioner's argue that absent data to show that the additional costs associated with the use of low sulfur coal are in fact outside the range of SO_2 control costs being borne by other sources, the record does not support the Region's cost-effectiveness determination.

For the reasons set forth below, we reject Petitioners' contention. We accept that cost-effectiveness is determined in most cases by showing that a control option or combination of options is either within or outside the range of costs being borne by similar sources under recent BACT determinations. We note that this information was not presented in this case because of the unique features associated with coal fired fluidized bed boilers.[31] Although the absence of such information makes a cost-effectiveness determination more vulnerable to attack we do not find the absence of such data or information fatal in this case, given the extensive information available in the record regarding other recently-permitted coal-fired fluidized boilers. As discussed above, and outlined in footnotes 12 and 18, the surveys of all other coal-fired fluidized bed boilers confirmed that, except for Panther Creek (which has a unique coal source) the proposed 0.22 lbs/MMBTU emission rate, which is based on a proposed use of 1.87% sulfur coal, is the lowest emission rate proposed for any such facility in the Eastern United States. Further, the record disclosed that none of these other facilities are required to use a lower sulfur coal. In such circumstances we can assume that requiring Inter-Power to use a lower sulfur coal at Halfmoon in order to obtain a lower emission rate would on average require Inter-Power to bear costs beyond the costs being borne by *similar* facilities.[32] Therefore, we conclude, based on the record before us, that the Region's deci-

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[30] In this connection, we note that Massachusetts failed to provide any cost information on the Ware Cogen facility and in particular on the cost-effectiveness of using 0.75% sulfur coal. If the Region had such data, the Region may have had some basis for questioning Inter-Power's evaluation.

[31] *See, supra*, n.17; ARI 307 at 5.

[32] We agree with the Region that although the cost of control of coal-fired fluidized bed boilers through use of limestone injection has not been quantified, it is significant. Therefore, we agree that sources that emit SO_2 without the use of any controls are not comparable. ARI 307 at 7. Accordingly, the fact that uncontrolled sources are using lower sulfur coal than proposed for Halfmoon, does not alter our analysis.

sion not to require the use of lower sulfur coal on cost-effectiveness grounds was not clearly erroneous.[33]

C. *CCE's Other Objections To The BACT Analysis*

CCE argues that the "entire BACT determination" for Halfmoon is flawed because the Region failed to perform its regulatory duty under 40 C.F.R. § 52.21(b)(12) to "[take] into account energy, environmental and economic impacts and other costs" in its permit determination.[34] CCE Petition at 12. In particular, it claims that the Region failed to consider the environmental impacts of: (1) noise; (2) electromagnetic fields; (3) health risks; (4) evaporation of PCBs from the Hudson River; (5) hydrogen chloride emissions; and (6) carbon dioxide emissions. *Id.* It also alleges that the Region failed to make an energy determination for the project that takes into account the "need for electrical capacity and fuel diversity" in the area. *Id.*

Region II responds that while the PSD regulations require consideration of "environmental," "energy" and "economic" impacts when determining BACT, "the purpose of assessing other environmental impacts is to assist in selecting the best available control technology from a group of alternatives." Region's Response to Petitions (January 20, 1993), at 22. We agree. Here, our review of the record shows that no one demonstrated to the Region how the environmental impacts of noise, electromagnetic fields, health risks, or PCB evaporation; or energy considerations, would have influenced the choice of control technologies or options considered for this facility. In such circumstances, CCE has not demonstrated any error in the BACT analysis. *See ODEC, supra,* at 23.

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[33] We note, however, that our decision is based on the specific facts presented in this case and that in the future permit issuers would be well-advised to include some total cost-effectiveness comparisons in their BACT analyses. For example, where a technological advance significantly reduces the cost of control, requiring the use of cleaner fuel or additional controls may add substantial incremental costs but may still be cost effective. It may be cost-effective because the total costs or combined costs are, on average cost per ton of pollutant reduced, still within the range of total costs being borne by others in achieving BACT. As the *Draft Manual* recognizes, cost-effectiveness must ultimately be judged by whether "total cost-effectiveness is within the normal range of acceptable BACT costs." *Draft Manual* at B.46. *See e.g. In re Hibbing Taconite Company,* PSD Appeal No. 87-3 at 8 (Adm'r July 20, 1989), (The Administrator remanded a case where the applicant argued that use of natural gas at $1300 a ton for SO_2 removal was not cost-effective, but the record showed that $1300 a ton for SO_2 removal was within the range of recent BACT determinations.)

[34] Section 52.21(b)(12) restates the definition of BACT in Section 169(3) of the Clean Air Act, 42 U.S.C. § 7479(3). Section 169(3) provides that an emissions limitation constituting BACT for each regulated pollutant shall be determined after "taking into account energy, environmental, and economic impacts and other costs * * *."

In addition, the Region's consideration of carbon dioxide[35] and hydrogen chloride emissions does not warrant further review.[36] CCE argues that various innovative technologies such as "pressurized" coal technology and "coal washing" could have been employed to limit carbon dioxide and hydrogen chloride emissions. Both carbon dioxide and hydrogen chloride are, however, unregulated pollutants. In such circumstances, the Region was not required to examine control technologies aimed at controlling these pollutants.[37] *See In re Spokane Regional Waste-to-Energy*, PSD Appeal No. 88-12 (Adm'r, June 9, 1989), at 6 n.9. ("Unless the advocated additional control technology is available for the primary purpose of controlling emissions of regulated pollutants, the permit issuer is not required to include that control technology in the BACT analysis.") Review of this issue is therefore denied.

D. *CCE's Objections To Specific Permit Conditions*

1. *The 24-hour rolling average emission limit for NOx*

Under the terms of the permit, Inter-Power must comply with "a 24-hour rolling average" emission limit for NOx. *See* PSD Permit Conditions, IX., 1., a.. CCE argues that the permit condition is not sufficiently protective given the Region's "own description of this area as marginal attainment for ozone." CCE Petition at 5. It argues that a 3-hour NOx limit should be established.

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[35] CCE argues that the use of urea injection to control nitrogen oxide will result in increased emissions of carbon dioxide. CCE Petition at 6. *See* ARI 307; Region's Response to Comments, Comment 2.4. The Region maintains that it considered the effects of urea injection on $C0_2$ and concluded that any increase in carbon dioxide levels will be minimal and does not require control. *Id.* at 2.4 and Region's Response to Petitions for Review at 22. It is well-settled that a petitioner may not simply repeat previously-made comments objecting to a permit condition but must demonstrate why the Region's response to the objections is inadequate, and therefore, the issue warrants review. *See In re LCP Chemicals - New York (division of The Hamlin Group, Inc.)*, RCRA Appeal No. 92-25, at 5 (EAB, May 5, 1993). CCE has failed to meet its burden. Therefore, review of CCE's objections based on the Region's failure to evaluate a control technology for carbon dioxide emissions is denied.

[36] To the extent that CCE contends that EPA should regulate hydrogen chloride and carbon dioxide under the PSD program (CCE Petition at 6), its arguments also fail. The Board is not the proper forum for "challenging the validity of the applicable regulations." *In re Ford Motor Co.*, RCRA Appeal No. 90-9, at 8 n.27 (Adm'r, October 2, 1991). *See also In re Suckla Farms, Inc. and City of Fort Lupton, Colorado*, UIC Appeal No.s. 92-7, 92-8, at 15 (EAB, June 7, 1993).

[37] CCE's reliance on Section 111 of the Clean Air Act, 42 U.S.C. § 7411(a)(C), to suggest that the Region was required to require coal washing as the "best technological system of continuous emission reduction" is misplaced. The statutory provision relates to new source performance standards and does not apply to the PSD requirements at 40 U.S.C. §§ 7470 *et seq.* BACT only requires that any emission limit established as BACT not "exceed the emissions allowed by any applicable standard established pursuant to Section [111]." 42 U.S.C. §7479(3).

The Region responds that a 3-hour NOx limit is not required because the EPA has not promulgated an air quality standard based on a short-term NOx concentration; and that Inter-Power's permit limitation is consistent with the current NAAQS standard, which is based on an annual average.[38] *See* 40 C.F.R. § 50.11. CCE has not provided the Board with any reason for questioning the Region's conclusion. *See In re Hadson Power 14 - Buena Vista*, PSD Appeal Nos. 92-3, 92-4 and 92-5, at 42 n.54 (EAB, October 5, 1992). *See also In re LCP Chemicals - New York (division of The Hamlin Group, Inc.)*, RCRA Appeal No. 92-25, at 4 (EAB, May 5, 1993). In these circumstances, CCE has not demonstrated a basis for review of the NOx limitation.

2. *The 3-Hour Short Term NAAQS for SO_2*

CCE argues that the Region also erred in ignoring its request for a 1-hour SO_2 limit. The Region responds that EPA has not promulgated a one-hour NAAQS for SO_2, and therefore it did not err in rejecting CCE's request. For the reasons stated above with respect to the NOx standard, we conclude that the issue does not present a basis for review.

3. *The Lye Brook Wilderness Requirements*

CCE objects to Condition XV of the permit, which provides that the modeled annual average impacts associated with the Halfmoon and GE facilities in combination may not exceed the modeled air quality impacts of the GE facility alone between 1986 and 1990. This condition was included pursuant to Section 165(d)(2)(c) of the Clean Air Act, 42 U.S.C. § 7475(d)(2)(C), to assure that SO_2 emissions from the Halfmoon facility will not adversely impact air quality related values in the Lye Brook Wilderness Area, which has been designated a Class I area. CCE argues that the Region used the wrong baseline in setting the limit.[39] The Region responds that CCE failed to preserve the issue for review because the issue was not raised during the public comment period, as required by 40 C.F.R. § 124.13 and 40 C.F.R. § 124.19(a). Since CCE has made no demonstration to the contrary, review of this issue is denied. *See In re Sequoyah Fuels Corporation*, NPDES Appeal No. 91-12, at 4 (August 31, 1992).

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[38] Regardless of the emissions level initially determined in the course of the BACT analysis, emission limits must be made more stringent if necessary to prevent exceedances of NAAQS or PSD increments. Manual at B.54.

[39] Apparently GE replaced two oil-fired boilers with a single natural gas boiler in 1991, a change that resulted in significant SO_2 emissions reductions at the facility. CCE argues that Inter-Power should be required to take GE's SO_2 emissions reduction into account in assessing the incremental impact of Halfmoon on SO_2 emissions in the area.

CCE also objects to the Region's decision to rely on modeled impacts as a basis for the permit condition aimed at protecting air quality related values in the Lye Brook Wilderness Area. CCE argues that the Region should have instead required an actual ton-per-ton emission offset, as the Region had proposed in an earlier draft permit.[40] CCE Petition at 18. CCE contends that models can be fraught with errors and therefore should not be relied upon in setting permit limits.

In response, the Region explains that it had originally required Inter-Power to offset emissions on an actual ton-by-ton basis, because it lacked adequate data on which to base impact mitigation provisions. ARI 307; Response to Comments, Responses 6.33 and 7.1. However, after receiving modeling analysis data that indicated a 100-fold decrease in [projected] SO_2 impacts at Lye Brook, the Region concluded that an emissions limitation based on modeled impacts would be adequately protective. *Id.*

CCE has not provided the Board with any basis for questioning the Region's judgment nor has it presented any evidence to suggest that the modeling used to establish Condition XV is flawed. CCE's "mere allegation of error" is not enough to satisfy the burden established under 40 C.F.R. § 124.19. *See In re Hadson Power 14 - Buena Vista*, PSD Appeal Nos. 92-3, 92-4 and 92-5, at 43 n.54 (EAB, Oct. 5, 1992). Review of this issue is therefore denied.

4. *SO_2 Offset Requirements*

CCE Challenges Permit Condition XVI, 5, which allows Inter-Power to obtain SO_2 emissions offsets from Norlite Corporation.[41] CCE Petition at 8. CCE asserts that the offsets became available because of Norlite's decision to change fuels. This switch, CCE contends, increased Norlite's emissions of mercury and other heavy metals. CCE argues that under 40 C.F.R. § 52.21(b)(3)(vi)(c), offsets are only available if they are of "approximately the same qualitative significance for public health and welfare," and that the Region should have conducted a health risk assessment to determine the impact of these metals emissions before approving to the Norlite credit. *Id.* at 8-9. The Region responds and we agree that CCE has not documented that Norlite's fuel change has increased its heavy metals emissions or created any health concerns. Accordingly, CCE has not pointed to any record evidence that would

[40] The Region issued a revised draft permit after learning that it had relied on flawed data for the initial draft.

[41] The permit further provides that Inter-Power may not begin operations until Norlite's revised SO_2 emissions limitation becomes part of New York's State Implementation Plan (SIP).

lead us to question the Region's response. As noted above, mere allegations of concern do not present a sufficient basis for review. *In re Hadson Power 14 - Buena Vista*, PSD Appeal Nos. 92-3, 92-4 and 92-5, at 43 n.54 (EAB, Oct. 5, 1992).

CCE also challenges Permit Condition XVI-2, which provides that Inter-Power must obtain an impact credit from GE in order to meet its SO_2 NAAQS obligations. The credit is based upon GE reducing the sulfur content of its fuel oil from 1.5% to 1.3%. Condition XVI-2 further provides that Inter-Power may not begin to operate until New York State incorporates GE's new 1.3% limitation on the sulfur content of its fuel into the SIP. CCE argues that the Region violated 40 C.F.R. § 52.21(b)(3)(iii) by issuing this permit before the emissions reduction became federally-enforceable as part of the New York State SIP.

The relevance of 40 C.F.R. § 52.21(b)(3)(iii) to this issue is not apparent to the Board[42] and CCE has not cited any other statute or regulation that would invalidate the GE impact credit. Review of this issue is therefore denied.

5. *Limits Based on the Power Sales Contract*

CCE argues that "[a]ny emission limits" based on factual assumptions relating to Inter-Power's existing power sales contract are invalid because the contract must be renegotiated. CCE Petition at 4-5 and 20. Review of this issue is denied because the Region properly based its permit determination on the administrative record as of the time the permit was issued.[43] The Region was not required to anticipate the

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[42] Section 52.21(b)(3) states how to calculate whether a physical or operating change at a stationary source has resulted in a "net emissions increase" at that source. Subsection (iii) of the regulation provides that:

> (iii) An increase or decrease in actual emissions is creditable only if the Administrator has not relied on it in issuing a permit for the source under this section, which permit is in effect when the increase in actual emissions from the particular change occurs.

The provision does not relate to impact mitigation.

[43] Region II also argues that the issue is not eligible for review on procedural grounds. Region's Response to Petition at 5. It acknowledges that the issue was raised "by others" during the public comment period but claims that the Board may not consider it because it was not raised by CCE. *Id.* at 6 n.1. In this regard, the Region is not correct. The Board may grant review of any issue that was the subject of comment, whether by the petitioner or by someone else. *See* 40 C.F.R. § 124.19(a), (the petition must simply demonstrate that "any issues being raised were raised during the public comment period"); *see also In re Beckman Production Services*, UIC Appeal Nos. 92-9 to 92-16 at 12 n.13 (EAB, Jan. 24, 1994).

terms of a renegotiated power sales contract and to speculate on their potential impact. *See In re Ogden Martin Systems of Onondaga, Inc.*, PSD Appeal No. 92-7, at 4 (EAB, Dec. 1, 1992) (the permit should be reviewed based on the record at the time of its issuance).

6. *Post-operational monitoring*

CCE also argues that the Region erred by failing to require post operational monitoring in the permit. CCE Petition at 19. Our review of the record reveals that this issue was not raised during the public comment period and therefore may not be reviewed under 40 C.F.R. § 124.19. Review of this issue is denied because the issue was not preserved for review.[44]

E. *CCE's Objections To The Region's Modeling Analysis*

1. *Background sources were not properly modeled for determining compliance with NAAQS*

CCE argues that "the modeling upon which the permit is based"[45] is not valid because it was based on a faulty assumption that existing sources burn oil with no more than 1.5% sulfur content. CCE Petition at 16. It argues that the Region erroneously relied on a New York State law establishing a 1.5% limit on the sulfur content of fuel oils rather than the 2% limit allowed under the New York SIP. CCE maintains that by law the Region may rely only on the federally-enforceable 2% sulfur limit.

In its response to comments, the Region stated that according to Agency modeling guidelines, a modeling analysis may be based on data representing the "[m]aximum allowable emission limit *or* Federally enforceable permit limit" (emphasis added).[46] ARI 307; Region's Response to Comments, Responses 6.6 and 6.17. The Region states that the Agency has construed the "maximum allowable emissions limit" to include an enforceable State limit even if the limit is not part of the SIP. CCE has not pointed to any authority to suggest this construction is erroneous. Review of this issue is, therefore, denied.

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[44] Moreover, assuming the issue were preserved for review, CCE has not presented any basis to question the Region's discretionary decision not to require post-operational monitoring.

[45] We assume that CCE is challenging the Region's conclusion that the permit will not result in a NAAQS exceedance.

[46] *See* Table 9-2, *Guideline on Air Quality Models.* EPA's Air Quality Modeling Guideline is incorporated into the PSD regulation by reference.

2. *Decision not to model certain downwash effects*

CCE also argues that the Region's modeling analysis is flawed because it ignored the effects of "downwash"[47] from the Watervliet Arsenal.[48] In response, the Region maintains that "including downwash at the Watervliet Arsenal" would not have affected the permit determination. Response to Petition at 27-28; ARI 307; Region's Response to Comments, Response 6.15.[49] CCE has not identified how the consideration of downwash at the Watervliet Arsenal would have affected the permit decision. Accordingly, review of this issue is denied.

III. *CONCLUSION*

For the foregoing reasons, the BACT determination for SO_2 is affirmed and review is denied on all other issues.

So ordered.

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[47] "Downwash" is an aerodynamic effect that may occur when an emissions source has a low stack and nearby buildings trap emissions and thereby cause increased ground level concentrations of pollutants. *See* 42 U.S.C. § 7423(c) and Manual at C.43.

[48] CCE claims that a modeling analysis must take downwash into account for stacks below a prescribed height. *See* Guideline on Air Quality Models (Revised, July 1986, at 7-7 and Manual at C.43. It is not disputed that one of Watervliet's five stacks is below that height.

[49] The Region also maintains that it may exercise its judgment as to "which background sources need to be modeled in the downwash mode." Region's Response to Comments, Response 6.15. *See* Memorandum from Director, Air Quality Management Division, OAQPS, to Director, Air, Pesticides and Toxics Division, Region 3, March 31, 1989), stating that judgment is often necessary to determine when downwash should be taken into account in a modeling analysis.