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VIA FIRST CLASS MAIL AND E-MAIL (Jeff.Koerner@dep.state.fl.us)

Jeffery F. Koerner, Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management
FL Department of Environmental Protection
2600 Blainstone Road, MS #5505,
Tallahassee, Florida 32399-2400

**RE: Comments Concerning Tampa Electric Company's Big Bend Station
Proposed Title V Operating Permit (Permit No. 0570039-072-AV)**

Dear Mr. Koerner:

Sierra Club submits the following comments on the proposed Title V Operating Permit No. 0560039-072-AV ("Proposed Permit") published by the Florida Department of Environmental Protection ("FLDEP") for Tampa Electric Company's ("TEC") Big Bend Station ("the Plant" or "Big Bend") in Apollo Beach, Hillsborough County, Florida.

The Proposed Permit fails, in several key respects, to require performance consistent with the Clean Air Act ("CAA" or "the Act"), Florida's State Implementation Plan ("SIP"), and state law and regulations. Accordingly, Sierra Club urges FLDEP to correct these defects and notice a revised draft permit for public review before issuing a final Title V permit for Big Bend.

I. BACKGROUND

A. Factual Background

Big Bend is a nominal 1,892 megawatt ("MW"), fossil fuel-burning electric generation facility in Apollo Beach, Hillsborough County, Florida. The Plant's coal-burning boilers (Units 1, 2,

3, and 4) have a nominal maximum heat input of 4,037, 3,996, 4,115, and 4,330 million British thermal units per hour (MMBtu/hr), respectively. Proposed Permit at 2. In addition, Units 1, 2, and 3 each have a design electrical generating capacity of 445 MW. *Id.* at 8. Unit 4's designed electrical generating capacity is 486 MW. *Id.* at 19. These units began operations in 1970, 1973, 1976, and 1985, respectively. *Id.* at 8 and 19. Each coal-burning unit is equipped with an electrostatic precipitator. See FLDEP Statement of Basis for Title V Air Operation Permit Renewal (hereinafter "Statement of Basis") at 3. Units 1 and 2 share a common stack that is equipped with wet flue gas desulfurization ("FGD") equipment installed in 1999. Proposed Permit at 8. The Unit 3 stack and Unit 4 stack are also equipped with wet FGD systems, installed in 1995. *Id.* at 8 and 19.

Big Bend's current Title V permit was issued on January 1, 2010, revised a few times, and expired by its own terms on December 31, 2014. The Proposed Permit and accompanying Statement of Basis were issued for notice and comment on December 19, 2014, making Sierra Club's submission of these comments timely.

Sierra Club is the oldest and largest grassroots environmental group in the United States, with approximately 620,000 members nationally, including more than 28,000 members in Florida. These members enjoy and are entitled to the benefits of natural resources including air, water, and soil; forests and cropland; parks, wilderness areas, and other green space; and flora and fauna, which are negatively impacted by pollutants from the Big Bend Station—which emitted a reported 10,907 tons of sulfur dioxide ("SO₂"), 4,783 tons of nitrogen oxides ("NO_x"), and 10,976,310 short tons of carbon dioxide ("CO₂") in 2013.¹

B. Governing Law and Regulatory Background

The Clean Air Act is intended to protect and enhance the public health and public welfare of the nation. See 42 U.S.C. § 7401(b)(1). To this end, the U.S. Environmental Protection Agency ("EPA") is required to promulgate primary and secondary National Ambient Air Quality Standards ("NAAQS") for six "criteria" pollutants—sulfur dioxides, nitrogen oxides, particulate matter, carbon monoxide, ozone, and lead. *Id.* at § 7409. Primary NAAQS are health-based standards and must be set at a level adequate to protect the public from the harmful effects of exposure to the criteria pollutants with an adequate margin of safety. *Id.* For sulfur dioxide ("SO₂") pollution, EPA adopted a one-hour standard set at 75 parts per billion (ppb) (equivalent to 196.2 micrograms per cubic meter), recognizing that the prior 24-hour and annual standards did not adequately protect the public against adverse respiratory effects associated with short term (5-minute to 24-hour) exposure. See U.S. EPA, Final Rule, Primary National Ambient Air Quality

¹ EPA's Clean Air Markets Database, Query, 2013 Emissions from Big Bend, available at <http://ampd.epa.gov/ampd/>.

Standard for Sulfur Dioxide, 75 Fed. Reg. 35,520 (June 22, 2010) (codified at 40 C.F.R. § 50.17(a)). Due to both the shorter averaging time and the lower concentration value, the one-hour SO₂ NAAQS is far more protective than the prior standards and is projected to have enormous public health benefits once implemented—EPA has estimated that 2,300 to 5,900 premature deaths and 54,000 asthma attacks a year will be prevented by the new standard. *See* U.S. EPA, Final Regulatory Impact Analysis (RIA) for the SO₂ National Ambient Air Quality Standards (NAAQS) tbl. 5.14 (2010), available at <http://www.epa.gov/ttnecas1/regdata/RIAs/fso2ria100602full.pdf>.

States that are delegated implementation authority under the CAA (such as Florida) develop and implement plans—state implementation plans or “SIPs”—by which they ensure attainment of the federal NAAQS. The air quality standards contained in each SIP are applied to specific major emissions sources through a state’s “Title V” permitting program. *See* 42 U.S.C. §§ 7410, 7661. Major stationary sources of air pollution are prohibited from operating except in compliance with an operating permit issued under Title V of the Act. 42 U.S.C. § 7661a(a); 40 C.F.R. § 70.5(a); Section 403.087(1), Florida Statutes (“F.S.”); Rule 62-4.030, Florida Administrative Code (“F.A.C.”). Title V permits must provide for all federal and state regulations in one legally enforceable document, thereby ensuring that all CAA requirements are applied to the facility and that the facility is in compliance with those requirements. *See* 42 U.S.C. §§ 7661a(a) and 7661c(a); 40 C.F.R. § 70.6(a)(1).

A Title V permit is issued for a term of no more than five years, 40 C.F.R. § 70.6(a)(2), with a timely and complete application for renewal filed by the source at least six months prior to the date of permit expiration. 40 C.F.R. § 70.5(a)(1)(iii). Once a complete renewal application has been submitted, the existing permit governs the source’s operation until the application is acted upon by the permitting agency. *See* 40 C.F.R. § 70.7(b); 40 C.F.R. § 70.7(a)(2) (“[T]he program shall provide that the permitting authority take final action on each permit application (including a request for permit modification or renewal) within 18 months . . . after receiving a complete application.”). Permit renewals are subject to the same procedural requirements, including those for public participation and federal review, which apply to initial permit issuance. *See* 40 C.F.R. § 70.7(c)(1)(i).

EPA delegated to Florida, through FLDEP, the authority to administer the CAA’s Title V operating permit program within the State. Florida’s Title V operating permits program is enacted through Florida Administrative Code, Chapter 62-213. *See* Statement of Basis at 3. Title V permits issued by FLDEP must include enforceable emission limitations and standards and such other conditions as are necessary to assure compliance with all applicable requirements at the time of permit issuance. *See* 42 U.S.C. § 7661c(a); 40 C.F.R. § 70.6(a)(1); *see also* Rule 62-213.440(1), F.A.C. “Applicable requirements” include standards or other requirements of the Clean Air Act that are codified in state or federal laws, such as regulations that have been

promulgated or approved by EPA through rulemaking at the time of permit issuance but that have future effective compliance dates, as well as standards provided for in Florida's SIP that are effective at the time of permit issuance. *See* 40 C.F.R. 70.2; *see also* Rule 62-210.200(21), F.A.C. (defining "applicable requirement").

Notably, included among the applicable requirements with which a Title V permit issued by FLDEP must comply is the pollution prohibition in Florida's primary environmental control statute, Chapter 403, Florida Statutes, which states: "it shall be prohibited for any person [t]o cause pollution . . . so as to harm or injure human health and welfare . . ." ² Section 403.161(1)(a), F.S. Incorporating this pollution prohibition into Florida's Title V permits is consistent with documentation FLDEP submitted to EPA "demonstrating the correlation between the Section 110(a)(2) infrastructure elements and the Florida Statutes and SIP-approved Florida rules that address each such element." FLDEP Letter of January 8, 2014, to EPA re Air Program: Addendum to State Implementation Plan Infrastructure Confirmation for the 2010 Revised National Ambient Air Quality Standard for Sulfur Dioxide, at 1, available at http://www.dep.state.fl.us/air/rules/regulatory/naaqs_for_sulfur_dioxide/2014-01-08_Addendum-SIP_Infrastructure_Confirmation_2010_Revised_NAAQS_for_SO2.pdf. According to the State's own documentation, in acting under its authority to implement a SIP and to conduct various air program activities, FLDEP relies broadly on Florida Statutes, including provisions that are not yet incorporated into its proposed SO₂ NAAQS Infrastructure SIP. In the same documentation, FLDEP confirms that Florida Statutes, such as Chapter 403, "are essential to Florida's implementation of the SO₂ NAAQS." *Id.* at 4.

Thus, FLDEP-issued Title V permits must limit power plant emissions to avoid exceedances of an applicable NAAQS because such exceedances constitute pollution as prohibited under Florida Statutes, and FLDEP relies on those statutes for its authority for SIP implementation and Title V permitting. Note that "pollution", as defined by Chapter 403, is "the presence in the outdoor atmosphere . . . of any substances, contaminants, noise, or manmade or human-induced impairment of air . . . or alteration of the chemical, physical, biological, or radiological integrity of air . . . in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare, animal or plant life, or property or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation unless authorized by applicable law." Section 403.031(7), F.S. The Florida Administrative Code likewise defines "air

² Title V permits are meant to accomplish the important task of identifying and recording requirements and must be effective vehicles for defining compliance obligations. Fla. Stat. § 403.161 is an applicable regulation for any source in Florida which generates air contaminants. Accordingly, the Title V permit issued by FLDEP must explicitly contain and reference the language of Fla. Stat. § 403.161, and include necessary operation and emissions limitations sufficient to ensure the requirement will be met.

pollution” as “[t]he presence in the outdoor atmosphere of the state of any one or more substances or pollutants in quantities which are or may be harmful or injurious to human health or welfare, animal or plant life, or property, or unreasonably interfere with the enjoyment of life or property, including outdoor recreation.” Rule 62-210.200(16), F.A.C. EPA sets the NAAQS at levels that are adequate to protect public health. Thus, concentrations of air pollutants that exceed the NAAQS pose a threat to human health and welfare and, thus, are prohibited pollution under Florida law. Consequently, to comply with Florida’s pollution prohibition, FLDEP-issued Title V permits must appropriately limit power plant emissions that cause or contribute to an exceedance of an applicable NAAQS.

FLDEP has adopted and incorporated by reference EPA’s one-hour NAAQS for SO₂, as well other federal air pollution standards. See Rule 62-204.800(1)(b)(20), F.A.C. FLDEP’s rules require polluters to give “reasonable assurance” that their activities will meet applicable pollution standards. Rule 62-4.030, F.A.C. FLDEP may not issue a permit unless the applicant has sufficiently demonstrated that its activities “will not cause pollution in violation of any of the provisions of Chapter 403, F.S., or the rules promulgated thereunder.” Rule 62-4.030, F.A.C.; see also Rule 62-4.070(1), F.A.C. Accordingly, with regard to SO₂ pollution, before a permit can be issued, a source must give FLDEP reasonable assurances that operation of the plant will not cause or contribute to any exceedance of the one-hour SO₂ NAAQS. In the context of environmental permits, Florida courts and administrative agencies hold that “reasonable assurance” means a demonstration that the installation has a “substantial likelihood” of compliance with applicable standards, or a “substantial likelihood that the project will be successfully implemented.” *Metro. Dade County v. Coscan Fla., Inc.*, 609 So. 2d 644, 648 (Fla. 3d DCA 1992) (“*Coscan*”); see also *City of Newberry v. Watson Constr. Co.*, Case No. 95-0753 (DOAH Aug. 9, 1996) (citing *Coscan*).

Notably, air dispersion modeling is viewed favorably in Florida cases deciding whether applicants have met the reasonable assurance test for compliance with the NAAQS.³ In addition, air dispersion modeling is the best way to assess SO₂ concentrations for NAAQS implementation purposes. In its final rule, EPA recognized the “strong source-oriented nature of SO₂ ambient impacts,” 75 Fed. Reg. at 35,370, and concluded that the appropriate methodology for purposes of determining compliance, attainment, and nonattainment with the new NAAQS is air dispersion modeling. *Id.* at 35,551 (describing dispersion modeling as “the most technically appropriate, efficient, and readily available method for assessing short-term ambient SO₂ concentrations in

³ See, e.g., *Haile Community Ass’n v. Florida Rock Industries, Inc.*, Case No. 95-5531 (DOAH July 23, 1996) ([T]he applicant “provided reasonable assurance through air quality modeling that [it] would meet primary and secondary ambient air quality standards.”); *Arnold R. Di Silvestro v. Medico Envtl. Servs., Inc.*, Case No. 92-0851 (DOAH Feb. 19, 1993) (“The air model shows that none of the National Ambient Air Quality Standards for any of the criteria pollutants would be exceeded by adding either the impact of the . . . facility [at issue]” or another nearby polluting facility, or both facilities combined).

areas with large point sources.”). In promulgating the SO₂ NAAQS, EPA explained further that, for the one-hour standard, “it is more appropriate and efficient to principally use modeling to assess compliance for medium to larger sources.”⁴ *Id.* at 35,570. EPA has used modeling for attainment designations and SIP revisions for decades, with Courts consistently upholding this practice. *See Genon Rema, LLC v. U.S. EPA*, No. 12-1022, slip op. (3rd Cir. July 12, 2013); *In re Florida Power & Light Co., Manatee Ormulsion Project, Application No. 94-35*, Case No. 94-5675EPP (DOAH June 30, 1998); *Haile Community Ass’n, supra* n. 21; *Arnold R. DiSilvestro, supra* n. 21. Indeed, EPA urges states to use modeling with regard to SO₂ given the strengths and the weaknesses of an alternative, monitoring-based approach, stating that “the current monitoring network provides relatively limited geographic coverage, and many monitors in the existing network are not sited with the objective of characterizing source-oriented maximum concentrations.” U.S. EPA, Next Steps for Designations and Implementation of the Sulfur Dioxide National Ambient Air Quality Standard (Feb. 6, 2013), available at <http://www.epa.gov/air/sulfurdioxide/pdfs/20130207SO2StrategyPaper.pdf>.

In addition to emission limitations and standards, each Title V permit must contain sufficient monitoring, recordkeeping, reporting, and inspection and entry requirements to assure compliance with permit limits. *See* 40 C.F.R. § 70.6(a)(1), § 70.6(a)(3), and § 70.6(c)(2); *see also* Rule 62-213.440(1)(b), F.A.C. Monitoring requirements must “assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement.” 40 C.F.R. § 70.6(a)(3)(i)(B); 40 C.F.R. § 70.6(c)(1) (requiring “compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit”) (emphasis added); *see also* Rule 62-213.440(1)(b)1.b, F.A.C. These monitoring requirements consist of both “periodic” and “umbrella” monitoring rules. *See generally Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2011).

The periodic monitoring rule provides that where an applicable requirement does not, itself, “require periodic testing or instrumental or noninstrumental monitoring,” the permit-writer must develop terms directing “periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source’s compliance with the permit.” 40 C.F.R. § 70.6(a)(3)(i)(B); 40 C.F.R. § 70.6(c)(2)(iv) (requiring that substances and parameters are to be sampled and monitored at reasonable intervals so as to assure compliance with the permit or applicable requirements); *see also* Rule 62-213.440(1)(b)1.b, F.A.C. In other words, if compliance with a given applicable requirement is a condition of the permit, the permit must

⁴ *See also Montana Sulphur & Chemical Co. v. EPA*, 666 F.3d 1174 (9th Cir. 2012) (affirming use of modeling to ascertain SO₂ pollution impacts); U.S. EPA, Final Response to Petition From New Jersey Regarding SO₂ Emissions From the Portland Generating Station, 76 Fed. Reg. 69,052 (Nov. 7, 2011) (using modeling to set emission limits sufficient to prevent air pollution).

contain monitoring of a frequency and type sufficient to assure compliance to the emitter, to the permitting authority, and to the public.

In instances where governing regulations set forth monitoring requirements inadequate to ensure compliance with certain applicable standards, the Title V permit must supplement those requirements to the extent necessary to ensure compliance with the permit's terms and conditions. This "umbrella" monitoring rule, 40 C.F.R. § 70.6(a)(3)(C), backstops the periodic requirement by making clear that permit writers must also correct "a periodic monitoring requirement inadequate to the task of assuring compliance," *Sierra Club*, 536 F.3d at 675. EPA has confirmed the rigor of Title V permit monitoring requirements. *See In re U. S. Steel Corp.*, Petition No. V-2009-03, 2011 WL 3533368, at *5 (EPA Jan. 31, 2011) (concluding that "[t]he rationale for the monitoring requirements . . . must be clear and documented in the permit record" and that adequate monitoring is determined by careful, content-specific inquiry into the nature and variability of the emissions at issue). Relevant Florida regulations are in accord: the permit, as a whole, must contain compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. *See* Rule 62-213.440(1)(b), F.A.C.

II. SUBSTANTIVE COMMENTS

The Proposed Permit for Big Bend fails to satisfy certain basic requirements under the Clean Air Act. For the reasons discussed in detail below, Sierra Club urges FLDEP to address the shortcomings of the Proposed Permit and to make a revised permit available for public comment prior to issuing a final Title V permit for the Plant.

A. The Proposed Permit Fails to Prevent Violations of Florida's Prohibition on Air Pollution with Regard to the Plant's Sulfur Dioxide Emissions.

To be sure, FLDEP and TEC's modeling-based efforts to set new SO₂ limits for the Plant in the Proposed Permit are necessary and appropriate given: (1) the more protective SO₂ NAAQS that went into effect in 2010, (2) the overwhelming support for air dispersion modeling under federal and state law, discussed above, and (3) the Plant's contributions to SO₂ pollution in the Hillsborough County non-attainment area, discussed below. With these comments, Sierra Club urges FLDEP to correct certain flaws in the Proposed Permit, including flaws in FLDEP's proposed SO₂ limits, to assure the Plant's compliance with all applicable requirements, and ultimately to protect the health and welfare of the downwind communities.

In particular, the Proposed Permit fails to explicitly incorporate the State's prohibition of air pollution—an "applicable requirement"—and to include numerical SO₂ emissions limitations with averaging periods sufficient to ensure the requirement will be met. As a result, the Proposed Permit lacks the clearly defined compliance obligations needed to ensure that SO₂

will not be emitted “in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare” and, as a result, fails to satisfy requirements of the CAA. In addition, the Plant has failed to provide FLDEP with reasonable assurances that operation of the Plant will not interfere with the attainment and maintenance of the one-hour SO₂ NAAQS.

In order to fulfill its obligations as the delegated permitting authority, FLDEP must revise the Proposed Permit to explicitly include the prohibition on air pollution and to establish numerical limitations based on sufficiently short averaging periods that restrict the emission of SO₂ to levels that will not be injurious to human health or welfare. Because EPA set the 2010 SO₂ NAAQS at levels designed to ensure the protection of human health, the numerical limitations necessary to ensure that Big Bend’s SO₂ emissions will not be injurious to human health and violate the State’s prohibition on air pollution are those that guarantee that its emissions will not cause or contribute to exceedances of the one-hour primary NAAQS (75 ppb) downwind of the Plant.⁵ As demonstrated below, the limits for SO₂ emissions in the Proposed Permit are not protective enough to prevent exceedances of the 2010 SO₂ NAAQS.

As currently drafted, the Proposed Permit limits SO₂ emissions from Units 1, 2, and 3 to “0.25 lb/MMBtu from each unit based on a 30-day rolling average.” Proposed Permit at 11. According to the Proposed Permit, compliance with this emission limit will demonstrate compliance with the following applicable SO₂ emission standards:

- (1) Each unit shall not exceed 6.5 lb/MMBtu based on a 2-hour average.
- (2) Units 1 – 3, combined, shall not exceed 31.5 tons/hour based on a 3-hour average.
- (3) Units 1 – 3, combined, shall not exceed 25 tons/hour based on a 24-hour block average.
- (4) Units 1 and 2, combined, shall not exceed 16.5 tons/hour based on a 24-hour block average.

⁵ See, e.g., Draft Title V operating permit for Mt. Tom Generating Station, Holyoke, Massachusetts, requiring that: “[i]n accordance with [state prohibition on air pollution] the Permittee shall demonstrate that the facility does not cause or contribute to an exceedance of U.S. EPA’s one hour SO₂ NAAQS (40 C.F.R. 50.71).” Mt. Tom Proposed Permit at 20, attached hereto as Exhibit 1; see also October 1, 2014 letter to Mt. Tom Plant Manager from Mass DEP, providing “notice to Mt. Tom that if it decides to resume operation, then before the facility resumes operation the report must be completed and all related Air Quality Permits amended to reflect adjusted emission rates that will ensure compliance with the SO₂ NAAQS, or Mt. Tom may be subject to enforcement under 310 CMR 5.00,” at 2, attached hereto as Exhibit 2; see also *Palmer Renewable Energy, LLC*, OADR Dkt. No. 2011-021 & 022, 2012 WL 5377276, at *19 (Mass. Dep’t Env. Prot. July 9, 2012), available at <http://www.mass.gov/dep/service/adr/12decis/palmer2011-021and022rfdafterremand.doc> (state air agency properly exercised “its regulatory charge by relying upon the PM_{2.5} NAAQS to determine whether a plant [emitting PM_{2.5}] will cause or contribute to a condition of air pollution”).

(5) Unit 3 shall not exceed 8.5 tons/hour based on a 24-hour block average.

Id. In addition, effective April 16, 2015, the Proposed Permit limits SO₂ emissions from Units 1, 2, and 3 to “0.20 lb/MMBtu or 1.5 pound per megawatt hour (lb/MWh) from each unit based on a 30-day rolling average.” *Id.* Again, according to the Proposed Permit, compliance with this emission limit will demonstrate compliance with the following applicable emission standards:

- (1) Each unit shall not exceed 0.25 lb/MMBtu based on a 30-day rolling average.
- (2) Each unit shall not exceed 6.5 lb/MMBtu based on a 2-hour average.
- (3) Units 1 – 3, combined, shall not exceed 31.5 tons/hour based on a 3-hour average.
- (4) Units 1 – 3, combined, shall not exceed 25 tons/hour based on a 24-hour block average.
- (5) Units 1 and 2, combined, shall not exceed 16.5 tons/hour based on a 24-hour block average.
- (6) Unit 3 shall not exceed 8.5 tons/hour based on a 24-hour block average.

Id. For Big bend Unit 4, the Proposed Permit limits SO₂ emissions to:

- 0.82 lb/MMBtu heat input and 10% of the potential combustion concentration (90% reduction) based on a 30-day rolling average when combusting solid fuels.
- 1.20 lb/MMBtu heat input and 10% of the potential combustion concentration (90% reduction) based on a 30-day rolling average when combusting solid fuels.

Id. at 22. In addition, effective April 16, 2015, SO₂ emissions from Unit 4 “shall not exceed 0.20 lb/MMBtu or 1.5 lb/MWh based on a 30-day rolling average.” *Id.*

As demonstrated by refined air dispersion modeling, due to the excessive length of their averaging periods, the Proposed Permit’s numerical SO₂ emissions limitations do not assure compliance with the applicable requirement of Fla. Stat. § 403.161(1)(a)—Florida’s pollution prohibition. See Big Bend Power Station, Apollo Beach, Florida, Evaluation of Compliance with the 1-hour NAAQS for SO₂ (January 19, 2015) (hereinafter “Big Bend Modeling Report”), attached hereto as Exhibit 3.

Where there is evidence that numerical emissions limitations or other standards contained in a Title V permit do not assure compliance with an applicable narrative requirement, such as Florida’s pollution prohibition, necessary numerical limitations must be included in the

permit to assure compliance.^{6,7} Here, the evidence is an expert air dispersion modeling analysis of the Plant's SO₂ emission limits, conducted to determine whether allowable SO₂ emissions from the Plant's coal-burning boilers cause or contribute to exceedances of the NAAQS and thereby violate the statutory prohibition on air pollution. This modeling analysis examined the Plant's currently permitted allowable SO₂ emission limits contained in Title V Permit No. 0570039-061-AV (as revised on April 10, 2013), the Plant's measured maximum 2013 SO₂ emissions, and the currently proposed allowable SO₂ emissions contained in the Proposed Permit. The dispersion analysis was conducted in adherence to all available EPA modeling guidance for evaluating source impacts on attainment of the one-hour SO₂ NAAQS via aerial dispersion modeling, including the AERMOD Implementation Guide; USEPA's Applicability of Appendix W Modeling Guidance for the 1-hour SO₂ National Ambient Air Quality Standard, August 23, 2010; modeling guidance promulgated by USEPA in Appendix W to 40 C.F.R. 51; USEPA's March 2011 Modeling Guidance for SO₂ NAAQS Designations, available at <http://www.epa.gov/ttn/scram/SO2%20Designations%20Guidance%202011.pdf>; and USEPA's December 2013 SO₂ NAAQS Designations Modeling Technical Assistance Document, available at <http://epa.gov/oaqps001/sulfurdioxide/pdfs/SO2ModelingTAD.pdf>. Notably, where any assumptions had to be made in the running of the model, the modeler employed conservative inputs that favor the prediction of lower impacts from the plants so that the results, in fact, are likely to understate the Plant's true SO₂ emissions impacts.

The expert modeling results demonstrate that, at the emission levels allowed under the Plant's current Title V Permit (Revision No. 0570039-061-AV), the Plant by itself is predicted to

⁶ EPA has stated that where a state agency has "reason to believe that a person is in violation of [a general prohibition on air pollution], [the state agency] has the authority . . . to do any analysis it deems necessary to ensure compliance with the Act and the Rules." *In the Matter of Hercules, Inc.*, Petition IV-2003-01, 2004 (November 10, 2004) at 8 (hereinafter "*Hercules*"). Moreover, "[s]hould [the state agency] determine that a person is in violation of [the general prohibition on air pollution], it has the authority to include and/or revise emission limitations, i.e., numerical limits and/or equipment or operation or maintenance requirements, in the applicable air quality permit." *Id.* Indeed, FLDEP's prohibition on air pollution recognizes that there may be times when compliance with the specific emission limitations or other requirements in the permit may be insufficient to prevent a condition of air pollution as defined by the Florida Statute and that in such circumstances FLDEP has broad authority to impose necessary emission limitations in a Title V permit. See *Hercules* at 10. Thus, where there is evidence to show that the prohibition on air pollution will be violated, FLDEP should include necessary limits in the Plant's Title V permit in order to assure compliance with the applicable prohibition on air pollution.

⁷ Just as is required when certain monitoring, recordkeeping, or reporting requirements are insufficient to assure compliance with an applicable requirement, here, FLDEP must employ a gap-filling method to ensure the Plant's final permit contains numerical SO₂ limits sufficient to ensure compliance with this applicable requirement. Ensuring that the permit contains appropriate numerical limits is essential since the Title V permit is the critical tool enabling the permittee, FLDEP, EPA, and the public to identify all applicable requirements that apply to the Plant's air emissions and to determine whether the facility is complying with those requirements.

cause exceedances of the applicable one-hour SO₂ NAAQS and, consequently, the permit allows SO₂ to be emitted from the Plant in quantities or at levels which are or may be potentially harmful or injurious to human health or welfare, in violation of the law.⁸ See Fla. Stat. § 403.161(1)(a), § 403.031(7) (defining “pollution”). Specifically, as illustrated in the table below, currently permitted allowable emissions from Big Bend are predicted to cause peak impacts of 3,352.1 µg/m³. Big Bend Modeling Report at 3. This is more than 17 times higher than the NAAQS of 196.2 µg/m³—the public health standard set by the EPA.⁹

Big Bend Modeled One-Hour SO₂ Impacts Under Current Permit					
Emissions	Highest Projected Concen. (ug/m³)	Background Concen. (ug/m³)	Total Concen. (ug/m³)	NAAQS (ug/m³)	NAAQS Exceeded?
Allowable ¹⁰	3,352.1	2.6	3,354.7	196.2	YES
Maximum ¹¹	408.6	2.6	411.2	196.2	YES

The fact is quite clear, the allowable numerical SO₂ emissions limits contained in the Plant’s current Title V permit, and carried forward in the Proposed Permit, fail to assure compliance with the State’s prohibition on air pollution, as informed by the ambient level of SO₂ set forth in the NAAQS.

In addition to allowable emissions in the Plant’s current Title V permit, the expert modeling analysis also examined the Proposed Permit’s SO₂ emission limits for Units 1, 2, 3, and

⁸ As discussed above, the one-hour SO₂ NAAQS was designed specifically to prevent the harmful effects of SO₂ pollution on human health and welfare. Accordingly, the one-hour primary SO₂ NAAQS represent a definitive pollution level above which negative public health impacts will occur and are, therefore, dispositive *authority* that such a level of SO₂ pollution is inimical to public health and injurious to human life, in violation of the applicable requirement set forth at Fla. Stat. § 403.161(1)(a). The one-hour SO₂ NAAQS is based on rigorous research and extensive notice and comment rulemaking. Indeed, EPA has recognized the proven causal relationship between SO₂ concentrations above the NAAQS and significant human health damage—“the strongest finding” that EPA’s science advisors can make. See 75 Fed. Reg. at 35,525. Because maintaining concentrations below the NAAQS is necessary to protect public health, concentrations above the NAAQS are necessarily injurious to human health and welfare. See *id.* at 35,548. Therefore, if a source’s emissions of SO₂ cause or are predicted to cause exceedances of the SO₂ NAAQS, those discharges are clearly injurious to human health and violate Fla. Stat. § 403.161(1)(a). See Fla. Stat. § 403.031(7) (defining “pollution”).

⁹ In addition to the impacts allowed under the Plant’s Title V permit, the modeling analysis demonstrates that the Plant’s actual emissions in 2013 resulted in ambient SO₂ pollution concentrations that exceeded the 2010 NAAQS by more than four times. *Id.*

¹⁰ Allowable emissions were obtained from the April 10, 2013 Title V Permit No. 0570039-061-AV. The permit limit of 6.5 lb/MMBtu was used for Units 1, 2, and 3 since it has the shortest averaging period (2 hours) of all applicable limits in the permit and was, therefore, chosen by the expert modeler for comparison with the one-hour NAAQS. The modeled permit limit for Unit 4 was 0.82 lb/MMBtu.

¹¹ Maximum emissions represent the highest combined emission rate from all units during any single hour as measured during 2013.

4 that are effective after April 16, 2015: 0.2 lb/MMBtu or 1.5 lb/MWh on a 30-day rolling average. Proposed Permit at 11 and 22. Based on expert air dispersion modeling, the proposed limit of 1.5 lb/MWh for Units 1, 2, 3, and 4 would protect air quality consistent the one-hour SO₂ NAAQS if it were accompanied by a one-hour averaging period. See Big Bend Modeling Report at 3.

Big Bend Modeled One-Hour SO₂ Impacts Under Proposed 1.5 lb/MWh Limit					
Emissions	Highest Projected Concen. (ug/m³)	Background Concen. (ug/m³)	Total Concen. (ug/m³)	NAAQS (ug/m³)	NAAQS Exceeded?
Allowable	111.3	2.6	113.9	196.2	NO

Notably, the modeling analysis treated the Proposed Permit limit as a one-hour average, when it is actually proposed as a 30-day rolling average. As a result, the modeling results are overly conservative. Compliance with the one-hour NAAQS (i.e. compliance with the State’s prohibition on air pollution) can only be achieved if the proposed modeled numerical limit of 1.5 lb/MWh is based on a one-hour average. The currently proposed 30-day rolling average is inadequate.

The health-based maximum concentration of SO₂ permitted to exist in the ambient air so as to prevent harm to public health and human life—harm which can be caused by as little as five minutes of exposure—is based on a one-hour averaging time. See 40 C.F.R. § 50.17(a). Accordingly, the Plant’s Title V permit must establish an appropriate SO₂ emission limit, based on an one-hour averaging period for compliance purposes, in order to assure compliance with applicable requirements. A one-hour averaging period must accompany the Proposed Permit’s SO₂ emissions limit, otherwise the Plant could easily exceed the numerical limit for numerous hours a day, each week during those 30 days, thereby causing exceedances of the one-hour NAAQS and violations of the state’s prohibition on air pollution in violation of the law, and yet still comply with the Proposed Permit’s SO₂ emission limit, as long as those higher emissions were balanced out with emissions below the limit over enough hours. This would be contrary to the basis for EPA’s recent lowering of the one-hour SO₂ NAAQS—namely, EPA’s recognition that short-term exposure to SO₂ for time periods as low as five minutes can cause serious health problems. See 75 Fed. Reg. at 35,524. Therefore, Big Bend’s Title V permit must ensure that an appropriately protective SO₂ emissions standard applies at all times by establishing a one-hour averaging period.

FLDEP has a duty to ensure that the Plant is not permitted to discharge SO₂ in a manner or concentration which may be injurious to public health and welfare. See Fla. Stat. § 403.161(1)(a), § 403.031(7) (defining “pollution”). Again, the one-hour SO₂ NAAQS informs the level of ambient SO₂ which is injurious to public health and welfare since the standard was designed to protect human health. See Policy Assessment for the Review of Particulate Matter National Ambient Air Quality Standards (“Policy Assessment”), p. 1-3, available at <http://www.epa.gov/ttnnaqs/standards/pm/data/20110419pmpafinal.pdf>.

EPA guidance has recommended that averaging times, for example in SIP emissions limits, “should not exceed the averaging time of the applicable NAAQS that the limit is intended to help attain.” EPA Memorandum of Apr. 23, 2014, to Regional Air Division Directors, Regions 1 – 10, Guidance for 1-Hour SO₂ NAAQS Nonattainment Area SIP Submissions, at 22, available at <http://www.epa.gov/airquality/sulfurdioxide/pdfs/20140423guidance.pdf>. Thus, “emission limits for attaining the 1-hour SO₂ standard should limit emissions for each hour, without any provision for limiting emissions as averaged across multiple hours.” *Id.* In the most recent guidance on point, EPA advises that “any emissions limits based on averaging periods longer than 1 hour should be designed to have comparable stringency to a 1-hour average limit at the critical emission value.” *Id.* Accordingly, if FLDEP chooses to employ an averaging period longer than one-hour here, the numerical limit for Big Bend’s SO₂ emissions must be ratcheted down to provide adequate assurance that the NAAQS, and the State’s pollution prohibition under section 403.161, F.S., will be met. *See id.* Appendix B (detailing EPA’s guidance for setting longer term average emission limits).

B. The Proposed Permit Impermissibly Allows Compliance with One SO₂ Emission Limit to Demonstrate Compliance with Other SO₂ Emission Limits.

In regard to Units 1, 2, and 3, the Proposed Permit allows compliance with the 0.25 lb/MMBtu and the post-April 16, 2015 0.20 lb/MMBtu or 1.5 lb/MWh emission limits that are based on 30-day rolling averages to demonstrate compliance with a number of other applicable SO₂ emission standards which are based on far shorter averaging periods (e.g. 2 hours, 3 hours, and 24 hours). *See Proposed Permit at 11.* This is improper. Compliance with a numerical emission limitation that is averaged out over a 30-day rolling period does not necessarily assure compliance with a numerical emission limit which is averaged over only two hours, even if the former is a much smaller numerical limit. For instance, compliance with a permit limit that is applicable on a two-hour basis cannot necessarily be determined through compliance with a different and separate emission limit that is applicable on a 30-day rolling average. Due to the extreme effects of even short-term exposure to SO₂ pollution, compliance with the Proposed Permit’s two-hour, three-hour, and 24-hour SO₂ emission limits must be determined separately from any 30-day rolling average limits, unless FLDEP were to sufficiently demonstrate that compliance with the 0.25 lb/MMBtu limit and the post-April 16, 2015, limit of 0.20 lb/MMBtu or 1.5 lb/MWh would in fact assure compliance with these other applicable SO₂ emissions limits.

C. Appropriate SO₂ Numerical Emissions Limits in the Final Permit Should Ameliorate Big Bend’s Contribution to the Nearby Nonattainment Area.

In light of the fact that Florida’s Infrastructure SIP for the 2010 SO₂ NAAQS fails to include source-specific requirements for the Big Bend Station, coupled with the fact that Florida’s

nonattainment SIP is still being developed, sufficiently stringent numerical emission limits should be imposed in the Plant's Title V permit at this time.

Big Bend is located just outside an area designated "nonattainment" under the one-hour SO₂ NAAQS. See Air Quality Designations for the 2010 Sulfur Dioxide (SO₂) Primary National Ambient Air Quality Standard, 78 Fed. Reg. 47,191 (Aug. 5, 2013) (setting forth nonattainment areas under the 2010 SO₂ NAAQS). In fact, expert air dispersion modeling of the Plant's currently permitted SO₂ emissions demonstrates that the Plant has been permitted to emit SO₂ in a manner which can cause and/or contribute to a violation of the NAAQS both inside and outside of Florida's Hillsborough County nonattainment area. See Big Bend Modeling Report at 6 and 7, Figures 1 and 2. In addition, this modeling demonstrates that the proposed limit of 1.5 lb/MWh for Units 1, 2, 3, and 4 could sufficiently protect the nonattainment area, as well as the surrounding area, from Big Bend's SO₂ emissions if the proposed limit is accompanied by a one-hour averaging period. See Big Bend Modeling Report at 3.

To their credit, in advance of filing the State's Nonattainment SIP, FLDEP and TEC worked together to address Big Bend's SO₂ emissions given the Plant's potential to interfere with the attainment and maintenance of the one-hour SO₂ standard in the Hillsborough County nonattainment area. Also, commendably, FLDEP and TEC conducted modeling analyses to inform this effort. However, the longer averaging periods for SO₂ limits in the Proposed Permit miss the mark. FL DEP must modify the Title V renewal permit in accordance with its own rules incorporating the one-hour SO₂ standard, and the shorter, one-hour averaging period mandated by the standard for enforceable emission limits.

Incorporating a numeric SO₂ emissions limit based on a one-hour averaging period will also position FLDEP to submit an approvable nonattainment SIP in April of this year. The nonattainment provisions of the Clean Air Act include rigorous requirements with which states must comply, including offsets and nonattainment new source review. By using the present Title V permitting process to set enforceable emissions limits at the Big Bend Station with regard to the SO₂ NAAQS, Florida would not only protect public health but also reduce Big Bend's contribution to the nonattainment area through this permit and, as a result, potentially reduce the burden on the Plant and other nearby contributing sources during the Nonattainment SIP process.

D. The Proposed Permit Must Be Revised to Clarify that the Emissions Limitations and Standards Contained Therein Apply at All Times, Even During Startup, Shutdown, and Malfunction.

As drafted, the Proposed Permit allows excess emissions from Units 1, 2, 3, and 4 during startup, shutdown, or malfunctions. See, e.g., Proposed Permit at 13 and 22-23. This is impermissible under the CAA, and EPA has specifically rejected FLDEP's practice of permitting

such excess emissions. *See State Implementation Plans: Response to Petition for Rulemaking; Findings of Substantial Inadequacy; and SIP Calls To Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown, and Malfunction*, Proposed Rule, 78 Fed. Reg. 12460, 12503-04 (Feb. 22, 2013). Indeed, in accordance with the definition of “emission limitations” in CAA section 302(k), emission limitations must be continuous. *Id.* Variances such as those contained in the Proposed Permit are not allowed in Title V permits, except to the extent allowed by the narrow emergency defense provision in 40 CFR Part 70—under specific, narrowly applied requirements for actual, unforeseeable emergencies, such as acts of God. *See* 40 C.F.R. § 70.6(g). Accordingly, Big Bend must not be allowed to exceed its permit terms, even during startup, shutdown, or malfunctions.

The exemptions contained in the Proposed Permit and its appendices from emission limitations during startup, shutdown, or malfunctions are substantially inadequate and impermissible.¹² “[A]ny excess emissions above the level of the applicable [. . .] emission limitations must be considered violations of such limitations, whether or not the state elects to exercise its enforcement discretion.” 78 Fed. Reg. at 12503. The Proposed Permit’s grant of exemptions for excess emissions during startup, shutdown, or malfunctions are inconsistent with the fundamental requirements of the CAA. *See id.*

For instance, the Proposed Permit states that excess emissions from startup, shutdown, and malfunction events at Unit 4 shall be permitted (i.e., allowed and thus not treated as violations) provided: (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed two hours in any 24 hour period unless specifically authorized by the Department for longer duration. *See* Proposed Permit at 22. The same allowance is granted for malfunctions at Units 1, 2, and 3. Proposed Permit at 13. Excess emissions from Units 1, 2, and 3 during startup and shutdown are also permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized. *Id.* In addition, the Proposed Permit allows CEMS emissions data to be “excluded from the corresponding compliance demonstration, provided that best operational practices to minimize emissions are adhered to and the duration of data excluded is minimized.” Proposed Permit Appendices CEMS Unit 4 at 2, CEMS SCCT at 3; *see also* Proposed Permit at 31, 47. These permit provisions constitute a variance at a state official’s discretion from the otherwise applicable emissions limitations, providing “impermissible exemptions from the emission limitations by defining the excess emissions as ‘permitted’ and thus not violations.” *See* 78 Fed. Reg. at 12503.

¹² “[T]hese exemptions are impermissible even though the state has imposed some factual and temporal limitations on their potential scope.” 78 Fed. Reg. at 12503.

The Proposed Permit and its appendices also grant an affirmative defense for excess emissions during malfunctions. See Proposed Permit Appendix NSPS SUBPART Da at 19. This, too, is improper. Even where an equipment malfunction may be “caused by sudden, infrequent, and unavoidable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner,” the Plant must not be allowed to violate its permit terms. See *id.* Equipment malfunctions are no reason to allow for an affirmative defense or to exempt a source from applicable emission standards mandated under the CAA. Encountering the occasional “sudden, infrequent and unavoidable” equipment malfunction is part of the ordinary course of business and operations for any facility of this sort; it is not necessarily an “emergency” or “Act of God” and must not be a reason for exemption from applicable emission limits. Rather than being permitted to violate applicable emission limits, the Plant should be required to either reduce or adjust its operations and/or pollution control devices until the malfunction is rectified in order to ensure the Plant comes into compliance with the terms of its permit immediately.

Because the CAA requires compliance at all times, Big Bend’s Title V permit must require continuous compliance. Automatic exemptions for permit noncompliance during startups, shutdowns, and malfunctions are improper. Moreover, “[b]y creating these impermissible exemptions, the state has defined violations in way that would interfere with effective enforcement by the EPA and citizens for excess emissions during these events as provided in CAA sections 113 and 304.” See 78 Fed. Reg. at 12504. Even in periods of startup, shutdown, and malfunction, the emissions standards and limitations contained in the permit still apply and are enforceable, and all excess emissions are violations of the applicable standards. The permit must not provide exceptions for startups, shutdowns, or malfunctions, or otherwise allow periodic exceedances of emission limitations. Any such grants of exemptions must be entirely removed from the Proposed Permit and its appendices before a final permit issues.

E. The Proposed Permit Must Be Revised to Allow for Credible Evidence to Determine Compliance.

As underscored by the Clean Air Act Amendments of 1990, 42 U.S.C. § 7413(e)(1), the Clean Air Act allows citizens, FLDEP, U.S. EPA, and the facility itself, to rely upon any credible evidence to demonstrate violations of or compliance with permit terms and conditions. In particular, EPA’s regulations set forth that any credible evidence can be used in enforcement actions. 62 Fed. Reg. 8314 (Feb. 24, 1997); see also 40 C.F.R. § 51.212(c). However, Big Bend’s Proposed Permit lacks an affirmative statement that any credible evidence may be used to determine compliance with the permit.

It is well-recognized that EPA supports the inclusion of credible evidence language in all Title V permits. As explained by EPA:

It is the United States Environmental Protection Agency's (USEPA) position that the general language addressing the use of credible evidence is necessary to make it clear that despite any other language contained in the permit, credible evidence can be used to show compliance or noncompliance with applicable requirements. . . . [A] regulated entity could construe the language to mean that the methods for demonstrating compliance specified in the permit are the only methods admissible to demonstrate violation of the permit terms. It is important that Title V permits not lend themselves to this improper construction.

Letter from Cheryl L. Newton, Acting Chief, Air Programs Branch, EPA, to Robert F. Hodanbosi, Chief, Division of Air Pollution Control, Ohio Environmental Protection Agency, dated October 30, 1998, page 1, available at <http://www.epa.gov/region7/air/title5/t5memos/credible.pdf>. In addition, EPA's Title V Permit Writer's Tips webpage states that:

Title V permits should contain language clarifying that any credible evidence may be used in determining a source's compliance status (or alternatively, that nothing in the permit precludes the use of credible evidence in determining compliance or noncompliance with the terms of the permit). Such language gives fair notice to the source and the public, and prevents the source from claiming that they weren't on notice that other credible evidence could be used to demonstrate a violation or compliance.

Available at http://www.epa.gov/reg3artd/permitting/t5_compl_enf.htm. EPA has even provided state agency permit writers with examples of boilerplate credible evidence language to include in their Title V permits. In addition, Title V permits must not include any language which could be improperly read to limit the type of evidence that is to be used for compliance purposes or to show that the facility is in violation of an applicable requirement. Otherwise, even if the Proposed Permit contains a general condition allowing for the use of credible evidence, a court might construe specific language in the permit as the law for compliance purposes.

Because the Proposed Permit fails to include language clarifying that any credible evidence may be used to show compliance or noncompliance with applicable requirements, the permit must be revised so that it is clear that any credible evidence may be used in determining the Plant's compliance status.

III. CONCLUSION

For the foregoing reasons, the Proposed Permit for the Big Bend Station is insufficient to meet the standards required by law and must be amended as described above and re-noticed for public comment before any final permit issues.

We thank FLDEP for its attention to and consideration of these comments and would be happy to discuss them at your convenience. Please do not hesitate to contact the undersigned or Sierra Club Associate Attorney Diana Csank, at diana.csank@sierraclub.org or 202-548-4595.

Respectfully submitted,

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