



**Via Electronic Mail and U.S. Mail**

June 12, 2013

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**Re: Comments Concerning Florida's Section 110(a) Infrastructure State Implementation Plan (SIP) Submittal for 2010 Sulfur Dioxide NAAQS**

Dear Mr. Stevens:

On behalf of the Sierra Club, its 27,398 Florida members, Earthjustice<sup>1</sup>, and others who are adversely impacted by Florida's sources of sulfur dioxide ("SO<sub>2</sub>") pollution, we submit the following comments on Florida's proposed Infrastructure State Implementation Plan ("SIP") addressing the requirements for the 2010 Sulfur Dioxide National Ambient Air Quality Standards ("NAAQS"), required by Section 110(a)(1) and (2) of the Clean Air Act ("CAA" or "Act").<sup>2</sup> We are very concerned that Florida's SIP submission does not include concrete measures to control SO<sub>2</sub> pollution from two massive coal power plants which can and have caused unsafe air quality over the Crystal River and the Panama City Beach regions.

The primary NAAQS define the levels of air quality that the EPA Administrator determines to be necessary to protect public health with an adequate margin of safety.<sup>3</sup> Indeed, the new one-hour SO<sub>2</sub> standard is necessary to protect public health from the

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<sup>1</sup> Earthjustice is a non-profit public interest law organization dedicated to protecting the magnificent places, natural resources, and wildlife of this earth, and to defending the right of all people to a healthy environment

<sup>2</sup> 42 U.S.C. § 7410(a)(1), (2).

<sup>3</sup> See 42 U.S.C. § 7409(b)(1).

To: Mr. Stevens  
Page 2 of 2  
June 12, 2013

serious threats posed by short-term exposure to sulfur compounds, including decreased lung function, increased respiratory symptoms such as chest tightness, wheezing, and shortness of breath, and other serious indicators of respiratory illness, especially in asthmatics, children, and the elderly.<sup>4</sup> The health data relied upon by EPA in promulgating the new standard overwhelmingly indicated that increased asthma attacks and hospital visits are attributable to short-term concentrations of sulfur compounds in the air. Due to these and other serious impairments caused by short-term SO<sub>2</sub> exposure, the Florida Department of Environmental Protection (“FDEP”) must properly implement the one-hour SO<sub>2</sub> NAAQS to protect its citizens’ health.

I. THE FLORIDA INFRASTRUCTURE SIP MUST INCLUDE ENFORCEABLE ONE-HOUR SO<sub>2</sub> EMISSION LIMITATIONS TO ENSURE ATTAINMENT AND MAINTENANCE OF THE NAAQS.

Section 110(a)(1) of the Act provides that each state shall “adopt and submit to the Administrator . . . a plan which provides for implementation, maintenance, and enforcement of” the NAAQS. Section 110(a)(2)(A) requires that these plans, known as Infrastructure SIPs, “include enforceable emission limitations . . . as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements” of the CAA, including the requirement to maintain the NAAQS.<sup>5</sup>

EPA’s deference to a state’s SIP submittal is conditioned on the state’s submission of a plan “which satisfies the standards of § 110(a)(2)” and which includes emission limitations that result in compliance with the NAAQS.<sup>6</sup> For a plan to be sufficient, it “must demonstrate that the measures, rules, and regulations contained in it are adequate to provide for the timely attainment and maintenance of the national standard that it implements.”<sup>7</sup>

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<sup>4</sup> See *Primary National Ambient Air Quality Standard for Sulfur Dioxide; Final Rule*, 75 Fed. Reg. 35,520, 35,550 (June 20, 2010) (hereinafter “Final SO<sub>2</sub> Rule”).

<sup>5</sup> 42 U.S.C. § 7410(a)(2)(A); *Texas v. EPA*, 690 F.3d 670, 674 (5th Cir. 2012) (SIPs must include “enforceable limits” necessary to “meet the applicable NAAQS”); *Connecticut Fund for Env’t, Inc. v. EPA*, 696 F.2d 169, 172 (2d Cir. 1982) (Clean Air Act requires that SIPs contain “measures necessary to ensure the attainment and maintenance of NAAQS”); *Hall v. EPA*, 273 F.3d 1146 (9th Cir. 2001) (“Each State must submit a [SIP] that specif[ies] the manner in which [NAAQS] will be achieved and maintained within each air quality control region in the State”) (internal citations omitted).

<sup>6</sup> *Michigan Dept. of Env’tl Quality v. Browner*, 230 F.3d 181 (6th Cir. 2000) (affirming EPA’s rejection of a SIP proposal where the state did not offer evidence of the rules’ impact on the NAAQS and did not demonstrate that the proposed rules would not interfere with the attainment and maintenance of the NAAQS and otherwise comply with the CAA).

<sup>7</sup> 40 C.F.R. § 51.112(a) (noting also the adequacy of a plan’s control measures “shall be demonstrated by means of applicable air quality models . . .”).

To: Mr. Stevens  
Page 3 of 3  
June 12, 2013

On May 13, 2013, FDEP released its State Implementation Plan Infrastructure Confirmation for the 2010 Revised National Ambient Air Quality Standard for Sulfur Dioxide (“SIP Proposal”) for public comment. Even though the 2010 NAAQS requirements represent a new, tighter standard for ambient SO<sub>2</sub>, FDEP failed to impose restrictions on major SO<sub>2</sub> sources to ensure that they will attain and maintain the NAAQS.

- A. *Florida must include enforceable one-hour SO<sub>2</sub> emission limits for sources currently permitted to cause exceedances of the NAAQS, including the Crystal River Power Plant and the Lansing Smith Electric Generating Plant coal-fired power plants.*

FDEP fails to include adequate enforceable emission limitations for sources of SO<sub>2</sub> sufficient to ensure attainment and maintenance of the 2010 SO<sub>2</sub> NAAQS. Specifically, two coal-fired power plants, Crystal River Power Plant (Crystal River Plant) located in Citrus County, and the Lansing Smith Electric Generating Plant (Lansing Plant), located in Bay County, currently lack emission limits that prevent violations of the 2010 SO<sub>2</sub> NAAQS.<sup>8</sup> In order to comply with Section 110(a)(2)(A), the Florida SIP must be amended to ensure these sources and other large sources will not cause violations of the 2010 SO<sub>2</sub> NAAQS.

Florida’s existing regulations have proven insufficient to prevent NAAQS exceedances at Crystal River Plant and Lansing Plant.<sup>9,10</sup> Modeling shows that those plants are causing NAAQS violations over the Crystal River regions and over Panama City Beach, respectively.

The modeling reports for Crystal River Plant and Lansing Plant compare modeled ambient air concentrations from the plants’ emissions with the one-hour SO<sub>2</sub> NAAQS. The reports used EPA’s AERMOD program to measure the plant’s “allowable” (based on the plants’ current Title V permit) and actual (based on maximum plant-wide hourly emissions obtained from EPA’s Clean Air Markets Data and Maps database) emissions to determine whether the plants would cause violations of the one-hour SO<sub>2</sub> NAAQS.<sup>11</sup> The

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<sup>8</sup> FDEP must ensure that no other facilities in the state cause NAAQS violations.

<sup>9</sup> See Steven Klafka *Sierra Club Evaluation of Compliance with 1-hour SO<sub>2</sub> NAAQS for Crystal River Power Plant – Crystal River, Florida* (June 25, 2012) (hereinafter the “Crystal River Report”), attached hereto as Exhibit 1; and see Steven Klafka *Sierra Club Evaluation of Compliance with 1-hour SO<sub>2</sub> NAAQS for Lansing Smith Electric Generating Plant – Lynn Haven, Florida* (June 26, 2012) (hereinafter the “Lansing Report”), attached hereto as Exhibit 2.

<sup>10</sup> Both modeling reports and all exhibits have been provided electronically, available at <https://www.box.com/s/gsrpkkis8udo0y9h6fnk>; the files have also been mailed to FDEP on a CD.

<sup>11</sup> Crystal River Report at 2; and Lansing Report at 2.

To: Mr. Stevens  
Page 4 of 4  
June 12, 2013

modeling protocol employed is consistent with all available technical guidance, including Appendix W and EPA's March 2011 guidance for implementing the one-hour SO<sub>2</sub> NAAQS. Additionally, the reports used the most recent version of AERMOD available at the time of the studies.<sup>12,13</sup> Where any assumptions were made in the running of the model, Mr. Klafka employed conservative inputs, which favor the prediction of lower impacts from the plants so that the results actually likely understate the plant's SO<sub>2</sub> emission impacts.<sup>14</sup>

The modeling reports demonstrate that SO<sub>2</sub> emissions from the plants allowed under the existing SIP cause impacts that exceed the one-hour SO<sub>2</sub> NAAQS.<sup>15</sup> These violations occur both at the maximum allowed emissions in the facilities' permits (both permits have recently been altered to impose lower limits, but those limits do not yet apply) and at their actual maximum emissions levels. Although we are aware, as we discuss below, that both plants have recently taken regional haze-related permit requirements, these reductions are insufficient.

These violations based on permitted emission limits and actual emissions are impacting seven counties in Florida. Nevertheless, FDEP has not recommended that any county in Florida be designated as nonattainment; EPA concurred with FDEP's recommendation.<sup>16</sup> Because the two power plants are in areas which are currently designated attainment and there are no plans to designate them as nonattainment, FDEP must submit a SIP that "provides for implementation, maintenance, and enforcement of [the NAAQS] within such State."<sup>17</sup> The current SIP plainly does not do so.

Indeed, both facilities have, until recently, have been allowed emissions rates which produce SO<sub>2</sub> concentrations roughly five times greater than the NAAQS, as the table below shows. Actual emissions show modeled SO<sub>2</sub> concentrations that are nearly three times greater than the NAAQS level at Crystal River Plant and nearly twice the NAAQS level at Lansing Plant. At Crystal River plant, the modeling results show unsafe air quality extending for tens of miles around the plant, extending over Crystal Bay and

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<sup>12</sup> *Id.*

<sup>13</sup> The modeling reports used AERMOD version 12060.

<sup>14</sup> Crystal River Report at 3; and Lansing Report at 3.

<sup>15</sup> See Crystal River Report at 4 Table 1 (finding Crystal River Plant does not comply with the NAAQS); and Lansing Report at 4 Table 1 (finding Lansing Plant does not comply with the NAAQS).

<sup>16</sup> See Letter from Michael P. Halpin, Director, Division of Air Resource Management, Department of Environmental Protection, State of Florida to Gwendolyn Keyes Fleming, Regional Administrator, U.S. EPA Region 4 (Nov. 28, 2011), *available at* [http://www.epa.gov/so2designations/reletters/R4\\_FL\\_rec2\\_wtechanalysis.pdf](http://www.epa.gov/so2designations/reletters/R4_FL_rec2_wtechanalysis.pdf); see also Letter from Gwendolyn Keyes Fleming, Regional Administrator, U.S. EPA Region 4 to Rick Scott, Governor, State of Florida (Feb. 6, 2013), *available at* [http://www.epa.gov/so2designations/eparesp/04\\_FL\\_resp.pdf](http://www.epa.gov/so2designations/eparesp/04_FL_resp.pdf).

<sup>17</sup> 42 U.S.C. § 7410(a)(1).

To: Mr. Stevens

Page 5 of 5

June 12, 2013

inland. At Lansing Smith, the pollution plume covers essentially all of Panama City and Panama City Beach.

The findings from each modeling report are summarized in the table below.<sup>18</sup>

<b>Power Plant</b>	<b>Emission Rates</b>	<b>Facility Impact (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Background (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>Total Impact Facility Impact plus Background (<math>\mu\text{g}/\text{m}^3</math>)</b>	<b>SO<sub>2</sub> NAAQS (<math>\mu\text{g}/\text{m}^3</math>)<sup>19</sup></b>	<b>Counties Impacted</b>
Crystal River Plant	Allowable	915.8	5.2	921.0	196.2	Citrus, Hernando, Levy, & Marion
	Maximum	529.4	5.2	534.6	196.2	
Lansing Plant	Allowable	853.2	5.2	858.4	196.2	Bay, Washington, & Walton
	Maximum	341.3	5.2	346.5	196.2	

Based on these conservative modeling results, to achieve and maintain the one-hour SO<sub>2</sub> NAAQS, FDEP must promulgate enforceable one-hour averaging time emission limits into its SIP which are no less stringent than the following limits.<sup>20</sup> These emission limits must apply at all times including during periods of startup, shutdown, and malfunction.

<b>Plant</b>	<b>Maximum Total Facility Emission Rate (lbs/hr)</b>	<b>Required Total Facility Emission Reduction (%)</b>
Crystal River Plant	6,720.8	79.1%
Lansing Plant	4,221.9	77.6%

As demonstrated by the modeling reports, these plants and their governing emission limits allow exceedances of the 1-hour SO<sub>2</sub> NAAQS.

<sup>18</sup> See Crystal River Report at 4 Table 1; and Lansing Report at 4 Table 1.

<sup>19</sup> The 75 ppb to  $\mu\text{g}/\text{m}^3$  calculation is  $75/0.3823 = 196.2 \mu\text{g}/\text{m}^3$ .

<sup>20</sup> Crystal River Report at 4 Table 3; and Lansing Report at 4 Table 3.

To: Mr. Stevens  
Page 6 of 6  
June 12, 2013

Now, it is true that both plants have taken new SO<sub>2</sub> permit limits last year in response to Florida's regional haze compliance obligations. But there remains a significant question as to whether they will be fully implemented, and in what form. Moreover, the 30-day rolling averaging time prevents them from ensuring compliance with the NAAQS, even if they are fully implemented.

Crystal River Plant, first, has agreed that it will either discontinue the use of its uncontrolled units 1 and 2 as coal-fired units by 2020, or install a dry flue gas desulfurization (DFGD) system that achieves 95% SO<sub>2</sub> removal efficiency or an emission rate of 0.15 lb/mmBtu either by January 1, 2018, or within five years of EPA's approval of Florida's haze plan, whichever is later.<sup>21</sup> However, option 1 would not do so until 2020. And option 2 would not do so until five years after EPA's approval of Florida's haze plan, which has not yet occurred (so at least not until June 2018). Until that time, illegal and unhealthful air quality will continue to be allowed by Crystal River Plant's permit. Moreover, because even the 0.15 lb/mmBtu limit is to be achieved on a "30-day rolling average,"<sup>22</sup> new limit cannot guarantee compliance with the one-hour NAAQS. FDEP should require a one-hour averaging time to ensure compliance with the NAAQS. EPA has agreed that a one-hour averaging period should be implemented to protect the 2010 SO<sub>2</sub> NAAQS from emissions from a particular source.<sup>23</sup>

Lansing Plant, meanwhile, has received an emissions limit of 0.74 lb/mmBtu in a haze-related permit, again on a rolling 30-day average.<sup>24</sup> This limit is not effective until EPA approves it as part of Florida's haze plan, and compliance is not required until March 2016. Once again, the permit countenances illegal air quality violations for at least three more years, and the 30-day averaging time in the permit cannot assure compliance with the *one-hour* NAAQS.

In short, FDEP has made some progress, prompted by the regional haze rule, but neither existing permit limits nor those which may be imposed by the final regional haze SIP assure NAAQS compliance.

Yet, FDEP considers its SIP submission a "confirmation" that it satisfies the 2010 SO<sub>2</sub> NAAQS. Further, FDEP stated in its submission that it "hereby confirms that the requirements of 110(a)(1) and the infrastructure elements required by 110(a)(2)(A)-(M)

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<sup>21</sup> See Air Permit No. 0170004-036-AC (2012). In principle, either of these limits might remove the NAAQS violation (modeling suggests that Crystal River could comply with the NAAQS with an emissions rate no greater than 0.25 lb/mmBtu).

<sup>22</sup> *Id.* at 7.

<sup>23</sup> See Letter from Karl Brooks, Regional Administrator, U.S. EPA Region 7, to Robert Moser, Secretary, Kansas Department of Health and Environment (Feb. 3, 2011), attached hereto as Exhibit 3 (recommending one hour averaging times to maintain the NAAQS in a PSD permit).

<sup>24</sup> See Air Permit No. 0050014-020-AC (2012).

To: Mr. Stevens  
Page 7 of 7  
June 12, 2013

of the CAA are adequately addressed ...”<sup>25</sup> In support of its declaration of meeting the requirements of 110(a)(1)-(2), FDEP submitted several regulations that it purports to show the SIP’s compliance with 110(a)(2)(A). However, none of these regulations actually include enforceable emission limitations to ensure attainment and maintenance of the 2010 SO<sub>2</sub> NAAQS. Even FDEP recognizes that it has changed absolutely nothing to meet the new, stringent standard.<sup>26</sup>

Specifically, FDEP cites Florida Administrative Code (F.A.C) Section 62-204, which only incorporates the Final SO<sub>2</sub> Rule, but it does not provide any specific measures to incorporate the final rule. This is also true of the other regulations that Florida cites, F.A.C. 62-210, 62-212, 62-296, and 62-297, which respectively deal with stationary sources generally, stationary sources under preconstruction review, stationary sources’ emission standards, and stationary sources’ emission monitoring. None of the regulations listed to satisfy 110(a)(2)(A) guarantee any enforceable emission limits.<sup>27</sup> Thus, the SIP cannot ensure maintenance of the new one-hour SO<sub>2</sub> NAAQS.

Therefore, FDEP must impose additional emission limits on the plants which will guarantee compliance with the NAAQS at all times. These limits must reflect emissions levels which will address the NAAQS violations shown in the modeling reports. Because the Infrastructure SIP submission does not include adequate emission limitations, and Florida’s current regulations do not suffice, the SIP fails to comply with section 110(a)(1)(A).

B. *AERMOD modeling, such as that provided by the Sierra Club, is the appropriate tool for evaluating the adequacy of Infrastructure SIPs and ensuring attainment and maintenance of the NAAQS*

As outlined by EPA in the Final SO<sub>2</sub> NAAQS Rule,<sup>28</sup> air dispersion modeling is the best method for evaluating the short-term impacts of large sources of SO<sub>2</sub>. This is consistent with EPA’s historic use of air dispersion modeling for attainment designations and SIP revisions. Furthermore, a state agency may not ignore information put in front of them.<sup>29</sup>

FDEP has been on notice that modeling data is an important input in the NAAQS attainment and maintenance process. In particular, EPA has historically used modeling in

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<sup>25</sup> SIP Proposal at 1.

<sup>26</sup> *See id.* (“are adequately addressed by the existing approved SIP...”).

<sup>27</sup> *See* SIP Proposal at 3.

<sup>28</sup> Final SO<sub>2</sub> Rule at 35,551.

<sup>29</sup> *See generally Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983) (holding that it was arbitrary and capricious for agency to ignore an important aspect of an issue placed before it); *Grand Canyon Trust v. FAA*, 290 F.3d 339, 346 (D.C. Cir. 2002).

To: Mr. Stevens  
Page 8 of 8  
June 12, 2013

determining attainment for the SO<sub>2</sub> standard.<sup>30</sup> For example, in EPA's 1994 SO<sub>2</sub> Guideline Document, EPA noted that "for SO<sub>2</sub> attainment demonstrations, monitoring data alone will generally not be adequate," and that "[a]ttainment determinations for SO<sub>2</sub> will generally not rely on ambient monitoring data alone, but instead will be supported by an acceptable modeling analysis which quantifies that the SIP strategy is sound and that enforceable emission limits are responsible for attainment."<sup>31</sup> The 1994 SO<sub>2</sub> Guideline Document goes on to note that monitoring alone is likely to be inadequate: "[f]or SO<sub>2</sub>, dispersion modeling will generally be necessary to evaluate comprehensively a source's impacts and to determine the areas of expected high concentrations based upon current conditions."<sup>32</sup>

EPA's acceptance of modeling for making attainment designations stretches back decades and is equally applicable to determining the adequacy of an Infrastructure SIP. In 1983, the Office of Air Quality Planning and Standards ("OAQPS") issued a Section 107 Designation Policy Summary.<sup>33</sup> OAQPS explained that "air quality modeling emissions data[] should be used to determine if the monitoring data accurately characterize the worst case air quality in the area."<sup>34</sup> Of course, if there is no monitoring data for an area, it does not accurately characterize the worst-case air quality in an area. EPA acknowledged that some nonattainment designations were "based solely on modeling[.]"<sup>35</sup> In fact, reliance on modeling for nonattainment designations stretches back to the Carter Administration. In 1978, EPA designated Laurel, Montana as nonattainment "due to measured and modeled violations of the primary SO<sub>2</sub> standard."<sup>36</sup>

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<sup>30</sup> See e.g., U.S. EPA, *Implementation of the 1-Hour SO<sub>2</sub> NAAQS Draft White Paper for Discussion* at 3, fn. 1, (hereinafter "EPA White Paper"), available at <http://www.epa.gov/airquality/sulfurdioxide/pdfs/20120522whitepaper.pdf>; see also Respondent's Opposition to Motion of the State of North Dakota for a Stay of EPA's 1-Hour SO<sub>2</sub> Ambient Standard Rule at 3, *National Environmental Development Association's Clean Air Project v. EPA* (D.C. Cir. 2010) (No. 10-1252), attached hereto as Exhibit 4 ("the Agency has historically relied on modeling to make designations for sulfur dioxide").

<sup>31</sup> U.S. EPA, 1994 SO<sub>2</sub> Guideline Document, (hereinafter "1994 SO<sub>2</sub> Guideline Document"), available at [http://www.epa.gov/ttn/oarpg/t1/memoranda/so2\\_guide\\_092109.pdf](http://www.epa.gov/ttn/oarpg/t1/memoranda/so2_guide_092109.pdf), at 2-1; see also *id.* at 2-5 ("For SO<sub>2</sub> attainment demonstrations, monitoring data alone will generally not be adequate.").

<sup>32</sup> *Id.* at 2-3.

<sup>33</sup> See Sheldon Meyers Memorandum re Section 107 Designation Policy Summary (April 21, 1983), attached hereto as Exhibit 5.

<sup>34</sup> *Id.* at 1.

<sup>35</sup> *Id.* at 2.

<sup>36</sup> *Montana Sulphur & Chemical Co. v. EPA*, 666 F.3d 1174, 1181 (9th Cir. 2012) (citing 43 Fed. Reg. 8,962 (Mar. 3, 1978)).



To: Mr. Stevens  
Page 9 of 9  
June 12, 2013

As such, EPA's final 2010 SO<sub>2</sub> NAAQS rule simply continues and builds upon EPA's historical practice of using modeling to determine attainment and nonattainment status for SO<sub>2</sub> NAAQS. In doing so, EPA properly recognized the "strong source-oriented nature of SO<sub>2</sub> ambient impacts,"<sup>37</sup> and concluded that the appropriate methodology for purposes of determining compliance, attainment, and nonattainment with the new NAAQS is modeling.<sup>38</sup> Accordingly, in promulgating the new SO<sub>2</sub> NAAQS, EPA explained that, for the one-hour standard, "it is more appropriate and efficient to principally use modeling to assess compliance for medium to larger sources . . ." <sup>39</sup> Similarly, EPA explained in the EPA White Paper that using modeling to determine attainment for the SO<sub>2</sub> standard "could better address several potentially problematic issues than would the narrower monitoring-focused approach discussed in the proposal for the SO<sub>2</sub> NAAQS, including the unique source-specific impacts of SO<sub>2</sub> emissions and the special challenges SO<sub>2</sub> emissions have historically presented in terms of monitoring short-term SO<sub>2</sub> levels for comparison with the NAAQS in many situations (75 FR 35550)."<sup>40</sup>

Moreover, EPA's use of modeling has been upheld by the courts. For example, in *Montana Sulphur*, the company challenged a SIP call, a SIP disapproval and a Federal Implementation Plan ("FIP") promulgation, because it was premised on a modeling analysis that showed the Billings/Laurel, Montana area was in nonattainment for SO<sub>2</sub>.<sup>41</sup> The court rejected Montana Sulphur's argument and held that EPA's reliance on modeling was not arbitrary and capricious or otherwise unlawful.<sup>42</sup>

EPA uses modeling because the agency is well aware that modeling produces reliable results. For example, as John C. Vimont, EPA Region 9's Regional Meteorologist, has stated under oath:

EPA does recognize the usefulness of ambient measurements for information on background concentrations, provided reliable monitoring techniques are available. EPA does not recommend, however, that ambient measurements be used as the sole basis of setting emission limitations or

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<sup>37</sup> Final SO<sub>2</sub> Rule §at 35,370.

<sup>38</sup> *See id.* at 35,551 (describing dispersion modeling as "the most technically appropriate, efficient and readily available method for assessing short-term ambient SO<sub>2</sub> concentrations in areas with large point sources.").

<sup>39</sup> *Id.* at 35,570.

<sup>40</sup> EPA White Paper at 3-4.

<sup>41</sup> *Montana Sulphur*, 666 F.3d at 1184.

<sup>42</sup> *Id.* at 1185; *see also Sierra Club v. Costle*, 657 F.2d 298, 332 (D.C. Cir. 1981) ("Realistically, computer modeling is a useful and often essential tool for performing the Herculean labors Congress imposed on EPA in the Clean Air Act"); *Republic Steel Corp. v. Costle*, 621 F.2d 797, 805 (6th Cir. 1980) (approving use of modeling to predict future violations and incorporating "worst-case" assumptions regarding weather and full-capacity operations of pollutant sources).

To: Mr. Stevens  
Page 10 of 10  
June 12, 2013

determining the ambient concentrations resulting from emissions from an industrial source. These should be based on an appropriate modeling analysis.<sup>43</sup>

Similarly, Roger Brode is currently a physical scientist in EPA's Air Quality Modeling Group and co-chairs the AMS/EPA Regulatory Model Improvement Committee (AERMIC) and the AERMOD Implementation Workgroup.<sup>44</sup> Mr. Brode has stated under oath that AERMOD is "readily capable of accurately predicting whether the revised primary SO<sub>2</sub> NAAQS is attained and whether individual sources cause or contribute to a violation of the SO<sub>2</sub> NAAQS."<sup>45</sup> Mr. Brode has explained:

As part of the basis for EPA adopting the AERMOD model as the preferred model for nearfield applications in the *Guideline on Air Quality Models*, Appendix W to 40 CFR Part 51, the performance of the AERMOD model was extensively evaluated based on a total of 17 field study data bases (AERMOD: Latest Features and Evaluation Results. EPA-454/R-03-003. U.S. Environmental Protection Agency, Research Triangle Park (2003), portions of which are attached to this affidavit) ("EPA 2003"). The scope of the model evaluations conducted for AERMOD far exceeds the scope of evaluations conducted on any other model that has been adopted in Appendix W to Part 51. These evaluations demonstrate the overall good performance of the AERMOD model based on technically sound model evaluation procedures, and also illustrate the significant advancement in the science of dispersion modeling represented by the AERMOD model as compared to other models that have been used in the past. In particular, adoption of the AERMOD model has significantly reduced the potential for overestimation of ambient impacts from elevated sources in complex terrain compared to other-models.<sup>46</sup>

The power plants discussed in these comments are clearly elevated sources.

EPA's practice in a number of other contexts also demonstrates that modeling is a technically superior approach for ascertaining impacts on NAAQS, and the history of EPA's preference for modeling to evaluate compliance rather than monitoring. For example, all Nitrogen Dioxide, Particulate Matter with a diameter smaller than 2.5 microns, and SO<sub>2</sub> NAAQS, and Prevention of Significant Deterioration increment compliance verification analyses are performed with air dispersion modeling, such as running AERMOD in a manner consistent with the *Guideline on Air Quality Models*.<sup>47</sup> Indeed, in order to ensure consistency in how air impacts are determined, both existing

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<sup>43</sup> Declaration of John C. Vimont at 1, 11 (emphasis added), attached hereto as Exhibit 6.

<sup>44</sup> Declaration of Roger W. Brode at 1, 2, attached hereto as Exhibit 7.

<sup>45</sup> *Id.* at 2.

<sup>46</sup> *Id.* at 3-4 (emphasis added).

<sup>47</sup> 40 C.F.R. § 52.21(I)(1).

To: Mr. Stevens  
Page 11 of 11  
June 12, 2013

sources and newly permitted sources should be assessed using the same methods. AERMOD modeling performs particularly well in evaluating emission sources with one or a handful of large emission points. The stacks are well-characterized in terms of location, dimensions and exhaust parameters, and have high release heights. In addition many plants have SO<sub>2</sub> continuous emission monitoring system (“CEMS”) data. AERMOD accurately models medium-to-large SO<sub>2</sub> sources—even with conditions of low wind speed, the use of off-site meteorological data, and variable weather conditions. For example, AERMOD has been tested and performs very well during conditions of low wind speeds:

AERMOD’s evaluation analyses included a number of site-specific meteorological data sets that incorporate low wind speed conditions. For example, the Tracy evaluation included meteorological data with wind speeds as low as 0.39 meter/second (m/s); the Westvaco evaluation included wind speeds as low as 0.31 m/s; the Kincaid SO<sub>2</sub> evaluation included wind speeds as low as 0.37 m/s; and the Lovett evaluation included wind speeds as low as 0.30 m/s. Concerns . . . regarding AERMOD’s ability to model low wind speed conditions seem to neglect the data used in actual AERMOD evaluations.<sup>48</sup>

EPA has noted as much for years: “[a]mbient monitoring data and air quality modeling data for a particular area can sometimes appear to conflict. This is primarily due to the fact that modeling results may predict maximum SO<sub>2</sub> concentrations at receptors where no monitors are located.”<sup>49</sup>

Moreover, EPA has found that reliance on modeling is particularly critical when monitors networks are sparse. EPA said: “[i]n lieu of relying on monitors to assure the NAAQS are protected, particularly when the monitoring network is sparse, EPA believes enforceable emission limits should be established that, through modeling, demonstrate that the NAAQS would be protected.”<sup>50</sup> Florida openly admits that it does not have a monitoring network or strategy in place to adequately ensure the attainment and maintenance of the 2010 SO<sub>2</sub> NAAQS.<sup>51</sup> As EPA suggested, the lack of a monitoring network, like that in Florida, is precisely the situation in which modeling should occur. In this instance, reliance on modeling is vital to ensure that the NAAQS are maintained and that no exceedances of the NAAQS will occur.

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<sup>48</sup> Comments of Camille Sears 1, at 10, attached hereto as Exhibit 8 (citing AERMOD evaluations and modeled meteorological data, *available at* [http://www.epa.gov/ttn/scram/dispersion\\_prefrec.htm](http://www.epa.gov/ttn/scram/dispersion_prefrec.htm)).

<sup>49</sup> 1994 SO<sub>2</sub> Guideline Document at 2-6.

<sup>50</sup> Disapproval of Air Quality Implementation Plans; Montana; Maintenance of Air Pollution Control Equipment for Existing Aluminum Plants, 71 Fed. Reg. 48,222, 4825 (Jan. 30, 2006).

<sup>51</sup> See SIP Proposal at 4 (the development of a monitoring network is “ongoing”).

To: Mr. Stevens  
Page 12 of 12  
June 12, 2013

In sum, neither Florida's SIP, nor the current, permitted emission limits for plants, like Crystal River Plant and Lansing Plant, ensures that counties in Florida will achieve and maintain the new one-hour SO<sub>2</sub> NAAQS. To satisfy Florida's obligations under the Act, FDEP must include adequate emissions limits in the SIP with one-hour averaging periods. EPA has acknowledged that for the one-hour SO<sub>2</sub> NAAQS modeling is the most accurate means of determining attainment with the NAAQS.<sup>52</sup> Accordingly, FDEP should include source-specific SO<sub>2</sub> emission limits in the SIP that when modeled show no exceedances of the NAAQS.

II. THE FLORIDA INFRASTRUCTURE SIP MUST INCLUDE PROVISIONS TO ENSURE THAT THERE IS ADEQUATE PERSONEL, FUNDING, AND LEGAL AUTHORITY UNDER STATE LAW TO CARRY OUT ITS SIP.

Every SIP is required to adequately provide personnel, funding, and legal authority under state law to carry out the implementation of a SIP.<sup>53</sup> Florida has failed to demonstrate that its SIP meets this basic requirement. To fulfill this requirement, Florida cites Florida Statute 403.061(4), which allows FDEP to "[h]ire only such employees as may be necessary to effectuate the responsibilities of the department."<sup>54</sup> While we certainly appreciate that FDEP has hiring authority, it is critical that Florida also demonstrate that it has sufficient resources to do this hiring and to run the program. In this regard, Florida only cites a license registration fee of \$1 per vehicle registration sold in Florida as finically contributing to the FDEP funding for SIP implementation.<sup>55</sup> FDEP has not demonstrated that this meager amount will provide the financial support necessary to implement 2010 SO<sub>2</sub> NAAQS. Perhaps recognizing its inability to demonstrate that it satisfies the requirement of Section 110(a)(2)(E) of the CAA, FDEP hopes that EPA will simply ignore these failings and approve the SIP. In this SIP submission, FDEP notes that when "EPA does a completeness determination and final approval for any SIP submittal, it implicitly determines that the requirements of CAA 110(a)(2)(E) are met." A completeness determination only demonstrates that the EPA has enough information to determine the adequacy of the SIP. It is not a determination of the SIP's adequacy in itself. Rather, EPA must judge, on the record which FDEP provides, whether Florida in fact does have sufficient resources and personnel to fulfill its obligations. FDEP has not yet made this demonstration. Thus, FDEP must revise its SIP to comply with Section 110(a)(2)(E).

<sup>52</sup> Final SO<sub>2</sub> Rule at 35,551, 35,570.

<sup>53</sup> See 42 U.S.C. 7410(a)(2)(E).

<sup>54</sup> SIP Proposal at 6.

<sup>55</sup> *Id.*

To: Mr. Stevens  
Page 13 of 13  
June 12, 2013

III. FLORIDA MAY NOT RELY ON ITS UNAPPROVED REGIONAL  
HAZE PROGRAM TO ASSURE COMPLIANCE WITH SIP  
REQUIREMENTS

Finally, we note that Florida relies in significant part on its unapproved regional haze program to demonstrate that the Infrastructure SIP complies with section 110(a)(2)(D)(i)(II), which requires SIPs to include provisions to ensure that in-state emissions do not interfere with visibility protections in other states. Moreover, this provision is not implicated by the *EME Homer City Generation* decision.<sup>56</sup> Because the plan has not yet been approved, Florida's reliance on this program is premature. Indeed, we have serious concerns about Florida's haze plan. We incorporate our comments to EPA on this point by reference.<sup>57</sup>

IV. CONCLUSION

The SIP is currently inadequate to achieve and maintain compliance with the one-hour SO<sub>2</sub> NAAQS, as described above. FDEP must adopt new provisions into the SIP to protect the public health and comply with the Act's requirements. The Sierra Club would be happy to provide any other information that might assist FDEP in evaluating the impacts of these sources and developing a SIP in full compliance with the Act.

Respectfully submitted,



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<sup>56</sup> *EME Homer City Generation v. EPA*, 696 F.3d 7 (D.C. Cir 2012) (vacating the rule because it required upwind states to reduce emissions by more than their own significant contributions to downwind states' nonattainment and did not allow states to implement reductions through SIPs before issuing FIPs).

<sup>57</sup> See Comments of Earthjustice, Sierra Club, and National Parks Conservation Association (Jan. 9, 2013) on EPA Docket No. -R04-OAR-2010-0935, attached hereto as Exhibit 9.

To: Mr. Stevens  
Page 14 of 14  
June 12, 2013

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