

**IN RE AES PUERTO RICO L.P.**

PSD Appeal Nos. 98–29, 98–30 &amp; 98–31

***ORDER DENYING REVIEW***

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Decided May 27, 1999

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## Syllabus

This decision addresses three petitions for review filed with the Environmental Appeals Board challenging the Clean Air Act prevention of significant deterioration (“PSD”) permit issued by EPA Region II to AES Puerto Rico L.P. (“AES”) for construction of a 454 megawatt coal-fired power plant in Guayama, Puerto Rico.

Petitioners challenge aspects of the Region’s permit decision relating to sulfur dioxide (“SO<sub>2</sub>”), fine particulate matter (“PM<sub>10</sub>”), and environmental justice.

Held: Review is denied of the petitions for review for the following reasons:

- It was appropriate for the Region to use the permitted SO<sub>2</sub> emission rate in the SO<sub>2</sub> air quality analysis even though the emission rate was based on a unique combination of three SO<sub>2</sub> controls. Each of the three controls has been previously demonstrated but not used in this particular combination. The Region adequately justified its decision to require the particular combination of controls at issue and thus, it was proper to use the permitted emission rate in the air quality analysis. (Section II.C.1.)

- Alternative SO<sub>2</sub> modeling results presented in Petition No. 98–29 and the critique of AES’s SO<sub>2</sub> modeling fail to establish that the SO<sub>2</sub> modeling conducted by AES involved clear error of fact or law or an important policy matter that warrants review. (Section II.C.2.)

- The SO<sub>2</sub> multi-source modeling analysis contained in Petition No. 98–29 was not preserved for review because the analysis was not submitted to the Region during the public comment period. (Section II.C.2.)

- The Region acted within its discretion in not requiring a multi-source air quality analysis for SO<sub>2</sub> in that the proposed facility’s predicted SO<sub>2</sub> impact does not exceed “significant impact level” thresholds found in Agency guidance. The Region’s decision not to require multi-source modeling in this case is supported both by established policy regarding significant impact level thresholds and the quality of the modeling that produced the SO<sub>2</sub> impact estimate for the proposed facility. (Section II.C.3.)

- The Region validly applied the regulatory exemption from preconstruction monitoring of ambient SO<sub>2</sub> levels in this case. An exemption was justified because the predicted SO<sub>2</sub> impacts from the proposed facility are lower than the *de minimis* monitoring levels established in the PSD regulations. In addition, the Region’s decision to require an

evaluation of SO<sub>2</sub> air quality in Guayama after permit issuance and its accompanying commitment to promptly address any actual SO<sub>2</sub> air quality problems that may be discovered appropriately responds to petitioners' concerns about the SO<sub>2</sub> attainment status of Guayama. (Section II.C.4.)

- The Region made use of appropriate PM<sub>10</sub> background monitoring data in the PM<sub>10</sub> air quality compliance demonstration. Additional data identified by petitioners postdate the permit application and also have been flagged for quality assurance/quality control purposes. Thus, the Region's choice of PM<sub>10</sub> monitoring data does not indicate a clear error or an important policy matter that warrants a grant of review. (Section II.D.1.)

- The PM<sub>10</sub> emission limit contained in the final permit decision reflects a reasonable approach on the part of the Region to ensure that the permit controls the condensable fraction of PM<sub>10</sub>. The final permit limit was based on the fact that little guidance was available regarding the achievability of a PM<sub>10</sub> emission limit (that includes both condensable and non-condensable particulate matter) for this type of source. (Section II.D.2.)

- The environmental justice concerns raised in the petitions for review were adequately addressed by the Region during the permit process. The Region prepared an environmental justice analysis and incorporated additional conditions into the final permit decision as a tangible response to the community's concerns about air quality and to fulfill the goals of the Executive Order on environmental justice. (Section II.E.)

***Before Environmental Appeals Judges Ronald L. McCallum, Edward E. Reich, and Kathie A. Stein.***

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

EPA Region II issued a federal prevention of significant deterioration ("PSD") permit, pursuant to Clean Air Act ("CAA") § 165, 42 U.S.C. § 7475, to AES Puerto Rico L.P. ("AES") on September 18, 1998, authorizing construction of a 454-megawatt coal-fired power plant in Guayama, Puerto Rico. The Environmental Appeals Board ("the Board") received petitions for review of the Region's PSD permit decision from: Dr. Jorge E. González of the University of Puerto Rico—Mayaguez (Petition No. 98–29), Sur Contra la Contaminación ("SURCCo"), a local community organization (Petition No. 98–30), and Pedro J. Saade Llorens, on behalf of five individuals (Petition No. 98–31). The petitioners challenge aspects of the Region's permit decision relating to sulfur dioxide ("SO<sub>2</sub>"), particulate matter less than 10 micrometers in diameter ("PM<sub>10</sub>"), and environmental justice.

## I. BACKGROUND

The proposed AES facility would be the first coal-fired power plant in Puerto Rico. The facility is designed with two circulating fluidized bed ("CFB") boilers with a combined maximum heat input rate of 4,922.7 million British Thermal Units per hour (MMBTU/hr). The plant will produce both electricity to be sold to Puerto Rico's electric utility and steam to be

used by local industries. The proposed facility is subject to PSD review because it is a major new stationary source of pollutants including nitrogen oxides (“NO<sub>x</sub>”), SO<sub>2</sub>, carbon monoxide (“CO”), and fine particulate matter (“PM<sub>10</sub>”). See 40 C.F.R. § 52.21(b)(1)(i)(a) (defining major stationary source to include “fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input” that will emit more than 100 tons per year of any pollutant subject to PSD regulation).

PSD review is a preconstruction permitting program for major stationary sources located in areas where ambient air quality meets or exceeds national ambient air quality standards (“NAAQS”).<sup>1</sup> See *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 111–12 (EAB 1997). These areas are referred to as “attainment” areas. PSD review also applies in areas that cannot be classified as either “attainment” or “non-attainment” areas. Such areas are termed “unclassifiable” areas. *Kawaihae*, 7 E.A.D. at 112. Guayama, Puerto Rico is considered to be in attainment for SO<sub>2</sub>, unclassifiable/attainment for CO and nitrogen dioxide (“NO<sub>2</sub>”), and unclassifiable for PM<sub>10</sub>. 40 C.F.R. § 81.355. Therefore, a PSD permit is required before a facility such as the proposed AES facility may be constructed. Two of the most critical elements of the PSD permit process are: 1) the requirement that emissions of certain pollutants be controlled by “best available control technology” (“BACT”)<sup>2</sup> and 2) that an air quality analysis be conducted to determine whether a proposed project would cause or contribute to exceedances of NAAQS or PSD increments.<sup>3</sup> See *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 123–24 (EAB 1999).

The PSD permit issued to AES by the Region contains BACT limits on SO<sub>2</sub> emissions by requiring a combination of three control strategies: 1) CFB boilers with limestone injection, 2) low sulfur coal (maximum sulfur content of 1.0%), and 3) an add-on dry scrubber. See Permit ¶¶ VI.1,

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<sup>1</sup> NAAQS have been established for six “criteria” pollutants: sulfur dioxide, particulate matter, carbon monoxide, ozone, nitrogen dioxide, and lead. 40 C.F.R. §§ 50.4–50.12.

<sup>2</sup> The PSD regulations define BACT as follows:

*Best available control technology* means an emissions limitation \* \* \* based on the maximum degree of reduction for each pollutant subject to regulation under [the Clean Air Act] which would be emitted from any proposed major stationary source \* \* \* which the Administrator, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source \* \* \*.

40 C.F.R. § 52.21(b)(12).

<sup>3</sup> PSD increments are maximum allowable increases in pollutant concentrations permissible by regulation. See 40 C.F.R. § 52.21(c). See *infra* Section II.D.1 for a discussion of the PSD increments applicable in this case.

VII.2. Emissions of particulate matter and PM<sub>10</sub> from the CFB boilers are to be controlled by an electrostatic precipitator (“ESP”). *Id.* ¶ VII.3. The requirements for control of NO<sub>x</sub>, CO and other pollutant emissions are not at issue in this appeal.

The petitioners’ primary focus is on the air quality analyses conducted during the permitting process for SO<sub>2</sub>. All three petitioners believe that Region II should have required a full impact analysis, including multi-source modeling, for SO<sub>2</sub>. González Petition at 10; SURRCo Petition at 10; Saade Llorens Petition at 4. Dr. González conducted alternative SO<sub>2</sub> air quality modeling and submitted the results with his petition for review. SURRCo and Mr. Saade Llorens distrust the air quality analysis performed by AES and the Region because it is contingent upon proper operation of the trio of SO<sub>2</sub> emission controls specified in the permit. They point out that this combination of controls has never been tested at another facility. SURRCo Petition at 12; Saade Llorens Petition at 2. The petitioners also question whether Guayama is indeed in attainment for SO<sub>2</sub> and request preconstruction ambient air quality monitoring. González Petition at 10; SURRCo Petition at 23.

SURRCo also challenges the adequacy of the air quality analysis for PM<sub>10</sub> as well as the limit on PM<sub>10</sub> emissions from the CFB boilers. SURRCo Petition at 27, 29. SURRCo claims that local PM<sub>10</sub> data indicate that compliance with the NAAQS for PM<sub>10</sub> will be threatened by the AES facility. *Id.* at 27. SURRCo also questions the BACT determination for PM<sub>10</sub> from the CFB boilers. The numerical emissions limit was changed from the draft to the final permit, and SURRCo contends that the change constitutes an illegitimate increase in the PM<sub>10</sub> emission rate. *Id.* at 29.

The third item at issue in this case is an environmental justice challenge contained in SURRCo’s petition claiming that Region II’s permit decision for this facility does not meet the standards of the Executive Order on environmental justice.<sup>4</sup> SURRCo Petition at 30–33. The proposed facility is to be located in an industrial area of Guayama, a city on the south coast of Puerto Rico. According to the petitioners, Guayama is a low-income community and home to several pharmaceutical and petrochemical plants. *Id.* at 30–31. SURRCo believes that some of Region II’s decisions regarding the air quality analysis conducted for this facility represent a failure of environmental justice. *Id.* at 32.

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<sup>4</sup> See Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb. 16, 1994). The Executive Order is discussed *infra* Section II.E.

At the request of the Board, Region II filed a response to the three petitions for review. U.S. EPA Region II, Response to Petitions for Review (“Region’s Response”). The Region also provided relevant portions of the administrative record, including its response to comments document. AES Puerto Rico Cogeneration Project Responsiveness Summary (“RS”). In addition, the Board granted a request by AES to file a response to the petitions for review. See AES Puerto Rico L.P., Memorandum of Law in Opposition to Petitions for Review (“AES Response”).

## II. DISCUSSION

### A. Standard of Review

The regulation governing this proceeding provides that the Board may grant review of a permit decision if some aspect of the decision was based on either a clearly erroneous finding of fact or conclusion of law, or if the decision involves an important matter of policy or exercise of discretion that warrants review. 40 C.F.R. § 124.19(a); see *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 126–27 (EAB 1999). The Board is guided by language in the preamble to section 124.19 that states the “power of review should be only sparingly exercised,” and “most permit conditions should be finally determined at the Regional level.” 45 Fed. Reg. 33,290, 33,412 (May 19, 1980); accord *Knauf*, 8 E.A.D. at 127; *In re Hawaii Elec. Light Co.*, 8 E.A.D. 66, 71 (EAB 1998) (“*HELCO*”). The petitioners bear the burden of establishing that review is warranted. *HELCO*, 8 E.A.D. at 71; *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 114 (EAB 1997).

### B. Timeliness

Petitions for review of a permit decision must be filed with the Board within thirty (30) days after the decision is issued by the permitting authority. See 40 C.F.R. § 124.19(a). Failure to submit a timely petition is grounds for dismissal. See, e.g., *In re Envotech, L.P.*, 6 E.A.D. 260, 266 (EAB 1996); *In re Beckman Prod. Servs.*, 5 E.A.D. 10, 16 (EAB 1994). In this case, Region II issued its permit decision on September 18, 1998. On September 21, 1998, hurricane “Georges” hit Puerto Rico and caused severe disruptions in power, communications, and other basic services. Within the original thirty-day appeals period, the Board received requests from SURCCo and Mr. Saade Llorens for extensions of time in which to file petitions for review. In light of the extraordinary circumstances created by the hurricane and its aftermath, the Board granted a rare extension of the appeals deadline to November 18, 1998. Order Granting

Extension of Time (EAB, Oct. 14, 1998). The extension order specifically stated that “[p]etitions must be *received* by the Board on or before Wednesday, November 18, 1998.” *Id.* at 2 (emphasis added).

It is a petitioner’s responsibility to ensure that filing deadlines are met, and the Board will generally dismiss petitions for review that are received after a filing deadline. *See, e.g., In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 123 (EAB 1997); *Envotech*, 6 E.A.D. at 266; *Beckman*, 5 E.A.D. at 15–16. The Board’s expectation of timely filings is especially heightened where a previous extension of the deadline has been granted. The Board will relax a filing deadline only where special circumstances exist. *In re B&B Wrecking & Excavating, Inc.*, 4 E.A.D. 16, 17 (EAB 1992). In this case, Dr. González’s petition was received by the Board on November 18, 1998.<sup>5</sup> SURCCO’s petition arrived on November 19, 1998, and the petition submitted by Mr. Saade Llorens was received by the Board on November 30, 1998.

The petition filed by SURCCO arrived one day after the deadline established by the Board due to aircraft problems experienced by Federal Express, the overnight package delivery service selected by SURCCO.<sup>6</sup> SURCCO promptly informed the Board of the unanticipated delay and provided a copy of a letter of apology from Federal Express explaining the reason for the late delivery. Under these special circumstances, we agree to treat SURCCO’s petition as timely.

The petition filed by Mr. Saade Llorens was also affected by the Federal Express aircraft problems that delayed the SURRCO petition. However, Mr. Saade Llorens’ petition was further delayed in that the petition was addressed to Region II in New York City rather than to the Board in Washington, D.C. Once the error was discovered by Region II personnel, the petition was forwarded to the Board. Consequently, the petition was not received by the Board (and therefore was not filed) until November 30, 1998, twelve days after the filing deadline. The reason for the error in delivery is not immediately apparent. The Region’s

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<sup>5</sup> A letter from the Clerk of the Board acknowledging receipt of Dr. González’s petition for review and requesting a response from Region II erroneously stated that the petition was received on November 19, 1998. The original petition was in fact received on November 18, 1998, and a second copy was received on November 19, 1998. The Board’s receipt of the original petition for review establishes the official filing date, and in this case, the petition from Dr. González was timely filed.

<sup>6</sup> SURCCO’s petition and exhibits were tendered to Federal Express on November 17, 1998, and but for Federal Express’s internal problems, should have been delivered to the Board in a timely fashion on November 18, 1998.

September 18, 1998 permit decision explains the procedures for filing a petition for review with the Board and clearly sets forth the addresses to be used for deliveries to the Board by either regular mail or “Federal Express Mail.” Further, Mr. Saade Llorens was aware that the Board has jurisdiction over this matter as he had previously requested an extension of time to file a petition for review in a letter that was properly sent directly to the Board. It appears that the incorrect address on the petition for review was an unfortunate oversight by the petitioner that nonetheless caused a substantial delay in filing. Consistent with our rulings in other cases involving late filings, the petition for review filed by Mr. Saades Llorens is hereby dismissed as untimely.<sup>7</sup> *See, e.g., Apex Microtechnology, Inc.,* EPCRA Appeal No. 93–2 (EAB, July 8, 1994) (appeal was dismissed as untimely when filing received by the Board after the filing deadline had been originally sent to a Regional Hearing Clerk in error).

### *C. Issues Pertaining to Sulfur Dioxide (SO<sub>2</sub>) Emissions and Air Quality Analysis*

The petitions for review are largely focused on the potential impacts of SO<sub>2</sub> emissions from the proposed AES facility. The PSD regulations require that an air quality analysis be performed for each regulated pollutant that a new source has the potential to emit in significant amounts. 40 C.F.R. § 52.21(m)(1)(i)(a). The significance level for SO<sub>2</sub> is 40 tons/year. 40 C.F.R. § 52.21(b)(23). The AES facility has a potential to emit 453 tons/year of SO<sub>2</sub>. U.S. EPA Region II, Project Description for AES Puerto Rico L.P. at 3. Project Description at 3. Thus, AES prepared an SO<sub>2</sub> air quality analysis. Petitioners are dissatisfied with several aspects of the AES analysis and have either offered alternative analyses or have requested that additional analyses be conducted prior to final approval of the AES permit. Petitioners’ objections are in part motivated by their concern about ambient SO<sub>2</sub> levels in Guayama and limited current data quantifying those levels.

An air quality analysis generally proceeds in stages. EPA has issued a guidance document that outlines various elements of the PSD review process, including the air quality analysis. New Source Review Workshop

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<sup>7</sup>We note that the issues raised in Mr. Saades Llorens’ petition for review are largely covered in the other two petitions.

Manual (Draft Oct. 1990) (“NSR Manual”).<sup>8</sup> The air quality analysis typically begins with a preliminary analysis that uses modeling to predict air quality impacts based solely on the proposed facility’s emissions. *See* NSR Manual at C.24. The preliminary analysis does not take into account existing ambient air quality or emissions from other sources. *Knauf*, 8 E.A.D. at 149. The results are used to determine whether additional analyses are necessary and to define the scope of any additional analyses.

The results of the preliminary analysis are compared to a set of values often referred to as “monitoring *de minimis* levels” because they are used to determine whether a permit applicant may be exempted from the requirement to obtain preconstruction ambient air monitoring data. *In re EcoEléctrica*, L.P., 7 E.A.D. 56, 61–62 (EAB 1997). The PSD regulations contain a list of the monitoring *de minimis* levels and provide that a permit applicant may be exempted from preconstruction monitoring requirements if air quality impacts from the proposed source are less than the *de minimis* levels. 40 C.F.R. § 52.21(i)(8)(i). The monitoring *de minimis* level for SO<sub>2</sub> is 13 µg/m<sup>3</sup> (24-hour average). *Id.* The maximum modeled SO<sub>2</sub> (24-hour average) impact from the proposed AES facility is 4.97 µg/m<sup>3</sup>. RS at 102. Thus, AES qualifies for the exemption from preconstruction ambient air monitoring for SO<sub>2</sub>. AES requested such an exemption from Region II and the Region determined that an exemption was appropriate. *See* Region’s Response at 42.

According to the approach outlined in the NSR Manual, the results of the preliminary analysis may also be used to determine whether a full impact analysis, which includes multi-source modeling, should be conducted. NSR Manual at C.25. The modeled pollutant concentration from a proposed source is compared to a set of significance levels found in the NSR Manual. *Id.* at C.28. These levels are referred to as “significant ambient impact levels” or “significant impact levels” (“SILs”). If the modeled impacts from the proposed facility are less than the SIL for a particular pollutant, the permit applicant is generally not required to conduct a full impact analysis. Table 1 presents AES’s SO<sub>2</sub> modeling results and the corresponding SILs for SO<sub>2</sub> (at various averaging times):

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<sup>8</sup> Although the NSR Manual is not entitled to the same weight as a binding regulation, the Board often refers to the NSR Manual for a statement of the Agency’s thinking on certain PSD issues. *In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 129 n.13 (EAB 1999); *In re Hawaii Elec. Light Co.*, 8 E.A.D. 66, 72 n.7 (EAB 1998).



TABLE 1  
SO<sub>2</sub> Air Quality Impacts from AES

Averaging Time	AES Modeling Results <sup>9</sup> (in µg/m <sup>3</sup> )	Significant Impact Level <sup>10</sup> (in µg/m <sup>3</sup> )
Annual	0.55	1
24-hour	4.97	5
3-hour	20.0	25

As can be seen from the table, the modeled SO<sub>2</sub> impacts from the proposed AES facility are all less than corresponding SILs. Thus, the Region did not require, and AES did not conduct, a full impact analysis for the proposed facility.

Petitioners do not dispute that PSD regulations and guidance authorize the Region's decisions to exempt AES from preconstruction monitoring and to accept the preliminary air quality analysis in lieu of a full impact analysis. However, the petitioners argue that the Region should have used its discretion to require preconstruction monitoring and a full impact analysis in light of a variety of factors that, in petitioners' opinion, warrant these studies. In addition, the petitioners specifically challenge the validity of the AES modeling. Dr. González has conducted his own modeling and submits the results as support for his argument that AES's modeling grossly underestimates the potential SO<sub>2</sub> impacts from the proposed facility. We discuss petitioners' arguments in support of additional SO<sub>2</sub> analyses below.

1. *The Combination of SO<sub>2</sub> Controls to Be Used on the Circulating Fluidized Bed Boilers Are Untested*

In the course of assessing options for control of SO<sub>2</sub> from the boilers, the Region determined that a combination of three controls would constitute the best available control technology ("BACT") for this facility. The required controls include: 1) circulating fluidized bed boilers with limestone injection, 2) low sulfur (<1% sulfur) coal, and 3) a dry scrubber. RS at 3. The resulting emission limit is 0.022 lb/MMBTU. Permit

<sup>9</sup> See RS at 102.

<sup>10</sup> See NSR Manual at C.28.

¶ VIII.4—CFB.a.; RS at 2. This emission rate was used to determine SO<sub>2</sub> impacts from the proposed facility for purposes of the preliminary air quality analysis. See *supra* Table 1. Petitioners do not believe that it is appropriate to presume that AES's emissions will meet the emission limit specified in the permit in light of the fact that the three required SO<sub>2</sub> controls have not previously been used in combination. SURCCo Petition at 12. Petitioners believe that the preliminary air quality analysis should have taken into account emission rates in excess of the BACT limit.

The Region and AES defend the BACT determination as a combination of control strategies that will result in stringent limits on SO<sub>2</sub> emissions. AES states that the trio of controls arose out of its desire to “build one of the cleanest coal-fired power plants in the world.” AES Response at 6. The Region claims that the emission limit of 0.022 lb/MMBTU is technically feasible even if it is lower than the emission limits at previously permitted facilities. Region's Response at 48–50.

In response to comments about the feasibility of the SO<sub>2</sub> control strategy, the Region pointed out that CFB boilers with limestone injection have been paired with low sulfur coal in a number of previously permitted projects. This combination of just two controls results in very low SO<sub>2</sub> emission rates. RS at 3. At the same time, add-on dry scrubbers “are recognized SO<sub>2</sub> pollution control equipment with a proven track record.” *Id.* Generally, dry scrubbers have not been used with CFB boilers because the CFB boiler design inherently reduces SO<sub>2</sub> emissions and a dry scrubber is a costly addition. However, there is no technological reason that would prevent use of a dry scrubber on CFB boilers, and the Region expects that such a scrubber will successfully provide additional SO<sub>2</sub> removal.<sup>11</sup> *Id.*; Region's Response at 51. Further, the Region asserts that the reason the combination of three SO<sub>2</sub> control strategies required by this permit have not been used before is due to the costs involved rather than any technological feasibility problem. RS at 3; Region's Response at 51.

The petitioners contend that the only reason AES proposed this combination of SO<sub>2</sub> controls was to avoid the obligation to prepare a full impact air quality analysis. SURCCo Petition at 18, att. 2. The controls reduce the maximum permitted SO<sub>2</sub> emissions from the proposed facility to the point where SO<sub>2</sub> impacts attributable to the facility are at levels

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<sup>11</sup> The Region acknowledges that the typical removal efficiency for dry scrubbers of 70%–90% may not be achieved at the AES facility because the concentration of SO<sub>2</sub> coming into the scrubbers will be lower than at other facilities due to AES's use of CFB boilers and low sulfur coal. Region's Response at 51 n.30. However, in order to meet the permitted SO<sub>2</sub> emission limit, the Region calculates that the dry scrubber at the AES facility would only have to operate at a removal efficiency in the 40%–45% range. *Id.* at 50.

below the SILs. Since EPA uses the SILs to guide its decision as to whether a full impact analysis should be performed, one consequence of the selected SO<sub>2</sub> controls and emission limit is that AES was able to forego additional air quality analyses in its permit application.

The concern articulated in SURCCo's petition for review was addressed by the Region in the Responsiveness Summary. The Region explained that the SO<sub>2</sub> emission rate in AES's permit involves three methods of controlling SO<sub>2</sub> emissions and is federally enforceable. RS at 26, 40. These stringent controls on SO<sub>2</sub> emissions involve a "real decrease" in the potential impacts from the facility. *Id.* at 26. As a result, air quality will be better than it would have been without the combination of controls. *Id.* at 40. The Region argues that "it is within the applicant's prerogative to accept lower emission limits so that the resultant impacts are below the significant impact level." Region's Response at 24.

We do not disagree with the Region's assessment on this issue. This permit requires a level of SO<sub>2</sub> control that appears to be unprecedented for this type of facility. Consequently, the Region's decision breaks new ground on potentially available control options for similar facilities and may be replicated, yielding beneficial decreases in SO<sub>2</sub> emissions at other facilities. In this respect, the BACT determination is to be commended. In addition, the emission limit is an enforceable standard.<sup>12</sup> It is legitimate for the air quality modeling to reflect the actual manner in which the facility is required to operate. Because the Region has adequately justified its BACT determination for SO<sub>2</sub> from the boilers, it was proper to use the permitted emission limit for SO<sub>2</sub> in the air quality analysis. We find no clear error of fact or law or an important matter of policy in the Region's decision to use the permitted emission rate for SO<sub>2</sub> in the air quality analysis. Therefore, we deny review of this issue.

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<sup>12</sup> When a permit is issued, the permitting authority expects that the permittee will achieve the specified emission limits. Any violation of those limits is subject to a subsequent enforcement action. See CAA § 113, 42 U.S.C. § 7413. See also *In re Kawaihae Cogeneration Project*, 7 E.A.D. 107, 128 (EAB 1997) (denying review of a challenge to a so-called "unproven" air pollution control technology and noting the permitting authority's assurance that failure to comply with the permit emission limit would subject the permittee to an enforcement action).

## 2. Technical Challenges to AES's SO<sub>2</sub> Air Quality Modeling

The González petition raises several technical challenges to the SO<sub>2</sub> modeling conducted by AES. Dr. González discusses alleged flaws in the AES modeling protocol and offers alternative modeling results from his own effort to model SO<sub>2</sub> impacts from the proposed facility. Dr. González also presents the results of multi-source modeling that he performed. He claims, through the results of his modeling, that the SO<sub>2</sub> NAAQS may be threatened in Guayama. González Petition at 7.

The initial response from the Region and AES with regard to the alternative modeling results contained in Dr. González's petition is that at least some of his results and analyses were not submitted to the Region during the public comment period and therefore these arguments may not be raised for the first time on appeal. Region's Response at 25–26; AES Response at 14. The regulations governing the permit process require that "all persons \* \* \* who believe any condition of a draft permit is inappropriate \* \* \* must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period." 40 C.F.R. § 124.13. In addition, the provision that provides for appeal of permit decisions to the Board requires petitioners to demonstrate "that any issues being raised [on appeal] were raised during the public comment period \* \* \* to the extent required by these regulations." *Id.* § 124.19(a). In order to preserve an issue for review, these regulatory requirements must be satisfied. *In re Maui Elec. Co.*, 8 E.A.D. 1, 7 (EAB 1998); *EcoEléctrica*, 7 E.A.D. at 63–64 n.9. The reason that issues must first be raised during the public comment period is to ensure that the permit issuer has an opportunity to adjust its permit decision or to provide an explanation of why no adjustment is necessary. The Board has often denied review of issues that have not been properly preserved for review. *See, e.g., Maui Elec.*, 8 E.A.D. at 9–10 (petitioner's appeal of BACT for SO<sub>2</sub> was not preserved for review when comments submitted to permitting authority focused on BACT for NO<sub>x</sub> not BACT for SO<sub>2</sub>); *In re Florida Pulp & Paper Ass'n*, 6 E.A.D. 49, 56–57 (EAB 1995) (petitioner's comment on one section of a draft permit was insufficient to preserve for review a challenge to another permit provision). *But cf. EcoEléctrica*, 7 E.A.D. at 63–64 n.9 (Board declined to deny review of "data-currentness" issue due to a failure to raise the issue during the public comment period because the data-currentness issue was sufficiently related to other issues that were properly preserved for review).

Dr. González filed comments on the draft permit that included alternative modeling of AES's SO<sub>2</sub> impacts, including a comparison of those impacts to the SO<sub>2</sub> SILs. Dr. González's petition for review renews some

of the arguments and analyses regarding an appropriate estimation of SO<sub>2</sub> impacts from the proposed AES facility. To the extent that Dr. González's petition addresses his previous comments and the Region's response thereto, we find that those issues are preserved for review and properly before us.

The petition also contains results of a multi-source modeling exercise. Multi-source modeling is different from the modeling of AES emissions alone that Dr. González submitted during the public comment period. Multi-source modeling involves estimation of pollutant concentrations in ambient air, taking into account not only emissions from AES, but also certain other sources and background concentrations. The multi-source modeling information in Dr. González's petition for review was not submitted to the Region during the public comment period and is sufficiently distinct from the modeling of the proposed AES facility alone that it constitutes a new issue or argument not previously presented to the Region. Dr. González has not established that the multi-source modeling analysis was not reasonably ascertainable during the public comment period. As such, the multi-source modeling information is not properly before us in this appeal, and we will not review the details of that analysis.<sup>13</sup> The following discussion addresses those portions of the González petition that have been properly preserved for review.

Dr. González first notes that the air quality model used by AES to predict pollutant concentrations in complex terrain,<sup>14</sup> CTDMPLUS, has not been calibrated for tropical conditions such as exist in Puerto Rico. González Petition at 2. Dr. González recommends that EPA conduct a calibration process before using CTDMPLUS to model conditions in Puerto Rico. *Id.* He also points out that an alternative model, referred to as the Puerto Rico Air Quality Model ("PRAQM"), has been calibrated in Puerto Rico. *Id.* The Region describes CTDMPLUS as "the most refined complex

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<sup>13</sup> Petitioners' general argument about the need for multi-source modeling (i.e., a full impact analysis) was raised during the public comment period and therefore was preserved for review. See *infra* Section II.C.3. It is only the specific modeling results submitted by Dr. González that have not been preserved.

<sup>14</sup> Air quality models are organized into various categories based on the characteristics of the source, area, and pollutants to be modeled. Two of the most common model categories are those for "simple terrain" and "complex terrain." For purposes of air quality modeling in the PSD program, EPA defines "simple terrain" as "an area where terrain features are lower in elevation than the top of the stack of the source." 40 C.F.R. pt. 51 app. W ("Guideline on Air Quality Models") § 4.1. "Complex terrain" is defined as "terrain exceeding the height of the stack." *Id.* § 5.1. The modeling conducted by AES as part of its permit application made use of models for both simple terrain and complex terrain.

terrain EPA-approved model.” Region’s Response at 22–23. AES notes that the CTDMPLUS has undergone enhancements since it was first introduced such that it can be used for unstable atmospheric conditions. AES Response at 17.

The PSD regulations generally require use of air quality models specified in EPA’s Guideline on Air Quality Models, 40 C.F.R. pt. 51 app. W. 40 C.F.R. § 52.21(I)(1). The regulations also permit substitution of a different model in cases where the preferred model is inappropriate. *Id.* § 52.21(I)(2). Any model substitution must be approved by the permitting authority. *Id.* In this case, CTDMPLUS is the preferred model for predicting pollutant concentrations in complex terrain. Guideline on Air Quality Models § 5.1, app. A.9. PRAQM is not mentioned in the Guideline on Air Quality Models and none of the parties to this case sought Region II’s approval to use an alternative model. To the extent that petitioners are challenging the use of CTDMPLUS, review is denied on that issue. Petitioners have not established either a clear error of law or fact or an important matter of policy that warrants review.

Dr. González also challenges AES’s modeling results based on the preferred models. Dr. González provided alternative modeling results in both his comments to the Region and in his petition for review. *See* RS at 44–48; González Petition at 3–5. Dr. González submits these results to support the proposition that the SO<sub>2</sub> impacts from the proposed facility will exceed the SILs, despite the Region’s conclusions to the contrary.

The Region provided a detailed and thorough response to the alternative modeling submitted during the public comment period. RS at 48–50. The Region pointed out that Dr. González’s alternative modeling did not use CTDMPLUS for complex terrain, but another EPA-approved model called COMPLEX 1. RS at 49. The difference between COMPLEX 1 and CTDMPLUS is that COMPLEX 1 is a screening model for complex terrain and CTDMPLUS is a refined model for complex terrain. The refined model, CTDMPLUS, requires more site-specific terrain and meteorological data. *Id.* at 50. The Region concluded that the modeling results produced by the CTDMPLUS model as provided by AES appropriately predicted SO<sub>2</sub> impacts for the proposed facility.<sup>15</sup> *Id.* The predicted SO<sub>2</sub> impacts were all below the SILs.

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<sup>15</sup> We note that AES was required to collect one year of on-site meteorological data for use in the air quality modeling exercise. RS at 27. These data were used in the CTDMPLUS model and as such, AES’s modeling results reflect a relevant and representative record of atmospheric conditions.

In his petition for review, Dr. González states that he performed a “sensitivity analysis” on the CTDMPLUS protocols used by AES. González Petition at 4. Dr. González challenges the CTDMPLUS results because the model inputs used an SO<sub>2</sub> emission rate equal to the rate specified by the permitted emission limit. Dr. González calculated potential SO<sub>2</sub> impacts for emission rates higher than the permitted rate. *Id.* at 5. He notes that “when the SO<sub>2</sub> base emission rate \* \* \* is exceeded, significant levels [SILs] are exceeded.” *Id.* The SO<sub>2</sub> emission rate is dependent upon the sulfur content of the coal and the efficiency of the sulfur removal technology. Dr. González believes that it is unlikely that AES will be able to effectively control these two factors and therefore concludes that AES’s SO<sub>2</sub> emissions will have a significant impact on the surrounding area.

The scenarios modeled by Dr. González presume that AES will not operate within the established permit limits. As such, this argument is similar to the issue addressed *supra* Section II.C.1., regarding the achievability of the BACT limit for SO<sub>2</sub>. While Dr. González may be correct that AES does not have much room for error in controlling the sulfur content of the coal and the operation of the sulfur removal equipment, the SO<sub>2</sub> permit limit requires AES to avoid errors that would result in a permit violation. If AES operates the facility in accordance with the permit requirements, the SO<sub>2</sub> impacts are predicted to be less than the SO<sub>2</sub> SILs. Because AES is expected and required to operate the facility in such a fashion, it is appropriate to rely upon modeling results that presume compliance.

Dr. González challenges another element of the AES modeling, namely the number and placement of receptors.<sup>16</sup> González Petition at 3. Although both the Region and AES argue that the receptor placement issue was not properly preserved for review because it was not raised during the public comment period, we believe that it is sufficiently related to Dr. González’s critique of AES’s SO<sub>2</sub> modeling for the proposed facility.<sup>17</sup>

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<sup>16</sup> “Receptors are locations at which ambient air quality is measured or estimated.” Region’s Response at 26 n.9.

<sup>17</sup> In his comments submitted to the Region during the public comment period, Dr. González included results from a modeling scenario using different receptor heights. Dr. González pointed out how slight changes in a modeling scenario, such as a change in receptor height, changes the overall estimation of AES’s SO<sub>2</sub> impact. Dr. González’s petition for review contains a further analysis of how receptor variables affect the estimated SO<sub>2</sub> impact for the AES facility. The challenge articulated in the petition for review, regarding number and placement of receptors, is not identical to the issue raised in Dr. González’s comments, but it is closely related. It is a close call as to whether the issue raised in the petition for review is sufficiently related to the issue raised during the public comment period in order to be considered preserved for review. *See EcoEléctrica*, 7 E.A.D. at 63–64 n.9. However, in an exercise of our discretion, we decline to deny review of the receptor issue based on an alleged failure to preserve the challenge.

Dr. González performed an air quality analysis using what he terms “a large number of receptors” (i.e., over 400). *Id.* For this analysis, Dr. González used the same air quality model and the same stack conditions that AES used. Dr. González presents results which he claims demonstrate that the SO<sub>2</sub> SILs will be exceeded by the proposed facility. *Id.* at 3–4. He believes that AES would have also generated such results had AES considered more receptors in its analysis. *Id.* at 5.

Both AES and the Region respond to Dr. González’s results. AES points out that while Dr. González used over 400 receptors, it used approximately 1,250 receptors in its analogous modeling exercise. AES Response at 19. The Region explains that although Dr. González employed the same model as used by AES, he did not follow the model protocol in the placement of his receptors. Region’s Response at 27. In particular, Dr. González did not assign receptor locations based upon the actual terrain surrounding the proposed facility. Rather, Dr. González assumed uniform terrain elevations, which according to the Region, do not yield a realistic simulation. *Id.* As a result, the model yielded estimates of SO<sub>2</sub> concentrations higher than those predicted by AES. *Id.* at 28. In light of these explanations, we find that Dr. González has failed to establish that AES’s SO<sub>2</sub> modeling involved a clear error of fact or law or an important policy matter that warrants review.

### 3. Multi-Source Air Quality Analysis for SO<sub>2</sub>

Petitioners argue that the Region should have used its discretion to require AES to conduct a multi-source air quality analysis, i.e., a full impact analysis, for SO<sub>2</sub>. González Petition at 5; SURCCo Petition at 5. Petitioners point out that AES’s modeling results indicate SO<sub>2</sub> impacts that are “minutely below” the SILs. SURCCo Petition at 10. They are particularly concerned about the predicted 24-hour SO<sub>2</sub> impacts, estimated at 4.97 µg/m<sup>3</sup>. The 24-hour SIL for SO<sub>2</sub> is 5.0 µg/m<sup>3</sup>. See *supra* Table 1.

The SILs are a tool used by EPA to screen emissions for projects such as the proposed AES facility. Instead of requiring every PSD applicant to perform costly and time-consuming full impact air quality analyses, the SILs allow EPA to readily identify those projects whose air quality impacts will be less than significant.<sup>18</sup> In this case, the modeled SO<sub>2</sub> impacts from

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<sup>18</sup> Note that there is a difference between a significant emission rate from a facility and a significant air quality impact once those emissions have dispersed in the air. A facility that will have significant emissions, as defined at 40 C.F.R. § 52.21(b)(23), may or may not have a significant air quality impact when modeling results are compared to the SILs. In this case, the SO<sub>2</sub> emission rate for the proposed AES facility is significant, but the predicted air quality impact for SO<sub>2</sub> is not.



the proposed AES facility are less than significant, using the SILs as the basis for that determination. If predicted air quality impacts are less than significant, EPA guidance allows a permit applicant to forego the full impact air quality analysis, including multi-source modeling. NSR Manual at C.24.

We acknowledge petitioners' concern that the predicted 24-hour SO<sub>2</sub> impact from the proposed facility is very close to the corresponding SIL. It may seem that a difference of only 0.03 µg/m<sup>3</sup> between AES's predicted impact and the SIL is an insufficient basis upon which to decide that AES need not conduct multi-source modeling. Notably, the PSD regulations do not specifically mandate multi-source modeling. *EcoEléctrica*, 7 E.A.D. at 65. Rather, the regulations contain a general requirement that permit applicants demonstrate that a proposed source will not cause or contribute to a violation of the NAAQS or a PSD increment. 40 C.F.R. § 52.21(k); *EcoEléctrica*, 7 E.A.D. at 65. The "requirement" for multi-source modeling comes from EPA guidance, and a permitting authority may insist on such modeling as a matter of discretion. NSR Manual at C.25 (multi-source modeling referred to as full impact analysis). In exercising that discretion, it is reasonable for the permitting authority to be guided by generally applicable thresholds in determining how detailed an air quality analysis needs to be.

In this case, the Region's decision to abide by the SIL threshold is also supported by the quality of the modeling that produced the 4.97 µg/m<sup>3</sup> estimate of AES's 24-hour SO<sub>2</sub> impacts. The modeling made use of EPA's preferred air quality models for the particular terrain and pollutants in question. Region's Response at 22–23; RS at 27. In addition, AES collected a year's worth of on-site meteorological data that were used as an input to the models. RS at 26–27. The meteorological data were subject to quality assurance and controls. *Id.* at 26. The characteristics of the modeling effort in this case provide additional assurance that the estimated 24-hour SO<sub>2</sub> impact of 4.97 µg/m<sup>3</sup> is valid.

Thus, even though the predicted 24-hour SO<sub>2</sub> impact from the proposed AES facility approaches the 24-hour SO<sub>2</sub> SIL, the Region's decision not to require multi-source modeling is supported both by established policy regarding SIL thresholds and the quality of the modeling that produced the impact estimate. Having denied review of the petitioners' specific challenges to the air quality analysis for SO<sub>2</sub>, we also deny review of the challenge to the Region's decision not to require a multi-source air quality analysis for SO<sub>2</sub> because predicted SO<sub>2</sub> impacts from AES fall

below the SILs.<sup>19</sup> Petitioners have not shown that this decision was clearly erroneous or otherwise warrants review.

#### 4. *Questions About the Attainment Status of Guayama and the Need for Preconstruction Monitoring*

In addition to concerns about the accuracy of the SO<sub>2</sub> modeling for the proposed facility, petitioners raise questions about the SO<sub>2</sub> attainment status of Guayama. SURCCo Petition at 18–26. Petitioners believe that their concerns and a general dearth of data about current ambient air quality in Guayama should have caused the Region to require preconstruction monitoring from AES. *Id.* at 22. Petitioners acknowledge that AES’s predicted SO<sub>2</sub> impacts are below the *de minimis* monitoring levels but believe that the Region should have used its discretion to nonetheless require preconstruction monitoring. *Id.*

The Region points out that a 1983 study of Puerto Rico air quality, performed in conjunction with Puerto Rico’s State Implementation Plan (“SIP”), determined that Guayama was in attainment of the SO<sub>2</sub> NAAQS. RS at 31, 58; Region’s Response at 31. The Region believes that the 1983 attainment demonstration is still valid for Guayama because there has been no major source construction in Guayama since that date. Region’s Response at 31; *see also* RS at 31, 58. The Region further states that there are “no data to suggest that there is an existing exceedance of any of the NAAQS.” RS at 58. During this permit process, the Region obtained an estimate of SO<sub>2</sub> concentrations in ambient air by examining data from a monitoring facility at Cerro Modesto, located approximately seventeen kilometers from the proposed site. *Id.* at 20. The Cerro Modesto data showed SO<sub>2</sub> concentrations well below the NAAQS. *Id.* Although the Region concedes that conditions at Cerro Modesto may not be identical to Guayama, it believes that the data are useful for estimating background conditions. *Id.*; Region’s Response at 44. Thus, the Region has offered several rationales for concluding that Guayama’s SO<sub>2</sub> attainment status is valid. However, in the interest of verifying ambient air conditions in Guayama, the Region has required AES, as a condition of its permit, to perform ambient air monitoring for SO<sub>2</sub> after the facility commences operations. Permit ¶ XVI.5; RS at 61.

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<sup>19</sup>We note that the Region included a permit condition requiring AES to conduct a multi-source air quality analysis as a confirmatory measure within six months of the effective date of the permit. Permit ¶ XVI.4. This condition was included as part of the Region’s environmental justice efforts on behalf of the surrounding community. RS at 61; *see infra* Section II.E.

Petitioners are skeptical of the Region's position regarding ambient SO<sub>2</sub> levels in Guayama. They believe that a variety of other factors militate in favor of requiring preconstruction monitoring. Petitioners first point out that the 1983 SIP attainment demonstration was based on modeling, not actual ambient air quality data, and that little ambient air quality data have been collected in the interim. SURCCo Petition at 19. Petitioners also counter the Region's assertion that no data suggest an existing exceedance of the NAAQS. Petitioners offer the results of SO<sub>2</sub> modeling performed by the Puerto Rico Environmental Quality Board ("PREQB") in 1990. According to SURCCo, the PREQB modeling predicts SO<sub>2</sub> concentrations in the Guayama area that exceed the NAAQS. SURCCo Petition at 20–21. Third, petitioners question the representativeness of the Cerro Modesto data. *Id.* at 23. Finally, petitioners claim that existing sources already emit large quantities of SO<sub>2</sub> and that certain sources may be violating the terms of their permits, thus compounding problems with SO<sub>2</sub> air quality. *Id.* at 25. In sum, petitioners do not believe that the Region's plan to obtain SO<sub>2</sub> ambient air data *after* the AES facility commences operation meets the spirit of the Clean Air Act and its regulations. *Id.* at 17.

Even if we were convinced by each of the factors mentioned in SURCCO's petition,<sup>20</sup> we would nonetheless uphold the Region's decision

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<sup>20</sup> There are several weaknesses in petitioners' arguments regarding Guayama's attainment status for SO<sub>2</sub>, not least of which is that certain arguments were not brought to the Region's attention during the public comment period. With regard to the 1990 PREQB study, SURCCo claims that the study was not reasonably ascertainable during the public comment period because SURCCo only discovered the study when preparing a response to the Region's Responsiveness Summary. SURCCo Petition at 21. Although SURCCo did not learn of the study until after the close of the public comment period, that does not mean that the study was not reasonably ascertainable at an earlier date. Obviously, based on the date of the study, the study results were available long before the public comment period on the proposed AES permit. SURCCo only discovered the 1990 PREQB study when it asked PREQB for SO<sub>2</sub> modeling data for Puerto Rico after reviewing the Responsiveness Summary. *Id.* at 20. In light of SURCCo's admission that its concern about SO<sub>2</sub> air quality "has always been an issue," we see no reason why SURCCo could not have made an inquiry of PREQB much earlier in this permit process. Thus, we find that the 1990 PREQB study was reasonably ascertainable, but it was not brought to the attention of the Region during the public comment period. Therefore, the study is not properly before us on appeal.

In addition, to briefly address SURCCo's principal arguments regarding SO<sub>2</sub> attainment in Guayama, we note the following:

- The PREQB study is not necessarily an accurate predictor of Guayama conditions, as it is based upon meteorological data from a different part of Puerto Rico. Region's Response at 35. In contrast, AES collected a year of on-site meteorological data for use in its air quality analysis. *See supra* note 15.

Continued

not to require preconstruction monitoring in this case. SURCCo's petition raises questions about actual SO<sub>2</sub> levels in the Guayama area. According to SURCCo's information, there may or may not be current exceedances of the SO<sub>2</sub> NAAQS. Although additional monitoring data may help clarify the situation, for the reasons explained below, the Region's decision to obtain those data after commencement of operation of the proposed AES facility is not clearly erroneous from a legal point of view, nor is it an important matter of policy that warrants our intervention.

Legally, the SO<sub>2</sub> attainment designation for Puerto Rico is still in effect, even if the underlying study in support of that designation dates from 1983. *See* 40 C.F.R. § 81.355 (Puerto Rico SO<sub>2</sub> air quality rated as "better than national standards"). That designation may not be challenged in this proceeding.<sup>21</sup> Because Guayama is officially an SO<sub>2</sub> attainment area, the PSD regulations govern the preconstruction permitting process. Thus, the PSD regulation providing for an exemption to preconstruction monitoring may be validly applied in this case. *See* 40 C.F.R. § 52.21(i)(8). The Region has established that such an exemption was justified in this case because the predicted SO<sub>2</sub> impacts from the proposed facility are lower than the *de minimis* monitoring levels. *See* 40 C.F.R. § 52.21(i)(8)(i); *EcoEléctrica*, 7 E.A.D. at 64.

Moreover, a showing that the predicted impacts are also below the SILs generally constitutes an acceptable demonstration of compliance with the NAAQS. NSR Manual at C.51. If a proposed facility has modeled impacts that are below the SILs, that facility is not considered to cause or contribute to a violation of an air quality standard. *See* Memorandum from Gerald A. Emison, OAQPS, U.S. EPA, to Thomas J. Maslany, Air Management Division, U.S. EPA at 1 (July 5, 1988) (included in administrative record as item #189C); Region's Response at 39. The Agency has

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• The Cerro Modesto monitoring data are not subject to representativeness requirements because they were not being offered as official SO<sub>2</sub> background data for use in a full impact analysis. The Cerro Modesto data were merely offered as an estimate of background conditions. RS at 38.

• Potential violations at existing sources do not necessarily indicate that an area is not meeting the NAAQS. Moreover, we have repeatedly held that potential permit violations by other sources are primarily an enforcement issue, and not grounds for challenging a permit decision. *See EcoEléctrica*, 7 E.A.D. at 70; *Federated Oil & Gas*, 6 E.A.D. at 730.

<sup>21</sup> Attainment and non-attainment designations are made pursuant to specific statutory procedures that include provisions for redesignation. CAA § 107(d), 42 U.S.C. § 7407(d).

made a judgment that, as a general matter, proposed facilities with insignificant air quality impacts (i.e., impacts below the SILs) do not cause or contribute to air quality violations. Thus, even if SURCCo's information conclusively supported a finding that there are current NAAQS violations in Guayama, the AES facility as proposed would not be considered a cause of or contributor to such violations. AES could still therefore obtain a PSD permit.

With regard to whether this issue presents a reviewable matter of policy under 40 C.F.R. § 124.19, we believe that the Region's decision to proceed with permit issuance and later examine SO<sub>2</sub> air quality in Guayama more closely is a legitimate exercise of its discretion. If SURCCo's suspicions about existing ambient SO<sub>2</sub> levels are correct, the SO<sub>2</sub> NAAQS may be threatened even without the emissions from the AES facility. Although the Region could have required AES to conduct preconstruction monitoring, even the worst case results of such monitoring would not prevent AES from being eligible for a PSD permit because as discussed above, AES's own predicted SO<sub>2</sub> impact is below the threshold for causing or contributing to air quality violations. Under the petitioners' approach, monitoring data would become available sooner, but it is entirely possible that it would neither affect the AES permit nor be accompanied by an effort to control ambient SO<sub>2</sub> levels. Under the Region's approach, AES is required to install and operate an ambient SO<sub>2</sub> monitor. If violations of the SO<sub>2</sub> NAAQS are discovered, the Region and PREQB have committed to undertake corrective action, including a possible revision of Puerto Rico's SIP on an expedited basis. RS at 25, 61–62; Region's Response at 40. The Region's approach has the potential benefit of efficiently and permanently achieving lower SO<sub>2</sub> levels in the ambient air by addressing SO<sub>2</sub> emissions from multiple facilities rather than focusing only on the AES project.

Thus, we find that the Region's decision not to require AES to conduct preconstruction monitoring for SO<sub>2</sub> is not clearly erroneous or otherwise warranting of our review. Review is denied.

#### *D. Issues Related to Fine Particulate Matter (PM<sub>10</sub>)*

The proposed AES facility has a potential to emit PM<sub>10</sub> at a rate of 316 tons/year. This level of PM<sub>10</sub> emissions subjects the project to the air quality analysis and BACT requirements of the PSD regulations. Petitioners challenge elements of the Region's decisions in both of these areas.

### 1. $PM_{10}$ Air Quality Analysis

Unlike the predicted impact of  $SO_2$  emissions from the proposed facility, the predicted impact of  $PM_{10}$  emissions on air quality is significant. It exceeds both the *de minimis* monitoring levels and the SILs. Table 2 presents  $PM_{10}$  modeling results for the proposed AES facility along with the corresponding *de minimis* monitoring levels and SILs:

TABLE 2  
 $PM_{10}$  Air Quality Impacts from AES\*

Averaging Time	AES Modeling Results <sup>22</sup>	<i>De Minimis</i> Monitoring Level <sup>23</sup>	Significant Impact Level <sup>24</sup>
Annual	2.95	N/A	1
24-hour	20.4	10	5

\* All concentrations presented in  $\mu\text{g}/\text{m}^3$

Because the predicted  $PM_{10}$  impacts exceeded the *de minimis* monitoring level, AES was required to obtain background ambient air monitoring data for  $PM_{10}$ . PREQB maintains a  $PM_{10}$  monitor at a school located 1.8 kilometers from the site of the proposed facility. The Region determined that the data from the PREQB monitor were representative of the site and could provide the required background monitoring data on  $PM_{10}$ . See RS at 98.

AES was also required to conduct a full impact analysis for  $PM_{10}$  because predicted impacts exceeded the  $PM_{10}$  SILs. The full impact analysis involves modeling the cumulative impacts of certain existing  $PM_{10}$  sources plus the impacts from the proposed facility as well as background concentrations obtained from the monitoring data. The results of a full impact analysis are compared to two air quality standards: 1) the NAAQS,<sup>25</sup> and 2) the PSD increment.<sup>26</sup> The PSD regulations require a

<sup>22</sup> See RS at 102.

<sup>23</sup> See 40 C.F.R. § 52.21(i)(8)(i).

<sup>24</sup> See NSR Manual at C.28.

<sup>25</sup> The  $PM_{10}$  NAAQS are maximum ambient air concentrations. See 40 C.F.R. § 50.6. The standards are set at levels that EPA has determined are necessary to protect the public health and welfare. 40 C.F.R. § 50.2(b).

<sup>26</sup> A PSD increment is the maximum allowable *increase* in pollutant concentration over a baseline concentration. See 40 C.F.R. § 52.21(c).

permit applicant to demonstrate that the proposed project will not cause or contribute to a violation of either the NAAQS or the PSD increment. 40 C.F.R. § 52.21(k). As shown in Table 3, AES's full impact analysis for PM<sub>10</sub> demonstrated that both standards will be protected:

TABLE 3  
PM<sub>10</sub> NAAQS and PSD Increment Compliance Demonstration\*

Averaging Time	AES PM <sub>10</sub> Impact Plus Other Sources Consuming Increment <sup>27</sup>	PSD Increment for PM <sub>10</sub> <sup>28</sup>	AES PM <sub>10</sub> Impact Plus Other Sources and Background Concentration <sup>29</sup>	PM <sub>10</sub> NAAQS <sup>30</sup>
Annual	3.3	17	44.5	50
24-hour	16.6 <sup>31</sup>	30	112.1	150

\* All concentrations presented in µg/m<sup>3</sup>.

Petitioners claim that the Region did not require use of the most up-to-date background monitoring data in the full impact analysis. SURCCo Petition at 27. Petitioners believe that 1997 data from the PREQB monitor at the local school should have been used because the 1997 data were available before the Region issued its final permit decision. *Id.* Petitioners identify three data points from the 1997 data set that, when added to the modeled impact of AES's proposed facility and other existing sources, result in exceedances of the PM<sub>10</sub> (24-hour) NAAQS. *Id.* at 28.

AES points out that the PSD regulations require background monitoring data to "represent at least one year preceding receipt of the application," 40 C.F.R. § 52.21(m)(1)(iv), and that they submitted data from the five years immediately previous to the date of their permit application.

<sup>27</sup> See RS at 102.

<sup>28</sup> See 40 C.F.R. § 52.21(c).

<sup>29</sup> See RS at 102.

<sup>30</sup> See 40 C.F.R. § 50.6.

<sup>31</sup> The value listed in Table 3 representing the predicted 24-hour PM<sub>10</sub> impact from AES plus other increment consuming sources is lower than the value shown in Table 2 for the 24-hour impact of the AES facility by itself. The value used in Table 3 reflects the "highest, second highest estimated concentration" which is to be used in NAAQS and PSD increment compliance demonstrations for averaging times of 24 hours or less. 40 C.F.R. pt. 51 app. W §§ 11.2.3.2, 11.2.3.3.

AES Response at 32–33. The 1997 data discussed by the petitioners dates from after AES submitted its permit application (in December 1995), and from after the Region determined that the permit application was complete (in September 1996).

The Region and AES also note that the three 1997 data points highlighted by the petitioners have been flagged for quality assurance/quality control purposes. Region's Response at 55; AES Response at 34. The flags on these data points indicate that the values were influenced by Sahara dust and are therefore not considered representative of normal conditions. AES Response at 34–35. EPA corrects such flagged data before using it in compliance demonstrations. Further, even though 1997 data were not required to be used in the NAAQS and PSD increment compliance demonstration because they post-date the permit application, the Region notes that using the corrected 1997 data in a compliance demonstration does not yield a NAAQS exceedance. Region's Response at 56.

The  $PM_{10}$  compliance demonstration for the proposed AES facility is well supported by the background monitoring data. Petitioners have not established that the Region's choice of  $PM_{10}$  monitoring data and the resulting air quality analysis were clearly erroneous or involve an important policy matter that warrants a grant of review. Review is therefore denied.<sup>32</sup>

## 2. BACT Determination for $PM_{10}$

Petitioners challenge the final  $PM_{10}$  permit limit for the CFB boilers.  $PM_{10}$  consists of two types of particulate, condensibles and non-condensibles. See 55 Fed. Reg. 14,246 (Apr. 17, 1990) (“emissions that contribute to ambient  $PM_{10}$  concentrations are the sum of in-stack [non-condensable]  $PM_{10}$  \* \* \* and condensible emissions”). The permit is designed to address both types of  $PM_{10}$ . There are two  $PM_{10}$  emission limits applicable to the boilers. The first limit states, “emissions of  $PM_{10}$  (condensible and noncondensible) shall not exceed 0.015 lb/MMBTU \* \* \*.” Permit ¶ VIII.1–CFB.a.2. The second limit notes that AES may not be able to meet the 0.015 lb/MMBTU limit due to the condensible portion of  $PM_{10}$  and permits EPA to “adjust the  $PM_{10}$  emission rate to a level not to exceed 0.05 lb/MMBTU.” *Id.* ¶ VIII.1–CFB.a.3. The two-limit approach involved a change from the draft permit and petitioners claim that it violates the New Source

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<sup>32</sup> Review is also denied on petitioners' objection to the multi-source component of the  $PM_{10}$  air quality analysis. Petitioners have not shown how their concern regarding benzene emissions from a neighboring facility relates to the full impact analysis for  $PM_{10}$ . See SURCCo Petition at 28–29.



Performance Standard (“NSPS”) for this type of facility. SURCCo Petition at 29.

In the draft permit, the Region proposed a PM<sub>10</sub> emission limit for the CFB boilers of 0.015 lb/MMBTU. Draft Permit ¶ VIII.1–CFB.a. The draft permit also required that a particular test method, i.e., Method 202, be used to measure PM<sub>10</sub> emissions. *Id.* ¶ XV.4.e. Method 202 is used to quantify the condensible fraction of total PM<sub>10</sub> emissions.

AES submitted comments on the pairing of the specified emission limit and test method. AES pointed out that the limit of 0.015 lb/MMBTU had been derived from BACT determinations for other coal-fired CFB boilers that did not take into consideration the condensible fraction of PM<sub>10</sub>. *See* RS at 10. Instead of requiring use of Method 202, the emissions from the other facilities were to be tested using an “in-stack” method which is designed to measure non-condensibles. AES requested that the Region require testing only by an in-stack test method and further requested that the Region not impose a limit for the condensible fraction of PM<sub>10</sub>. RS at 11.

The Region recognized that the permit limit for PM<sub>10</sub> needed to be reconsidered in light of the mismatched emission limit and test method. Region’s Response at 57. However, the Region insisted on retaining a limit for PM<sub>10</sub> that included condensibles. *See* RS at 13. The Region noted that EPA considers condensible particulate matter to be included in PM<sub>10</sub>. *Id.*; *see also* 56 Fed. Reg. 65,433 (Dec. 17, 1991) (promulgation of test method 202 for measuring condensible particulate matter from stationary sources); 55 Fed. Reg. at 14,246 (noting need for special test method for condensible PM<sub>10</sub> emissions). The Agency has also stated that it is particularly important to account for condensible particulate matter at sources where condensibles constitute a significant fraction of the total PM<sub>10</sub> because otherwise, the PM<sub>10</sub> impact will be underestimated. Letter from Thompson G. Pace, U.S. EPA, to Sean Fitzsimmons, Iowa Department of Natural Resources (Mar. 31, 1994) (included in administrative record as item # 189E). The same guidance letter notes that Method 202 is the recommended method for measuring the condensible fraction of PM<sub>10</sub> and that it is generally not acceptable to waive Method 202 testing. *Id.* at 2.

In the course of processing AES’s permit application and responding to comments, the Region discovered that there was very little information available on which to base an emission limit that includes condensible PM<sub>10</sub> from CFB boilers. *See* RS at 13. Most other CFB boilers had PM<sub>10</sub> emission limits that were not designed to control the condensible fraction of PM<sub>10</sub>. AES surveyed fifteen state environmental agencies and found that

only two of the agencies included the condensible fraction of PM<sub>10</sub> when setting emission limits under their PSD programs. RS at 11.<sup>33</sup> Further, AES found only one example of PM<sub>10</sub> emission rates that included condensibles from a coal-fired CFB boiler, and that facility used a test method other than Method 202.

Thus, with little guidance regarding achievability, the Region was left to derive a PM<sub>10</sub> limit that included both condensible and non-condensibile particulate matter. The Region set a limit of 0.015 lb/MMBTU but provided that the limit may be adjusted upward after obtaining actual stack test data from AES. Region's Response at 57–58. Nonetheless, the Region set a cap on the upward adjustment at 0.05 lb/MMBTU. AES performed an air quality analysis using the upper limit of 0.05 lb/MMBTU and found that even at the higher limit the NAAQS and PSD increment for PM<sub>10</sub> will be protected. *Id.* at 58.

The Region's approach to setting a PM<sub>10</sub> limit for the CFB boilers is similar to an approach that the Board upheld in *In re Hadson Power 14*, 4 E.A.D. 258 (EAB 1992). In *Hadson Power*, the Board denied review of a NO<sub>x</sub> emission limit that involved the first time a control technology was applied to a particular type of coal-fired boiler. The petitioner in *Hadson Power* objected to the NO<sub>x</sub> limit as being too high, but the permitting authority had included a permit provision that allowed the NO<sub>x</sub> limit to be adjusted downward after the facility commenced operation. *Id.* at 291. The *Hadson Power* approach began with a high emission limit and included the potential for downward adjustments. The Region's approach here begins with a low emission limit and allows for upward adjustments, if necessary, subject to a cap. Both cases involve a situation where the permitting authority was faced with some uncertainty as to what emission limit was achievable. In the circumstances of this case, as in *Hadson Power*, the use of an adjustable limit, constrained by certain parameters, and backed by a worst case air quality analysis, is a reasonable approach.

We recognize that the potential PM<sub>10</sub> emission limit of 0.05 lb/MMBTU is significantly higher than the original limit of 0.015 lb/MMBTU. The reason for the potentially higher limit, however, is to control a type of pollution (i.e., condensible particulate matter) that might otherwise go uncontrolled. Through this permit, the Region is committed to addressing condensible particulate matter. This approach will ultimately yield a more accurate picture of PM<sub>10</sub> emissions from the AES facility. By including these permit limits in EPA's database of BACT determinations, the Region also

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<sup>33</sup>The two states that do include condensible particulate matter are New York and New Jersey, and they do so at the direction of Region II. Letter from Rebecca Cranna, AES Puerto Rico, to Steven Riva, U.S. EPA Region II at 2 (June 19, 1997).

increases the likelihood that the next facility subject to BACT for PM<sub>10</sub> will also include a limit and test method designed to take into account the condensable fraction of PM<sub>10</sub>. Upon close examination, petitioners' objection to the PM<sub>10</sub> emission limit for the CFB boilers in the Region's final permit decision does not indicate clear error or an important policy matter that warrants our review.<sup>34</sup>

### E. *Environmental Justice*

Petitioners' final basis for appeal of the Region's PSD permit decision for AES invokes President Clinton's Executive Order on environmental justice. SURCCo Petition at 30–33; *see* Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Exec. Order No. 12,898, 59 Fed. Reg. 7629 (Feb.16, 1994) ("Executive Order"). Petitioners' environmental justice arguments rest in large part on their technical arguments, but with a slightly different emphasis.

Petitioners state that the proposed location for the AES facility is a low-income community and therefore the Region should have taken additional safeguards to protect this community on the basis of environmental justice. SURCCo Petition at 30. Petitioners believe that the Region should not have strictly adhered to its "significant impact" levels, should have required additional air monitoring and modeling prior to permit issuance, and should not have relied on the 1983 attainment demonstration. In addition, petitioners claim that the Region did not consider public comment and testimony regarding health problems in the Guayama area. *Id.* at 31. They also suggest that the Region could have done more to enhance public participation and comment. *Id.* at 32.

The Region performed an environmental justice analysis that is reproduced in the Responsiveness Summary. *See* RS at 52–62. The Region's environmental justice analysis begins by analyzing income levels in the areas of maximum potential impact from AES emissions. *Id.* at 54–55. The Region concluded that these areas are low-income and therefore proceeded to assess whether the proposed AES project would result

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<sup>34</sup> Petitioners' argument that the new PM<sub>10</sub> limit is inconsistent with the NSPS is not an accurate reading of the NSPS. The applicable NSPS is Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978, 40 C.F.R. pt. 60 subpt. Da. This NSPS only contains a standard for PM emissions (i.e., total particulates), not PM<sub>10</sub>. The PM limit in the NSPS is 0.03 lb/MMBTU, to be determined by an in-stack test method. 40 C.F.R. §§ 60.42a(a)(1), 60.48a(b)(2). The AES permit also contains a limit on PM, distinct from its limit on PM<sub>10</sub>. The PM limit is 0.015 lb/MMBTU. Permit ¶ VIII.1–CFB.a.1. Thus, the permit is fully consistent with the applicable NSPS.

in a disproportionately high and adverse effect on human health or the environment in these areas. *Id.* at 55.

The Region prepared a thorough assessment of the potential impacts of air emissions from the proposed AES facility. The Region looked at maximum short and long-term impacts of carbon monoxide, sulfur dioxide, nitrogen dioxide, and fine particulate matter. *Id.* at 55–57. Not only were all maximum predicted concentrations of these pollutants below the corresponding NAAQS, the maximum predicted concentrations of carbon monoxide, sulfur dioxide, and nitrogen dioxide were all below the SILs as well. The Region pointed out that NAAQS are health based standards, designed to protect public health with an adequate margin of safety, including sensitive populations such as children, the elderly, and asthmatics. *Id.* at 57.

In support of environmental justice for this community, the Region took steps to require that many elements of the air quality analyses performed during the permit process be reconfirmed after the permit is issued. As conditions of the permit, AES is required to conduct ambient SO<sub>2</sub> monitoring and to perform a multi-source air quality analysis for SO<sub>2</sub>.<sup>35</sup> Permit ¶¶ XVI.4, XVI.5; *see* RS at 61. These permit conditions are a testament to the role of public participation in the permit process. Because of the concerns raised during the public comment period, this permit contains additional conditions that are not mandated by the PSD regulations but are within the Region’s discretion to require. The Region incorporated the conditions into the permit as a tangible response to the community’s concerns about air quality and to fulfill the goals of the Executive Order.

The Region also addressed information submitted during the public comment period regarding adverse health impacts and studies of health impacts that were previously conducted in the community. RS at 58–59. The Region further analyzed the distribution of Toxic Release Inventory (“TRI”) facilities on the island of Puerto Rico and the quantity of toxic chemical releases reported by those facilities. The information from the health studies and the TRI analysis pertains primarily to toxic chemicals rather than criteria pollutants (which are the focus of the PSD program), but the Region’s effort to provide meaningful responses on these issues contributes to environmental justice for the Guayama community.

Finally, with regard to opportunities for the public to participate and provide comments on the AES permit decision, the Region points out that

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<sup>35</sup> In addition to the SO<sub>2</sub> monitoring, the Region points out that PREQB has committed to indefinitely continue the PM<sub>10</sub> monitoring at the local school. RS at 62.

it provided expanded public comment opportunities and engaged in extensive correspondence with petitioner SURCCo over the course of the permit process. Region's Response at 70. The Region also took several steps to ensure that comments could be received in either English or Spanish and all comments were granted equal consideration. RS at 69.

In light of the Region's thorough environmental justice analysis and incorporation of environmental justice elements into the permit decision, we find that petitioners have not demonstrated that the Region committed clear error on issues of environmental justice. *See In re EcoEléctrica, L.P.*, 7 E.A.D. 56, 69 (EAB 1997). Neither do we see an important matter of policy that warrants our review. The Region accommodated several of petitioners' concerns (e.g., concerns about SO<sub>2</sub> ambient air levels and multi-source modeling) albeit not in the precise manner that petitioners desired. On the basis of the administrative record, the Region's environmental justice efforts appear satisfactory, and the petitioners have not demonstrated otherwise.

### III. CONCLUSION

The petitions for review of Region II's permit decision for AES are denied. First, the Region's decisions with regard to modeling AES's SO<sub>2</sub> impacts, multi-source modeling for SO<sub>2</sub>, and preconstruction monitoring for SO<sub>2</sub> were made in accordance with PSD regulations and established guidance. Second, the Region's choice of a PM<sub>10</sub> emission limit for the CFB boilers is a creative yet justifiable approach to ensuring that the permit contains effective control of condensible particulate matter. Further, the PM<sub>10</sub> air quality compliance demonstration is well supported by the background monitoring data. Finally, petitioners have failed to show, in light of the Region's thorough environmental justice analysis, that an issue of environmental justice meets the standard for Board review.

So ordered.<sup>36</sup>

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<sup>36</sup> This decision constitutes final agency action for purposes of judicial review. *See* 40 C.F.R. § 124.19(f)(1)(i). The Region shall see that notice of this decision is published in the Federal Register in accordance with 40 C.F.R. § 124.19(f)(2).