



VIA ELECTRONIC MAIL

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Re: Sierra Club Comments Concerning Oklahoma's Compliance with Clean Air Act Section 110 Infrastructure Certification for the 2010 Sulfur Dioxide 1-hour National Ambient Air Quality Standards

Dear Ms. Bradley:

On behalf of the Sierra Club, its over 3,300 members in Oklahoma, and others who are adversely impacted by Oklahoma's sources of sulfur dioxide ("SO₂") pollution, we submit the following comments on Oklahoma's Compliance with Clean Air Act ("CAA" or "Act") Section 110 Infrastructure Certification for the 2010 Sulfur Dioxide 1-hour National Ambient Air Quality Standards ("NAAQS") ("Draft ISIP"). Oklahoma must submit an Infrastructure State Implementation Plan ("Infrastructure SIP" or "ISIP") that addresses all of the requirements in sections 110(a)(1) and (2) of the Clean Air Act for the June 2, 2010 one-hour primary SO₂ NAAQS. 42 U.S.C. § 7410(a)(1) & (2). As currently drafted, Oklahoma's Draft ISIP does not satisfy a number of essential requirements, including requirements to establish enforceable emission limits and address significant contributions to downwind states. The following comments explain these deficiencies in greater detail.¹

By addressing the deficiencies in its Draft ISIP, the state of Oklahoma would benefit in four ways. First, and most importantly, Oklahoma would take the action

¹ A copy of these comments and all exhibits can be found at <https://app.box.com/s/7mou1er9vzpkfu7hhi1z>

required to improve public health impacts in the state. There are at least nine counties in which facilities are permitted to exceed the SO₂ NAAQS. Since the NAAQS set ambient pollution levels that states should not exceed in order to protect the health of its citizen, the potential public health benefits of addressing these deficiencies are significant. For example, more than 80,000 children and 290,000 adults are currently living with asthma in Oklahoma²; in 2011, hospitalizations from asthma cost Oklahomans \$72 million.³ Second, Oklahoma would meet its obligations under the Clean Air Act and insulate itself from corrective action by the EPA. Third, Oklahoma could prevent the inevitable future designation of nine counties as being in nonattainment for the 2010 SO₂ NAAQS, thus sparing the state from having to comply with rigorous supplemental Clean Air Act requirements. Finally, the state could bring regulatory certainty to coal-fired power plants in Oklahoma, which could ultimately save these regulated entities money, as utilities decide how to comply with a number of environmental regulations.

I. Legal Background.

A. National Ambient Air Quality Standards.

The Clean Air Act is, at its core, a directive to protect the public from harmful air pollution. Indeed, “pollution prevention” is a “primary goal” of the CAA. 42 U.S.C. §7401(c). Pursuant to this mandate, EPA is required to promulgate “primary ambient air quality standards [“NAAQS”]. . . the attainment and maintenance of which . . . are requisite to protect the public health.” 42 U.S.C. § 7409(b)(1). So far, EPA has identified six criteria pollutants—sulfur dioxide, particulate matter, carbon monoxide, ozone, nitrogen oxide, and lead—that have scientifically demonstrated effects on health and the environment, at certain levels.

The NAAQS represent a ceiling of air pollution concentrations that apply throughout the country. As such, the primary NAAQS form the basis for regulating air emissions for the entire country and provide the foundation for setting specific emission limitations for most large stationary sources. The primary national ambient air quality standards set ambient pollution levels, which should not be exceeded in order to protect public health with an adequate margin of safety. *See* 42 U.S.C. § 7409(b)(1). These standards serve as the basis for development and approval of infrastructure state implementation plans.

B. Sulfur Dioxide: Public Health Impacts and the Current NAAQS.

Exposure to SO₂ in even very short time periods—such as five minutes—has significant health impacts and causes decrements in lung function, aggravation of asthma, and respiratory and cardiovascular morbidity. *See* Primary National Ambient Air Quality Standard for Sulfur Dioxide Final Rule, 75 Fed. Reg. 35,520, 35,525 (June 22, 2010) (hereinafter “Final Rule”). EPA has also determined that SO₂ exposure can also aggravate existing heart disease, leading to increased hospitalizations and premature deaths. *See* Final Rule, 75 Fed. Reg. at 35,525.

² <http://www.ok.gov/health2/documents/Asthma%20in%20OK%20Children%202013.pdf>

³ <http://www.ok.gov/health2/documents/Asthma%20in%20OK%20adults%202013.pdf>

On June 2, 2010, EPA revised the primary SO₂ NAAQS by establishing a new one-hour standard at a level of 75 ppb which is met when the 3-year average of the annual 99th percentile of the daily maximum one-hour average concentrations is less than or equal to 75 ppb. *See* Primary National Ambient Air Quality Standard for Sulfur Dioxide Final Rule, 75 Fed. Reg. 35,520 (June 20, 2010), [hereinafter “Final SO₂ NAAQS Rule”]. The primary SO₂ NAAQS was set at such a level in order to protect public health from the serious threats posed by short-term exposure to SO₂.

Due to both the shorter averaging time and the numerical difference, the new 1-hour SO₂ NAAQS is far more protective of human health than the prior SO₂ NAAQS and promises huge health benefits. EPA has estimated that 2,300-5,900 premature deaths and 54,000 asthma attacks a year will be prevented by the new standard. Env'tl. Prot. Agency, Final Regulatory Impact Analysis (RIA) for the SO₂ National Ambient Air Quality Standards (NAAQS) tbl. 5.14 (2010). Timely implementation of the new NAAQS is thus critical. Each year of delay in implementing the SO₂ NAAQS nationally means 5,900 people will die prematurely and 54,000 asthma attacks will occur unnecessarily. Each year of delay will likewise drive up the medical costs that individuals will have to pay, and will be another year in which people must abstain from everyday activities such as exercise, school, and work. EPA estimates that the net benefit of implementing the 75 ppb SO₂ NAAQS is up to \$36 billion dollars. 75 Fed. Reg. 35,520, 35,588 (June 22, 2010). Due to these and other serious impairments caused by short-term SO₂ exposure, the Oklahoma Department of Environmental Quality (“ODEQ”) must properly implement the one-hour SO₂ NAAQS through this ISIP process in order to protect public health as required by law.

C. Legal Requirements for Infrastructure SIPs.

Once the NAAQS are set, the CAA establishes a statutory framework and timeline to maintain and attain the NAAQS, with some exceptions. States have “primary responsibility” for assuring air quality within the state. *Id.* § 7407(a). Within three years of promulgation of a NAAQS, a state must “adopt and submit to the Administrator . . . a plan which provides for implementation, maintenance, and enforcement of such primary [NAAQS].” *Id.* § 7410(a)(1). For attainment and unclassifiable areas, section 110(a)(2)(A) requires that these 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 Clean Air Act, including the requirement to maintain the NAAQS. 42 U.S.C. §§ 7410(a)(2)(A), 7410(a)(1); *Conn. Fund for Env't, Inc. v. EPA*, 696 F.2d 169, 172 (2d Cir. 1982) (CAA requires that SIPs contain “measures necessary to ensure the attainment and maintenance of NAAQS”); *Mont. Sulphur & Chem. Co. v. EPA*, 666 F.3d 1174, 1180 (9th Cir. 2012) (“The Clean Air Act directs states to develop implementation plans—SIPs—that ‘assure’ attainment and maintenance of national ambient air quality standards (“NAAQS”) through enforceable emission limitations.”) (citing 42 U.S.C. §§ 7407(a), 7410(a)(2)(A)); *Hall v. EPA*, 273 F.3d 1146, 1153 (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); *see also* EPA, “Sulfur

Dioxide Implementation—Programs and Requirements for Reducing Sulfur Dioxide,” available at <http://www.epa.gov/airquality/sulfurdioxide/implement.html>.

EPA may approve an Infrastructure SIP only if it meets the requirements of 110(a)(2) of the Act. See 42 U.S.C. § 7410(a)(2)(A)-(M). The state bears the burden of demonstrating that its SIP submission satisfies the standards of section 110(a)(2). *Mich. Dept. of Env'tl. Quality v. Browner*, 230 F.3d 181, 183, 185 (6th Cir. 2000) (affirming EPA’s rejection of a SIP proposal where the state “failed to offer evidence that [the] proposed rules will not interfere with the attainment and maintenance of the NAAQS.”). An adequate Infrastructure SIP “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.” 40 C.F.R. § 51.112(a).

1. The Plain Language and Legislative History of the Clean Air Act Require That Infrastructure SIPs Must Impose Emission Limits Adequate to Prevent NAAQS Exceedances in Areas Not Designated Nonattainment.

The Clean Air Act, on its face, requires ISIPs to prevent exceedances of the NAAQS. Following promulgation of a NAAQS, a state must “adopt and submit to the Administrator . . . a plan which provides for implementation, maintenance, and enforcement of such [NAAQS].” 42 U.S.C. § 7410(a)(1). Pursuant to section 110(a)(2)(A), this ISIP must “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 Clean Air Act (which include the requirement to maintain compliance with the NAAQS). *Id.* § 7410(a)(2)(A) (emphasis added). As defined by the Act, the term “emission limitation” means “a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter.” *Id.* § 7602(k). Thus, the plain language of section 110(a)(2)(A) requires that ISIPs include enforceable emission limits on sources sufficient to ensure attainment and maintenance of the NAAQS.

The legislative history of the Clean Air Act also supports this interpretation. As the Senate Committee Report accompanying the 1970 Clean Air Act explained, the Act “would establish certain tools as potential parts of an implementation plan and *would require that emission requirements be established by each State for sources of air pollution agents or combinations of such agents in such region* and that these emission requirements be monitored and enforceable.” Sen. Cmte. on Pub. Works Rpt. at 12 (Sept. 17, 1970) (emphasis added), attached hereto as Ex. 1. This was reaffirmed in the subsequent Senate Conference Report, which stated that: “In order to implement the national ambient air quality standards, these [state implementation] plans *must provide for emission limitations on all services in the region covered by the plan*, together with schedules and timetables of compliance, systems for monitoring both ambient air and emissions from individual sources, and adequate enforcement authority.” Sen. Conf.

Rpt., 116 Cong. Rec. 42,381, 42,384 (Dec. 18, 1970) (emphasis added), attached hereto as Ex. 2.⁴

2. EPA Regulations Implementing the Clean Air Act Require That Infrastructure SIPs Must Impose Emission Limits Adequate to Prohibit NAAQS Exceedances in Areas Not Designated Nonattainment.

EPA regulations implementing section 110(a)(2) also require that ISIPs contain emission limits and other measures that ensure NAAQS attainment. Pursuant to these regulations, in order for EPA to approve an ISIP, 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.” 40 C.F.R. § 51.112(a).⁵ The regulation clearly states that all SIPs must contain emission limits that adequately ensure the NAAQS is achieved. *See* 40 C.F.R. § 51.112(a). Although these regulations were developed before the Clean Air Act separated Infrastructure SIPs from nonattainment SIPs—a process that began with the 1977 amendments and was completed by the 1990 amendments—the regulations nonetheless apply to ISIPs. EPA has not changed the regulation since 1990, and in the preamble to the final rule promulgating 40 C.F.R. § 51.112, EPA expressly identifies that its new regulations were *not* implementing Subpart D, the new nonattainment provisions of the Act. *See* Air Quality Implementation Plans; Restructuring SIP Preparation Regulations, 51 Fed. Reg. 40,656, 40,656 (Nov. 7, 1986) (“It is beyond the scope of th[is] rulemaking to address the provisions of Part D of the Act . . .”). Consequently, 40 C.F.R. § 51.112 was intended to apply to ISIPs. Thus, it is clear that ISIPs must contain “measures, rules, and regulations” sufficient to ensure maintenance of the NAAQS.

3. Prior EPA Interpretations of the Act Require That Infrastructure SIPs Must Impose Emission Limits Adequate to Prohibit NAAQS Exceedances in Areas Not Designated Nonattainment.

⁴ Although the language of current section 110(a)(2)(A) was originally found in section 110(a)(2)(B), the substance has remained true to the statements found in the Senate Committee Reports. There were only two substantive changes between 1970 and the present. First, the addition of former section 172(c)’s requirement that SIPs’ emission limitations, schedules, and timetables be “enforceable.” *See* Rpt. of the Senate Cmte. on Env’t. and Pub. Works accompanying the Clean Air Act Amendments of 1989 at 20 (Dec. 20, 1989) (explaining that “Paragraph (1) of rewritten section 110(c) combines and streamlines existing section 110(a)(2)(b) and the enforceability requirements of section 172(c) of current law”), attached hereto as Ex. 16; *see also* 42 U.S.C. § 7502(c) (section 172(c)) (requiring that a SIP revision submitted before July 1, 1982 pursuant to a demonstration under subsection (a)(2) “shall contain enforceable measures to assure attainment of the applicable standard not later than December 1, 1987”). Second, the clarification in the 1990 Clean Air Act Amendments that the “means[] or techniques” for meeting the requirements of the Act included “economic incentives such as fees, marketable permits, and auctions of emissions rights.” 42 U.S.C. § 7410(a)(2)(A).

⁵ 40 C.F.R. § 51.112(a)(1) further specifies that “[t]he adequacy of a control strategy shall be demonstrated by means of applicable *air quality models*, data bases, and other requirements specified in appendix W of this part (Guideline on Air Quality Models).” (emphasis added). Consequently, of relevance to our discussion of the SO₂ NAAQS in these comments, 40 C.F.R. § 51.112(a)(1) supports the use of sulfur dioxide air dispersion modeling to evaluate the adequacy of sulfur dioxide ISIPs for maintaining the one-hour sulfur dioxide NAAQS.

EPA has relied on section 110(a)(2)(A) and 40 C.F.R. § 51.112 on multiple occasions to reject Infrastructure SIPs that did not contain specific emissions limits sufficient to demonstrate attainment and maintenance of the NAAQS. For example, in March 2006, EPA disapproved Missouri's attempt to revise the SO₂ emission limits in its ISIP for two power plants because the new emission limits would not ensure maintenance of the three-hour sulfur dioxide NAAQS then in effect. *See Approval and Promulgation of Implementation Plans; State of Missouri*, 71 Fed. Reg. 12,623, 12,624 (Mar. 13, 2006). In so doing, EPA explained that "Section 110(a)(2)(A) of the [Act] requires, in part, that the [state implementation] plan include emission limitations to meet the requirements of the Act, including the requirement in section 110(a)(1) that the plan must be adequate to attain and maintain ambient air quality standards." *Id.* EPA further explained that "40 C.F.R. 51.112 requires that the plan demonstrate that rules contained in the SIP are adequate to attain the ambient air quality standards." *Id.* In the case of Missouri's proposed ISIP, EPA expressed concern that the sulfur dioxide emission rates for two power plants in question were "not protective of the short-term sulfur dioxide NAAQS" because, while Missouri had lowered the emission rates for the facilities, it had dramatically increased the averaging times (from a 3-hour average to an annual average) without providing "a demonstration, as required by the [Clean Air Act] and EPA regulations, that the [sulfur dioxide national ambient air quality] standards, and particularly the three-hour and the twenty-four hour standards, can be protected by an annual emission limit." *Id.*

More recently, in December 2013, EPA rejected a revision to Indiana's sulfur dioxide ISIP pursuant to 40 C.F.R. § 51.112, because Indiana failed to demonstrate that the ISIP, as revised, was sufficient to ensure maintenance of the sulfur dioxide NAAQS. *See Approval of Air Quality Implementation Plans; Indiana; Disapproval of State Implementation Plan Revision for ArcelorMittal Burns Harbor; Final Rule*, 78 Fed. Reg. 78,720, 78,721 (Dec. 27, 2013). Indiana had submitted a request to EPA to revise its sulfur dioxide SIP for the ArcelorMittal Burns Harbor facility to remove the SO₂ emission limit for the blast furnace flare at the facility. *Id.* In the proposed disapproval, EPA explained that "[u]nder 40 C.F.R. 51.112(a), each SIP must demonstrate that the measures, rules, and regulations it contains are adequate to provide for the timely attainment and maintenance of the NAAQS." *See Approval of Air Quality Implementation Plans; Indiana; Disapproval of State Implementation Plan Revision for ArcelorMittal Burns Harbor; Proposed Rule*, 78 Fed. Reg. 17,157, 17,158 (Mar. 20, 2013). Because Indiana did not demonstrate that the ArcelorMittal blast furnace gas flare's existing emission limit was "redundant, unnecessary, or that its removal would not result in or allow an increase in actual SO₂ emissions," and, consequently, that removal of the limit would not "affect the validity of the emission rates used in the existing attainment demonstration, thus undermining the SIP's ability to ensure protection of the SO₂ NAAQS," EPA rejected the proposed amendment. *Id.* at 17,159; *see also* 78 Fed. Reg. at 78,721.

4. Supreme and Appellate Court Opinions Hold That Infrastructure SIPs Must Impose Emission Limits Adequate to Prohibit NAAQS Exceedances in Areas Not Designated Nonattainment.

Since the inception of the modern Clean Air Act in 1970, courts have interpreted the language presently found in section 110(a)(2)(A) to require that SIPs contain enforceable emission limits sufficient to prevent exceedances of the NAAQS. In *Train v. NRDC*, a seminal case on SIP approval requirements, the Supreme Court explained that:

In complying with this requirement [that a SIP provide for attainment and maintenance of the NAAQS] a State's plan must include 'emission limitations,' which are regulations of the composition of substances emitted into the ambient air from such sources as power plants, service stations, and the like. They are the specific rules to which operators of pollution sources are subject, and which if enforced should result in ambient air which meets the national standards.

421 U.S. 60, 78 (1975); *see also id.* at 67 (citing language from then-current section 110(a)(2)(B) now found in section 110(a)(2)(A)).

Courts of appeals have echoed the same conclusion. For example, in *Pennsylvania Department of Environmental Resources v. EPA*, the Third Circuit stated that the Clean Air Act "directs the EPA to withhold approval from a state implementation plan if the 'maintenance of [the] standard' cannot be assured." 932 F.2d 269, 272 (3rd Cir. 1991).⁶ The court observed that the "need to maintain the Clean Air Act standards once they are reached is well-recognized by the Courts." *Id.* Other courts have provided similar analyses. In *Mision Industrial, Inc. v. EPA*, for example, the First Circuit explained that, "[b]efore approving an air quality implementation plan or revision, the Administrator must determine that it 'includes emission limitations . . . and such other measures as may be necessary to insure attainment and maintenance of (the) primary or secondary standard . . .'" 547 F.2d 123, 129 (1st Cir. 1976) (quoting former section 110(a)(2)(B)).

The 1990 Clean Air Act amendments do not alter this picture. Court decisions since the 1990 amendments have continued to hold that ISIPs must have emission limits that maintain the NAAQS. In *Alaska Department of Environmental Conservation v. EPA*, the Supreme Court explained that an Infrastructure SIP under CAA section 110(a)(1) must be a "plan which provides for implementation, maintenance, and enforcement of [NAAQS]." 540 U.S. 461, 470 (2004) (quoting section 110(a)(1)). "While States have wide discretion in formulating their plans . . . SIPs must include certain measures Congress specified to assure that national ambient air quality standards are achieved." *Id.* (internal citations and quotations omitted). Thus, in order for EPA to approve a SIP, it "must 'include enforceable emission limitations and other control measures, means, or techniques . . . as may be necessary or appropriate to meet the applicable [CAA] requirements.'" *Id.* (quoting 42 U.S.C. § 7410(a)(2)(A)).

The circuit courts have also been clear that section 110(a)(2)(A) from the post-1990 Clean Air Act requires enforceable emission limits in ISIPs. For example, the

⁶ The court was interpreting the 1977 version of the statute in which Subpart 1 of Part D had been added, *id.* at 271 n.1, but relied on the language of then-current section 110(a)(2)(B) (now found in section 110(a)(2)(A)). *Pennsylvania Department of Environmental Resources*, 32 F.2d at 272.

Ninth Circuit affirmed that “[t]he Clean Air Act directs states to develop implementation plans—SIPs—that ‘assure’ attainment and maintenance of national ambient air quality standards (‘NAAQS’) *through enforceable emission limitations.*” *Mont. Sulphur & Chem. Co.*, 666 F.3d at 1180 (citing 42 U.S.C. §§ 7407(a), 7410(a)(2)(A)) (emphasis added). And the Sixth Circuit has explained that “EPA’s deference to a state 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.” *Mich. Dept. of Env’tl Quality*, 230 F.3d at 185 (*quoting Train*, 421 U.S. at 79).

Additionally, in *Hall v. EPA*, the Ninth Circuit held that EPA had not fulfilled its responsibility under another provision—section 110(l)⁷—to evaluate whether a revised air quality plan will achieve the pollution reductions required under the Act. 273 F.3d at 1152. In *Hall*, EPA incorrectly approved a revision to an air quality plan solely on the basis that the revisions did not relax the existing SIP, rather than “measur[ing] the existing level of pollution, compar[ing] it with the national standards, and determin[ing] the effect on this comparison of specified emission modifications.” *Id.* at 1157-58 (*quoting Train*, 421 U.S. at 93). EPA claimed a statutory equivalence between non-relaxation of rules approved in 1981 and non-interference with current attainment requirements. *Id.* at 1155. The court rejected EPA’s application of the “no relaxation” rule, finding it inconsistent with the Act because it set an improper baseline that failed to take into consideration the 1990 amendments, which set new deadlines for attainment and established other new requirements for incremental progress towards attainment. *Id.* at 1160-61. Those current attainment requirements were the baseline from which EPA should have measured “non-interference.” *Id.* EPA’s analysis was required to reflect consideration of the prospects of meeting current attainment requirements under a revised air quality plan. *Id.* Just as a plan revision must not interfere with attainment of the NAAQS under section 110(l), an ISIP must likewise include enforceable limits sufficient to ensure the initial plan provides for maintenance of the NAAQS under 110(a)(2)(A).

II. THE DRAFT ISIP FAILS TO INCLUDE ENFORCEABLE ONE-HOUR SO₂ EMISSION LIMITATIONS TO ENSURE ATTAINMENT AND MAINTENANCE OF THE PRIMARY SO₂ NAAQS.

Oklahoma’s Draft ISIP fails to include restrictions on major SO₂ sources to ensure that areas not currently designated will attain and maintain the new one-hour SO₂ NAAQS, and so Oklahoma must revise the ISIP to incorporate enforceable emission limits.

A. Oklahoma must revise the Draft ISIP to include enforceable one-hour SO₂ emission limits for sources currently allowed to cause exceedances of the NAAQS.

The Draft ISIP fails to include adequate enforceable emission limitations or other required measures for sources of SO₂ sufficient to ensure attainment and maintenance of

⁷ Section 110(l) provides, in relevant part, that “[t]he Administrator shall not approve a revision of a [state implementation] plan if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress . . . or any other applicable requirement of this chapter.” 42 U.S.C. § 7410(l).

the 2010 SO₂ NAAQS. As discussed, under section 110(a)(2)(A), the ISIP must “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 Clean Air Act, which include the requirement to maintain compliance with the NAAQS.

Emission limits are especially important for meeting the one-hour SO₂ NAAQS given the “strong source-oriented nature of SO₂ ambient impacts.” Final SO₂ NAAQS Rule, 75 Fed. Reg. at 35,570. Nationally, large point sources account for 95 percent of SO₂ emissions, 66 percent of which come from fossil fuel combustion at electric facilities. *Id.* at 35,524. Specifically, in Oklahoma, 72.8 percent (or 95,553 out of 131,187 tons) of all SO₂ emissions in the state come from coal-fired electric generating units (“EGUs”). *See* 2011 NEI SO₂ 28, April 2014.xlsx (based on 2011 National Emissions Inventory, Excel Worksheet “CHARTS (SC),” Ex. 3; *see also* EPA, The National Emissions Inventory, <http://www.epa.gov/ttn/chief/net/2011inventory.html>.

Despite the large contribution from coal-fired EGUs, ODEQ has not even attempted to demonstrate that emissions allowed by the Draft ISIP will ensure compliance with the one-hour SO₂ standard. In fact, the Draft ISIP would simply allow the major air pollution sources in the state to continue operating under their present emissions limits. As determined by expert air dispersion modeling conducted at Sierra Club’s request, and in one instance by a utility’s own modeling, however, those limits are insufficient to attain and maintain the NAAQS. *See* Steven Klafka, *Sooner Generating Station, Red Rock, Oklahoma: Evaluation of Compliance with the 1-hour NAAQS for SO₂* (June 3, 2014), [hereinafter, “Sooner Report”], attached hereto as Ex. 4; Steven Klafka, *GRDA Chouteau Coal-Fired Complex, Chouteau, Oklahoma: Evaluation of Compliance with the 1-hour NAAQS for SO₂* (May 29, 2014) [hereinafter, “GRDA Report”], attached hereto as Ex. 5; Lindsey Sears, *Air Dispersion Modeling Analysis for Verifying Compliance with the One-Hour SO₂ NAAQS and Oklahoma SIP Limits: Muskogee Generating Station* (June 3, 2014) [hereinafter, “Muskogee Report”], attached hereto as Ex. 6; Excerpt of Black & Veatch, *Plan for Emission Control Upgrades: GRDA Coal-Fired Complex* (July 2012) [hereinafter, “Black & Veatch Report”], attached hereto as Ex. 7.

The Sooner Report, Muskogee Report and GRDA Report present the results of an air dispersion modeling analysis for each plant that compares the modeled ambient air concentrations of each plant’s SO₂ emissions with the 2010 one-hour primary SO₂ NAAQS. The modeling analyses employed EPA’s AERMOD program to model the plants’ “allowable” emissions (based on the current Title V permit) and, in some instances, “actual” emissions (based on maximum plant-wide hourly emissions obtained from annual emission inventory reports) to determine whether each plant’s emissions could cause exceedances of the one-hour SO₂ NAAQS. *See* Muskogee Report at 4-5; GRDA Report at 2-3; Sooner Report at 2-3. In particular, the modeling based on the allowable emissions is crucial to a determination of whether the Oklahoma Draft ISIP is adequate to attain and maintain the SO₂ NAAQS, because this is what is allowed in each plant’s permit.

The modeling protocol employed in these analyses is consistent with all available technical guidance, including Appendix W and EPA’s March 2011 guidance for

implementing the one-hour SO₂ NAAQS. Additionally, the modeler used the most recent version of AERMOD, AERMET, and AERMINUTE available at the time of the studies. *See* Muskogee Report at 5; GRDA Report at 2; Sooner Report at 2. Where any assumptions were made when running the models, the modeler generally employed conservative inputs, which favor the prediction of lower impacts from the plants, so that the results may understate the plants’ SO₂ emission impacts. *See* GRDA Report at 4; Sooner Report at 4.

The modeling reports demonstrate that the Draft ISIP improperly authorizes these plants to continue to cause exceedances of the one-hour SO₂ NAAQS based on their allowable and in some instances actual or maximum emission rates. *See* Muskogee Report at 15; GRDA Report at 3, Table 1; Sooner Report at 3, Table 1. The modeling results are above the NAAQS, even without consideration of background concentrations, and allow exceedances in Mayes, Noble, Pawnee, Osage, Wagoner, Cherokee, Sequoyah, Muskogee, and McIntosh counties. *See* Muskogee Report at 14; GRDA Report at 3, Table 1; Sooner Report at 3, Table 1. In addition, the GRDA Report shows authorization of exceedances in Cherokee Nation tribal jurisdictions, while the Sooner Report shows authorization of exceedances in Ponca Nation and Otoe Missouria Nation jurisdictions. Similarly, the Muskogee power plant is authorized to cause exceedances in the Muskogee Nation and Cherokee Nation tribal jurisdictions. No area in Oklahoma has been designated nonattainment under the one-hour SO₂ NAAQS. *See generally* Air Quality Designations for the 2010 Sulfur Dioxide (SO₂) Primary National Ambient Air Quality Standard, 78 Fed. Reg. 47,191 (Aug. 5, 2013), [hereinafter “Final 2010 SO₂ Designations”].⁸ Because these power plants are in areas that are not currently designated nonattainment, ODEQ must submit an ISIP that “provides for implementation, maintenance, and enforcement of” the NAAQS within those areas. 42 U.S.C. § 7410(a)(1).

The findings from each modeling report are summarized in Table 1 below.

Table 1: Summary of Modeled Allowable and Maximum Emissions

Power Plant	Emission Rates	Facility Impact (µg/m³)	SO₂ NAAQS (µg/m³)⁹	Impacted Counties/Tribal Jurisdictions (Not Designated Nonattainment)
Sooner Power Plant	Allowable	315.2	196.2	Noble, Pawnee, and Osage counties; Ponca and Otoe Missouria Nation tribal jurisdictions
	Maximum	212.8		
Muskogee Power Plant	Allowable	1,249.1	196.2	Wagoner, Cherokee, Sequoyah, Muskogee, McIntosh counties; Cherokee Nation and Muskogee Creek Nation tribal jurisdictions
	Maximum	597.9		

⁸ EPA has yet to issue designations for areas aside from those containing monitors that recorded exceedances of the NAAQS. *See* Final 2010 SO₂ Designations at 47,191 (designating areas with monitor violations from 2009-2011 as nonattainment).

⁹ The 75 ppb to µg/m³ calculation is 75/0.3823 = 196.2 µg/m³.

GRDA Power Plant	Allowable	318.4	196.2	Mayes County; Cherokee Nation tribal jurisdiction
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See Sooner Report at 3, Table 1; GRDA Report at 3; Muskogee Report at 15.

Based on the modeling results summarized above, ODEQ must promulgate enforceable emission limits with one-hour averaging times into its Draft ISIP that are no less stringent than the limits listed in Table 2, below, to achieve and maintain the one-hour SO₂ NAAQS. These limits represent the maximum rate that each facility can emit without causing NAAQS exceedances, thus reducing each total plant’s allowable emissions by the corresponding percentage. These emission limits must apply at all times including during periods of start-up, shutdown, and malfunction to ensure Oklahoma attains and maintains the SO₂ NAAQS.¹⁰

Table 2: Limits Necessary to Achieve and Maintain the One-Hour SO₂ NAAQS

Plant	Required Total Facility Reduction Based on Allowable Emissions (%)	Required Total Facility Emission Rate (lbs/hr)	Required Total Facility 1-hour Average Emission Rate (lbs/mmbtu)
Sooner Power Plant	41.9%	7,132.5	0.70
Muskogee Power Plant	90%	1,976.2	0.12
GRDA Power Plant	43%	7,195.4	0.69

See Sooner Report at 4, Table 3; GRDA Report at 4, Table 3; Muskogee Report at 15.

As demonstrated by the modeling reports, the Sooner, Muskogee and GRDA power plants are currently authorized to cause exceedances of the one-hour SO₂ NAAQS based on their allowable, actual, or maximum emission rates, and so must reduce those emissions rates. Moreover, GRDA’s own modeling shows that even greater emissions reductions are required at its plant. GRDA contracted with Black and Veatch to conduct an analysis of the SO₂ emissions reductions required to ensure attainment of the NAAQS at the GRDA power plant. See Ex. 7. The Black & Veatch Report found that the GRDA power plant must reduce its emissions by 75 percent, or down to a rate of 3,128 lbs/hr or 0.3 lbs/mmbtu. *Id.* The Black & Veatch Report also stated that, when air impacts from other nearby sources are considered, even greater reductions from GRDA—down to 0.03 or even 0.01 lbs/mmbtu—may be required if those other sources cannot be controlled. *Id.* If the other sources of SO₂ emissions could not be appropriately controlled, the state may have to consider retirement of GRDA as the only option to prevent SO₂ exceedances, as emissions reductions of this magnitude go beyond what a flue gas desulfurization control system can accomplish. *Id.*

¹⁰ Modeling-based emissions limits are well-documented. For example, Minnesota has used SO₂ modeling to establish emission limits on several plants in order to avoid nonattainment designations. See Black Dog Plant Permit No. 03700003-11, Technical Support Document, at 5 & 10 (permit emission limits based on modeling analyses), attached hereto as Ex.8; see also Allen S. King Title V Technical Support Document, at 6, 14, 16 & 39 (permit emission limits based on modeling analyses), attached hereto as Ex.9.

As shown by the modeling reports, ODEQ must impose additional emission limits on the Muskogee, Sooner, and GRDA plants that will ensure attainment and maintenance of the NAAQS at all times. As the ISIP submission does not incorporate emission limitations that are necessary to meet the applicable requirements of the Clean Air Act (or indeed, any new emission limits for these or other SO₂-emitting facilities), including the requirement to maintain compliance with the 2010 SO₂ NAAQS, the Draft ISIP fails to comply with CAA section 110(a)(2)(A); therefore, Oklahoma must revise its Draft ISIP to address these deficiencies.

B. Modeling is the appropriate tool for evaluating the adequacy of Infrastructure SIPs and ensuring attainment and maintenance of the SO₂ NAAQS.

As outlined by EPA in the Final SO₂ NAAQS Rule, 75 Fed. Reg. at 35,551, air dispersion modeling is the best method for evaluating the short-term impacts of large SO₂ sources. This is consistent with EPA's historic use of air dispersion modeling for attainment designations and SIP revisions. Furthermore, an agency may not ignore information put in front of it, such as Sierra Club's modeling submitted with these comments. *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 the agency to ignore an important aspect of an issue placed before it); *see also NRDC v. EPA*, 571 F.3d 1245, 1254 (D.C. Cir.2009) (restating EPA's own statement that additional information presented in a notice-and-comment rulemaking must be considered during the rulemaking by the corresponding state and EPA) (*citing* 70 Fed. Reg. 71,612, 71,655).

ODEQ has long been on notice that modeling data is an important resource in the SO₂ NAAQS attainment and maintenance process. EPA has historically used modeling in determining attainment for the SO₂ standard. *See e.g.*, U.S. EPA, *Implementation of the 1-Hour SO₂ 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 Sulfur Dioxide 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 Ex. 10 ("the Agency has historically relied on modeling to make designations for sulfur dioxide"). In fact, in EPA's 1994 SO₂ Guideline Document, EPA noted that "for SO₂ attainment demonstrations, monitoring data alone will generally not be adequate," U.S. EPA, 1994 SO₂ Guideline Document, [hereinafter "1994 SO₂ Guideline Document"], *available at* http://www.epa.gov/ttn/oarpg/t1/memoranda/so2_guide_092109.pdf, at 2-5, and that "[a]ttainment determinations for SO₂ 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." *Id.* at 2-1. The 1994 SO₂ Guideline Document goes on to note that monitoring alone is likely to be inadequate: "[f]or SO₂, 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.” *Id.* at 2-3.

EPA’s approval and acceptance of modeling for making attainment designations stretches back decades and demonstrates that modeling 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. *See* Sheldon Meyers Memorandum re Section 107 Designation Policy Summary (April 21, 1983), attached hereto as Ex. 11. OAQPS explained that “air quality modeling emissions data, etc., should be used to determine if the monitoring data accurately characterize the worst case air quality in the area.” *Id.* at 1. Without modeling data, the worst-case air quality may not be accurately characterized. In certain instances, EPA relied solely on modeling data to determine nonattainment designations; demonstrating modeling is accepted and trustworthy. *Id.* at 2. 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 SO₂ standard.” *Mont. Sulphur & Chem. Co.*, 666 F.3d at 1181 (citing 43 Fed. Reg. 8,962 (Mar. 3, 1978)).

EPA’s final 2010 SO₂ NAAQS rule simply built upon EPA’s historical practice of using modeling to determine attainment and nonattainment status for SO₂ NAAQS. In doing so, EPA properly recognized the “strong source-oriented nature of SO₂ ambient impacts,” Final SO₂ NAAQS Rule at 35,370, and concluded that the appropriate methodology for purposes of determining compliance, attainment, and nonattainment with the new NAAQS is modeling. *See 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 areas with large point sources.”). Accordingly, in promulgating the 2010 SO₂ 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” *Id.* at 35,570. Similarly, EPA then explained in the EPA White Paper that using modeling to determine attainment for the SO₂ standard “could better address several potentially problematic issues than would the narrower monitoring-focused approach discussed in the proposal for the SO₂ NAAQS, including the unique source-specific impacts of SO₂ emissions and the special challenges SO₂ emissions have historically presented in terms of monitoring short-term SO₂ levels for comparison with the NAAQS in many situations (75 FR 35550).” EPA White Paper at 3-4.

Moreover, the courts have upheld EPA’s use of modeling. For example, in *Montana Sulphur*, the company challenged a SIP call, a SIP disapproval, and a Federal Implementation Plan (“FIP”) promulgation, because they were premised on a modeling analysis that showed the Billings/Laurel, Montana area was in nonattainment for SO₂. 666 F.3d at 1184. The court rejected Montana Sulphur’s argument that EPA’s reliance on modeling was arbitrary and capricious or otherwise unlawful. *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). Further demonstrating the superiority of modeling, the D.C. Circuit has acknowledged the inherent problem of using monitored data for criteria pollutants, namely that “a monitor only measures air quality in its immediate vicinity.” *Catawba County v. EPA*, 571 F.3d 20, 30 (D.C. Cir. 2009).

Indeed, EPA employs and relies on modeling to inform its designations 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 determining the ambient concentrations resulting from emissions from an industrial source. These should be based on an appropriate modeling analysis.

Declaration of John C. Vimont at 1, 11 (emphasis added), attached hereto as Ex. 12. Testimony as to the accuracy and appropriateness of modeling has also been presented by Roger Brode, a physical scientist in EPA’s Air Quality Modeling Group who co-chairs the AMS/EPA Regulatory Model Improvement Committee (AERMIC) and the AERMOD Implementation Workgroup. *See* Declaration of Roger W. Brode at 1, 2, attached hereto as Ex. 13. Mr. Brode has stated under oath that AERMOD is “readily capable of accurately predicting whether the revised primary SO₂ NAAQS is attained and whether individual sources cause or contribute to a violation of the SO₂ NAAQS.” *Id.* at 2. 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.

Id. at 3-4 (emphasis added). The Muskogee, Sooner, and GRDA power plants are clear examples of 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, as well as the extensive history of EPA's preference for modeling over monitoring to evaluate compliance. For example, all NO₂, PM_{2.5}, SO₂ NAAQS, and Prevention of Significant Deterioration ("PSD") 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. 40 C.F.R. § 52.21(l)(1). Indeed, in order to ensure consistency in how air impacts are determined, both existing 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. AERMOD accurately models medium-to-large SO₂ sources—even with conditions of low wind speed, the use of off-site meteorological data, and variable weather conditions. Indeed, 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 SO₂ 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.

Comments of Camille Sears 1, at 10, attached hereto as Ex. 14 (citing AERMOD evaluations and modeled meteorological data, *available at* http://www.epa.gov/ttn/scram/dispersion_prefrec.htm).

Finally, EPA's use of air dispersion modeling and AERMOD in particular was upheld in the context of a recent Clean Air Act § 126 petition for resolution of cross-state impacts. *See Genon Rema, LLC v. U.S. EPA*, 722 F.3d 513, 526 (3rd Cir. 2013). In this case, the EPA granted the New Jersey Department of Environmental Protection's 126 petition, finding that trans-boundary sulfur dioxide emissions from the Portland coal-fired power plant in Pennsylvania were significantly contributing to nonattainment and interference with the maintenance of the one-hour SO₂ NAAQS in New Jersey. *Id.* at 518. EPA based its finding on a review of the AERMOD dispersion modeling submitted by New Jersey, its independent assessment of AERMOD, and other highly technical analyses. *Id.* The court upheld the EPA's decision after examining the record, which showed that EPA had thoroughly examined the relevant scientific data and clearly articulated a satisfactory explanation of the action that established a rational connection between the facts found and the choice made. *Id.* at 525-28.

EPA has acknowledged that, for the one-hour SO₂ NAAQS, modeling is the most accurate means of determining attainment with the NAAQS, Final SO₂ NAAQS Rule at 35,551, 35,570, yet the Oklahoma Draft ISIP lacks SO₂ emissions limitations informed by air dispersion modeling. As a result, the proposed amendment fails to ensure that

Oklahoma will achieve and maintain the 2010 one-hour SO₂ NAAQS. To comply with the Act's obligations, Oklahoma must include adequate emissions limits in the ISIP—that is, source-specific one-hour SO₂ emission limits that show no exceedances of the NAAQS when modeled.

C. The Draft ISIP must include enforceable SO₂ emission limits with a one-hour averaging period that apply at all times.

As discussed, an emission limitation necessary to comply with section 110(a)(2)(A) means “a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter.” 42 U.S.C. § 7602(k). Therefore, emission limitations must also contain proper averaging times; otherwise, the emission limits would allow for peaks that cause exceedances of the NAAQS but which, when averaged with lower emissions over time, would not register as exceedances. In this instance, the one-hour SO₂ NAAQS requires a one-hour averaging period.

In various contexts, EPA has stated that one-hour averaging times are necessary to comply with the one-hour SO₂ NAAQS. For instance, in 2011, EPA disagreed with the Kansas Department of Health and Environment's issuance of a PSD permit that contained a 30-day averaging time rather than a one-hour averaging period. *See* Letter from Karl Brooks, Regional Administrator, EPA Region 7 to Dr. Robert Moser, Secretary, Kansas Department of Health and Environment (Feb. 3, 2011), attached hereto as Ex. 15. EPA explained:

[i]t is well known that there can be considerable variability in actual 1-hour emission rates. Therefore, to ensure protection of the 1-hour . . . SO₂ NAAQS . . . the permit needs to contain . . . SO₂ 1-hour average emission limits for both new and existing steam generating units. To ensure the source does not cause or contribute to air pollution in violation of the NAAQS, the emission limits should be consistent with the modeling rates and have the same averaging period, i.e. in this case maximum hourly emission limits consistent with the 1-hour NAAQS.

Id. at 2. Similarly, in its disapproval of Missouri's SIP in 2006, EPA determined that the emission rates in the SIP were “not protective of the short-term sulfur dioxide NAAQS” because they were based on an annual average. *See* Approval and Promulgation of Implementation Plans; State of Missouri, 71 Fed. Reg. 12,623, 12,624 (Mar. 13, 2006). In 2011, the Environmental Appeals Board confirmed that emission limits for SO₂ should be based on hourly averaging times, and rejected an agency's attempt to use a 3-hour averaging time instead. *In re: Mississippi Lime Co.*, PSDAPLPEAL11-01, 2011 WL 3557194, at *26-27 (E.P.A. Aug. 9, 2011) (“Emission limits should be based on concentration estimates for the averaging time that results in the most stringent control requirements. 40 C.F.R. pt. 51, app. W, § 10.2.3.1.a.”).

Oklahoma's ISIP is required to implement, maintain, and enforce the NAAQS and therefore must include "enforceable emission limitations" to ensure its effectiveness. 42 U.S.C. § 7410(a)(2)(A). Only one-hour averaging periods can ensure compliance with the one-hour SO₂ NAAQS. Therefore, to ensure that all areas in Oklahoma attain and maintain the one-hour SO₂ NAAQS, ODEQ must revise its ISIP to include enforceable emission limits with one-hour averaging times for coal-fired power plants and other large sources of SO₂.¹¹ These emission limits must apply at all times, including periods of start-up, shutdown, and malfunction.

D. The Draft ISIP fails to include measures that ensure compliance with section 110(a)(2)(A) of the Act regarding the 2010 SO₂ NAAQS.

Oklahoma's Infrastructure SIP submission fails to include measures that sufficiently demonstrate that it will comply with section 110(a)(2)(A), and therefore it cannot ensure the proper implementation, maintenance, and enforcement of the NAAQS as required. As discussed, under section 110(a)(2)(A), the ISIP must "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 Clean Air Act (which include the requirement to maintain compliance with the NAAQS). Yet Oklahoma's submission neither includes nor references emission limitations or other required measures that ensure compliance with the one-hour primary SO₂ NAAQS. *See generally* Draft ISIP.

The statutory and regulatory sections that ODEQ incorporated into its Draft ISIP are insufficient to ensure compliance with the 2010 SO₂ NAAQS. For instance, ODEQ's Draft ISIP does not provide sufficient emission limits on large SO₂ sources to guarantee the attainment and maintenance of the NAAQS. The SO₂ emissions standard contained in OAC 252:100-31, Control of Emission of Sulfur Compounds, *see* Draft ISIP at 3, is far too weak to attain and maintain the 2010 one-hour primary SO₂ NAAQS based on measured and predicted air quality. The emission limit in OAC 252:100-31, subpart 25, for sulfur compounds from fuel-burning equipment constructed after 1972, may not exceed 1.2 pounds per MMBTU heat input of SO₂ averaged over a period of three or twenty-four hours. When compared to the 2010 SO₂ NAAQS, which limits ambient SO₂ to 75 ppb (or 0.075 ppm) averaged over one hour, it is apparent that this standard is grossly inadequate to attain and maintain the NAAQS. Not only is the emission limit provided extremely weak, the regulation allows certain types of sources to avoid the limit entirely. *See* OAC 252:100-31-16 (providing no emissions limits for coal plants built prior to 1972). As discussed above, refined air dispersion modeling shows that more stringent levels are required for at least the Muskogee, Sooner, and GRDA power plants, and that the existing limits maintained in the Draft ISIP are insufficient to meet the 2010 SO₂ standard. *See* Sooner Report at 4, Table 3; GRDA Report at 4, Table 3; Muskogee Report at 15. From the modeling reports, it is clear that the standards contained within the Draft ISIP were created for the less stringent, outdated NAAQS and Oklahoma must revise the ISIP to reflect the applicable one-hour standard.

¹¹ Though no averaging time longer than one hour can ensure compliance with the 1-hour SO₂ NAAQS, if a state nonetheless uses a longer averaging time, the emission limits at minimum would need to be ratcheted down accordingly to ensure that no short-term exceedances of the standard occur.

Further, the Draft ISIP impermissibly allows for ambient air incremental increases, variances, exceptions, or exclusions with regard to limits placed on sources of SO₂, and so further fails to assure attainment of the 2010 SO₂ NAAQS. The Draft ISIP incorporates existing regulatory provisions that allow exemptions from enforcement that undermine the programs meant to ensure attainment and maintenance with the NAAQS. *See* Draft ISIP at 2. For instance, in the Oklahoma Clean Air Act, the Council may grant a variance for any provision of the Oklahoma Clean Air Act under certain circumstances. *See* 27A O.S. § 2-5-109. Moreover, OAC 252:100-9-8 allows owners and operators of any size sources to be relieved of a civil or administrative penalty, thus evading enforcement actions for excess emissions during periods of startup, shutdown, and malfunction. These provisions and others not discussed in these comments undermine the efficacy of the ISIP by permitting sources to evade enforcement and emit excess emissions, preventing Oklahoma from attaining and maintaining the 2010 SO₂ NAAQS.

As a result of all of these inadequacies, exemptions, variances, and other shortfalls not listed in these comments, the Draft ISIP cannot ensure that Oklahoma will attain and maintain the 2010 SO₂ NAAQS. In particular, the Draft ISIP fails to address large sources of SO₂ pollution, including the Muskogee, Sooner, and GRDA fossil plants that lack emission limits necessary to ensure attainment and maintenance of the standard. *See generally* Sooner Report, Muskogee Report, and GRDA Report. Oklahoma must revise its ISIP to include enforceable emission limits that address the exceedances demonstrated by expert modeling analyses submitted with these comments and that otherwise address the short-term, one-hour SO₂ NAAQS. It must also update its emission regulations to ensure that proper mass limitations and one-hour averaging periods are imposed on large SO₂ sources, including coal-fired power plants.

E. Enforceable emission limits are necessary to avoid future nonattainment designations.

In addition to being a required component of the ISIP, enforceable emission limits—either in permits or source-specific SIP provisions—are necessary to avoid future nonattainment designations in areas where modeling or monitoring shows that SO₂ levels exceed the one-hour NAAQS. *See* EPA, Next Steps for Area Designations and Implementation of the Sulfur Dioxide National Ambient Air Quality Standard at 4 (Feb. 6, 2013) (explaining that agencies should work “*to avoid a nonattainment designation by establishing and submitting to EPA enforceable emission limitations ensuring that attainment with the SO₂ NAAQS (in the form of permit limits, source-specific SIP revisions, or other permanent and enforceable legal documents) occurs prior to the date that final designations based on modeling information are issued*” (emphasis added)); Primary National Ambient Air Quality Standard for Sulfur Dioxide, 75 Fed. Reg. at 35,553 (June 22, 2010) (areas will “be designated ‘nonattainment’ if *either available monitoring data or modeling shows that a violation exists, or ‘attainment’ if both available monitoring data and modeling indicate the area is attaining*” (emphasis added)). Oklahoma should use this opportunity to do exactly that—add enforceable emissions limits to prevent nonattainment designations later on and protect public health. In order to comply with section 110(a)(2)(A) and avoid nonattainment designations for areas

impacted by high SO₂ emissions, ODEQ must amend the Draft ISIP to ensure that large sources of SO₂ cannot cause exceedances of the one-hour SO₂ NAAQS.

To date no county in Oklahoma has been designated as nonattainment, but that number will jump to nine counties as the designation process continues. Nonattainment designations create rigorous Clean Air Act requirements that states must comply with, including offsets, LAER, and nonattainment NSR. Oklahoma should use this opportunity to avoid having nine counties formally designated as nonattainment and protect public health by adding enforceable emissions limits to attain and maintain the SO₂ NAAQS.

Addressing the issue now is also a way to bring regulatory certainty to coal-fired power plants in Oklahoma, which could ultimately save these regulated entities money. This is because many of the coal-fired power plants that do not already have flue gas desulfurization equipment are currently evaluating which sulfur controls to install to comply with other rules, including MATS, CSAPR, and Regional Haze. As a result, moving forward now with emission limits and pollution control requirements will allow sources to plan for compliance with all potentially applicable rules, avoiding an outcome in which a source makes a significant investment in a suite of pollution controls for MATS, Regional Haze, or CSAPR only to conclude that that the suite of controls is inadequate to comply with the SO₂ NAAQS and that a second suite of controls is necessary. Thus, complying with the SO₂ NAAQS may add little or no additional capital cost to the costs of complying with other rules—provided that the sources can factor the SO₂ NAAQS into their initial decision on which controls to install.

Indeed, industry itself has made this same exact point to EPA, though in slightly different terms:

Multiple recently-issued rules all focus on large combustion source-related emissions (e.g. boilers) and may require significant capital expenditures to achieve compliance. The compliance options and deadlines for these rules, however, vary widely. If the rules compliance deadlines and requirements are not coordinated, the sources subject to them will be forced to make investment decisions without a full understanding of what may required to comply with the rules having later compliance deadline. This may result in a series of sub-optimized decisions . . . [with a] suboptimal overall solution—both from a cost and environmental perspective. For example . . . a source could invest in Boiler MACT controls without a full understanding of the SO₂ NAAQS issued because SO₂ air dispersion modeling has not yet been completed

See NAAQS Implementation Coalition Comments on the 10th Modeling Conference, March 6, 2012 Joseph C. Stanko, Hunton and Williams, at 10 (emphasis added). By regulating these facilities now, the state of Oklahoma can prevent a source from incurring additional expenses through piecemealed legislation.

To avoid inevitable nonattainment designations in nine counties and to bring regulatory certainty to sources in those counties, ODEQ should amend the Draft ISIP to

establish enforceable emission limits to ensure that large sources of SO₂ do not cause exceedances of the one-hour SO₂ NAAQS.

III. THE DRAFT ISIP MUST BE REVISED TO ADDRESS SOURCES SIGNIFICANTLY CONTRIBUTING TO NONATTAINMENT OR INTERFERENCE WITH MAINTENANCE OF THE NAAQS IN DOWNWIND STATES.

Oklahoma must address interstate transport of Oklahoma's emissions that would contribute to exceedances or interfere with the maintenance of the NAAQS. Under section 110(a)(2)(D), a SIP must contain "adequate provisions (i) prohibiting . . . any source . . . from emitting any air pollutant in amounts which will—(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard" 42 U.S.C. § 7410(a)(2)(D)(i)(I); *see also EPA v. EME Homer City Generation*, No. 12-1182, slip op. at 14 (U.S. Apr. 29, 2014) (reiterating that this is a mandatory duty) [hereinafter "*Homer City*"]. Oklahoma's ISIP, as proposed, fails to address any cross-state impacts that are due to sources within the state. This is inadequate and should result in EPA disapproving the submittal.

The Clean Air Act sets a mandatory duty for states to submit ISIPs within three years of promulgation of a NAAQS. 42 U.S.C. § 7410(a)(1). Under CAA section 110, there is no prerequisite action required, such as EPA issuing guidance, before states must fulfill their mandatory duty. *See Homer City* at 14 ("the CAA sets a series of precise deadlines to which the States and EPA must adhere"). ODEQ cannot rely on the fact that EPA's 2013 ISIP Guidance does not address interstate transport provisions. *See Draft ISIP* at 6-7.¹² This guidance directly contradicts the language of the Clean Air Act. Therefore, Oklahoma must create a SIP to address Prongs 1 and 2 of the interstate provisions and provide the public with an opportunity to comment on it.¹³

Moreover, ODEQ cannot rely on its Prevention of Significant Deterioration Program and Air Quality Impact regulation, OAC 252:100-8-35. *See Draft ISIP* at 6. That program and regulation apply only to new sources and modifications. Thus, sources are only evaluated under those regulations when built or undergoing a major modification and only evaluated for contribution to the NAAQS at the time of that action. A plant

¹² The Supreme Court has resoundingly disapproved the belief that states cannot address the section 110(a)(2)(D)(i), the Good Neighbor provision, until EPA first calculates the budget of emissions and gives upwind states the opportunity to propose SIPs allocating those budgets among in-state sources before issuing a FIP. *See Homer City*, 696 F.3d 7, 37 (D.C. Cir. 2012), rev'd, No. 12-1182, slip op. at 27-28 (U.S. Apr. 29, 2014) (stating "nothing in the statute places EPA under an obligation to provide specific metrics to States before they undertake to fulfill their good neighbor obligations" and finding the D.C. Circuit impermissibly altered the clear deadlines in the Act).

¹³ Just as EPA has historically used air dispersion modeling in attainment designations and SIP revisions, so has the agency relied on modeling to assess cross-state impacts under the Act's Good Neighbor provision—section 110(a)(2)(D)(i)(I). Under Clean Air Interstate Rule ("CAIR") and the Cross-State Air Pollution Rule ("CSAPR"), as well as the 2003 NO_x SIP Call, EPA has used modeling to determine pollutants' cross-state impacts. Note that the D.C. Circuit court never questioned the agency's use of modeling to assess cross-state impacts. *See generally North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir. 2008).

built as recently as 2009, therefore would not have submitted to ODEQ an analysis of its compliance with the 2010 SO2 NAAQS. Consequently, ODEQ must revise its ISIP to adequately address section 110(a)(2)(D)(i)(I).

In light of the recent *Homer City* Supreme Court decision, ODEQ should act quickly to address pollution that may be contributing to another state's nonattainment or interfering with another state's maintenance of the 2010 SO2 NAAQS. The Court's decision means Oklahoma must address its exceedances under its own volition or EPA will be required to act instead. In particular, under its current emission limits, the GRDA, Sooner, and Muskogee power plants are impermissibly permitted to cause NAAQS exceedances in the following tribal jurisdictions: Cherokee Nation, the Ponca and Otoe Missouri Nation, and the Muskogee Creek Nation. As such, ODEQ must include proper emission limitations in its ISIP for this plant and others to ensure that they do not contribute significantly to nonattainment or interfere with maintenance of the NAAQS in any downwind state.

IV. OKLAHOMA'S DRAFT I-SIP FAILS TO INCLUDE INFORMATION REGARDING THE EMERGENCY EPISODE PLAN.

Under section 110(a)(2)(G), Oklahoma must provide an emergency plan. Here, Oklahoma claims that this requirement has been satisfied by a plan submitted in 1972 and revised in 1988. *See* Draft ISIP at 11.¹⁴ However, ODEQ does not provide the plan or a link to the plan for the public to evaluate whether it is sufficient to meet the requirements of section 110(a)(2)(G). In order for the public to adequately weigh whether the emergency episode plan is sufficient, Oklahoma must provide the plan. Thus, Oklahoma should revise its Draft ISIP to include the emergency plan.

V. CONCLUSION

The Draft ISIP fails to ensure that the 2010 1-hour SO2 NAAQS is attained and maintained, as described above. Oklahoma must revise the ISIP to adopt adequate emission limits and other standards to protect public health and comply with the Act's requirements. Sierra Club would be happy to provide any other information that might assist Oklahoma in evaluating the impacts of these sources and developing an ISIP in full compliance with the Clean Air Act.

Respectfully submitted,

/s/ Laurie Williams
Laurie Williams
Associate Attorney

¹⁴ Sierra Club disagrees that Oklahoma can ignore its duty to address visibility requirements under Clean Air Act section 110(a)(2)(J). *See* Draft ISIP at 14. The statute clearly states that each plan shall meet the requirements relating to visibility protection. *See* 42 U.S.C. § 7410(a)(2)(J).

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