EARTHJUSTICE

ALASKA CALIFORNIA FLORIDA MID-PACIFIC NORTHEAST NORTHERN ROCKIES
NORTHWEST ROCKY MOUNTAIN WASHINGTON, D.C. INTERNATIONAL

December 11, 2013

VIA EMAIL AND CERTIFIED U.S. MAIL

Honorable Gina McCarthy
Administrator, U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Mail Code: 1101A
Washington, DC 20460

Dear Administrator McCarthy:

Please find enclosed, submitted by Earthjustice on behalf of the Sierra Club: (1) the Sierra Club's Petition to Object to the Issuance of a State Title V Operating Permit Issued by the Alaska Department of Environmental Conservation for Aurora Energy, LLC's Chena Power Plant, Permit No. AQ0315TVP03; (2) a CD of exhibits; and (3) Proof of Service.

If you have any questions about the Petition or other enclosures, please do not hesitate to contact me at 907-792-7103 or cobrien@earthjustice.org.

Sincerely,

/s Colin C. O'Brien
Colin C. O'Brien

Cc: Dennis McLerran, Regional Administrator, U.S. EPA Region 10 (email and U.S. mail)
John F. Kuterbach, Alaska Department of Environmental Conservation (U.S. mail)
Buki Wright, President, Aurora Energy, LLC (U.S. mail)

BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In the matter of:

Aurora Energy, LLC's Chena Power Plant
Permit No. AQ0315TVP03

Issued by the Alaska Department of Environmental Conservation

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PETITION TO OBJECT TO ISSUANCE OF A STATE TITLE V OPERATING PERMIT

Petition No. _____

PETITION OF THE SIERRA CLUB TO OBJECT TO ISSUANCE OF A STATE TITLE V OPERATING PERMIT

Pursuant to section 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), Title 46, Chapter 14 of Alaska Statutes, AS 46.14.220(b), and 40 C.F.R §§ 70.7(f), 70.7(g), and 70.8(d), Sierra Club hereby petitions the Administrator of the U.S. Environmental Protection Agency ("Administrator" or "EPA") to object to Air Quality Control Operating Permit No. AQ0315TVP03 ("Permit") reissued on October 14, 2013, by the Alaska Department of Environmental Conservation ("ADEC" or "Department") for the Chena Power Plant ("Chena Plant" or "Plant") operated by Aurora Energy, LLC, ("Aurora") in Fairbanks, Alaska.[1]

The Administrator must object to the issuance of the Title V Permit because ADEC erroneously issued the Permit (1) based on an arbitrary and unlawful "potential to emit" determination that fails to assure compliance with hazardous air pollutant requirements of the Clean Air Act ("CAA" or the "Act"); (2) without including additional requirements necessary to assure compliance with particulate matter ("PM") emissions limits; and (3) without assuring that the Plant would not violate the applicable requirement established in 18 AAC 50.110.

[1] The Permit is attached at Exhibit 1. For details on the final issuance of the Permit, *see infra* at 3-4 & note 12.

I. INTRODUCTION

The Chena Plant is a coal-fired power generation facility that provides steam and electric power to the City of Fairbanks, Alaska.[2] The Plant uses four boilers to produce power. The boilers known as Chena 1, Chena 2, and Chena 3 are "coal-fired overfeed traveling grate stokers with a maximum steam production rating of 50,000 lbs/hr each;" these units were installed between 1952 and 1954.[3] The fourth boiler, installed in 1970 and known as Chena 5, is a "coal-fired, spreader stoker boiler with a maximum steam production rating of 200,000 lbs/hr and maximum power production rating of 20 MW."[4]

The Plant has the potential to emit more than 100 tons per year each of sulfur dioxide (SO_2), carbon monoxide (CO), and nitrogen oxides (NO_x).[5] The Plant therefore constitutes a "major stationary source" under section 302(j) of the CAA, 42 U.S.C. § 7602(j), subject to the operating permit requirements of Title V of the Act. *Id*. §§ 7661(2)(B), 7661a(a); *see also* 40 C.F.R. §§ 71.2, 71.3(a)(1); 18 AAC 50.326(a)-(b).

II. PETITIONER

Sierra Club is the oldest and largest grassroots environmental group in the United States, with almost 600,000 members nationally, including nearly 1,500 members in Alaska. Sierra Club's members live, work, attend school, travel, and recreate in and around areas potentially affected by the Chena Plant's emissions. These members enjoy and are entitled to the benefits of natural resources including air, water, and soil; forests and cropland; parks, wilderness areas and

[2] ADEC Air Permits Program, Statement of Basis of the terms and conditions for Permit No. AQ0315TVP03, Public Comment Draft (Mar. 22, 2013), attached as Ex. 2 at 2.
[3] *Id*.
[4] *Id*.
[5] *Id*. at 3.

other green space; and flora and fauna, all of which are negatively impacted by air pollutants emitted from the Chena Plant.

III. PROCEDURAL BACKGROUND

On April 22, 2013, Sierra Club submitted detailed comments regarding ADEC's proposal to issue a renewed permit to Aurora for operation of the Chena Plant.[6] The three objections raised in this Petition were raised with specificity in Sierra Club's Comment Letter.[7] 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

ADEC initially overlooked the Comment Letter, issuing on May 24, 2013, a Statement of Basis, Response to Comments, and permit determination that did not acknowledge or address any of the issues raised in the Comment Letter.[8] By email dated June 5, 2013, counsel for Sierra Club advised ADEC of the Department's failure to address the Comment Letter.[9] ADEC responded by acknowledging "an oversight by the Department which must be corrected" and "re-opening the permit to address the complete public comment submittal."[10]

After issuing a Revised Response to Comments—and declining to change the Permit in any way—ADEC submitted the proposed Title V Permit to EPA on August 28, 2013.[11] EPA's 45-day review period ended on October 12, 2013. EPA did not object to the Permit and ADEC

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[6] Sierra Club's comment letter ("Comment Letter") is attached as Exhibit 3.
[7] *See* Comment Letter, Ex. 3 at 2-11.
[8] *See generally* ADEC Air Permits Program, Statement of Basis of the terms and conditions for Permit No. AQ0315TVP03 (May 24, 2013) ("Statement of Basis"), attached as Ex. 4; *see also* ADEC, Air Quality Operating Permit Response to Comments, Permit No. AQ0315TVP03 (undated) (stating comments were received from permittee Aurora only), attached as Ex. 5 at 1.
[9] The email is attached as Exhibit 6.
[10] Letter from Jim Baumgartner, ADEC to A.L. (Buki) Wright, Aurora, re. Permit Re-Opening for the Aurora Energy, LLC, Chena Power Plant, Air Quality Control Operating Permit No. AQ0315TVP03, File No. 102.16.012 (June 6, 2013), attached as Ex. 7.
[11] *See* Letter from Jim Baumgartner, ADEC to Laurie Kral, U.S. EPA Region 10, re Re-Submission of Proposed Renewal Operating Permit No. AQ0315TVP03 for Aurora Energy LLC, Chena Power Plant, File # 102.16.012 (Aug. 28, 2013), attached as Ex. 8.

issued it in final form on October 14, 2013.[12] This Petition to Object is timely filed within 60 days of the conclusion of EPA's review period on October 12, 2013, and failure to raise objections. 42 U.S.C. § 7661d(b)(2); AS 46.14.220(b); 40 C.F.R. § 70.8(d).

IV. LEGAL REQUIREMENTS

All major stationary sources of air pollution are required to apply for operating permits under Title V of the CAA. 42 U.S.C. § 7661a(a); 18 AAC 50.326(a). 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. 42 U.S.C. §§ 7661a(a), 7661c(a); *see also* 40 C.F.R. § 70.6(a)(1). Title V permits issued by ADEC are considered federally enforceable, *see* 18 AAC 50.345(c), and the Department "will only issue a permit if the permit conditions provide for compliance with all applicable requirements" and the requirements of Alaska's Title V operating permit regulations. 18 AAC 50.326(k)(2). Alaska's regulations adopt the definitions of 40 C.F.R. § 71.2, where the term "applicable requirement" is defined. 18 AAC 50.326(b), (b)(2); 40 C.F.R. § 71.2. Noncompliance by a source with any provision of a Title V permit constitutes a violation of the CAA and provides grounds for an enforcement action against the source. 42 U.S.C. § 7661(a); 18 AAC 50.345(c).

Where a state or local permitting authority like ADEC issues a Title V operating permit, EPA will object if the permit is not in compliance with any applicable requirements under 40 C.F.R. part 70. 40 C.F.R. § 70.8(c). If EPA does not object, "any person may petition the

[12] Letter from Jim Baumgartner, ADEC to A.L. (Buki) Wright, Aurora, re. Final Air Quality Control Operating Permit No. AQ0315TVP03 for Aurora Energy LLC, Chena Power Plant, File # 102.16.012; Re-Affirmation of Final Permit after Re-Opening (Oct. 14, 2013), attached as Ex. 9.

Administrator within 60 days after the expiration of the Administrator's 45-day review period to make such objection." 40 C.F.R. § 70.8(d); *see also* 42 U.S.C. § 7661d(b)(2); AS 46.14.220(b).

"The Administrator shall issue an objection . . . if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of [the CAA]." 42 U.S.C. § 7661d(b)(2); *see also* 40 C.F.R. § 70.8(c)(1); *N.Y. Pub. Interest Grp. v. Whitman*, 321 F.3d 316, 334 (2nd Cir. 2003) ("[O]nce NYPIRG demonstrated to the EPA that the draft permits were not in compliance with the CAA, the EPA was *required* to object to them.") (emphasis added). The Administrator must grant or deny a petition to object within 60 days of its filing. 42 U.S.C. § 7661d(b)(2). While the burden is on a petitioner to demonstrate to EPA that a Title V Permit is deficient, once that showing has been made, "EPA has no leeway to withhold an objection." *Sierra Club v. EPA*, 557 F.3d 401, 405 (6th Cir. 2009); *see also NYPIRG*, 321 F.3d at 332-34.

V. GROUNDS FOR OBJECTION

A. ADEC erroneously issued the Permit based on an arbitrary and unlawful "potential to emit" determination that fails to assure compliance with hazardous air pollutant requirements of the Clean Air Act.

Hazardous air pollutants ("HAPs") are regulated under section 112 of the CAA. 42 U.S.C. § 7412. The purpose of the Act's HAP program is to force the stringent control of these highly toxic and harmful air pollutants because they could "cause, or contribute to, an increase in mortality or an increase in serious irreversible[] or incapacitating reversible[] illness." *New Jersey v. EPA*, 517 F.3d 574, 578 (D.C. Cir. 2008) (quoting legislative history of section 112). A "major source" of HAPs is subject to maximum achievable control technology ("MACT") standards that require the maximum degree of emission reduction that the EPA determines to be achievable by each particular source category. 42 U.S.C. § 7412(d)(2). Pursuant to section

112(a)(1), a "major source" is one that "emits or has the potential to emit . . . 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants." *Id*. § 7412(a)(1). Due to the importance of controlling HAPs, it is crucial that sources accurately identify and control potential HAP emissions.

As detailed below, the Permit is premised upon an arbitrary and unlawful determination that the Chena Plant is a minor source of HAPs. Lacking both an accurate and lawful finding on the Plant's "potential to emit" ("PTE") HAPs, the Permit fails to include all applicable requirements under Title V. The Administrator therefore must object to the Permit and require that ADEC reopen and revise the Permit to comply with statutory and regulatory requirements for determining a source's PTE.

1. ADEC erroneously issued the Permit without sufficient information to determine the Chena Plant's potential to emit HAPs and all applicable requirements.

While acknowledging unresolved "uncertainties" and "questions . . . regarding the analyses as they apply to potential emissions,"[13] ADEC nonetheless determined that "the Chena Power Plant is not hazardous air pollutant major in that it presently does not have the potential to emit 10 tons of any HAP and does not have the potential to emit 25 tons of HAP in the aggregate."[14] The two HAPs of concern at the Plant are hydrogen fluoride (HF) and hydrogen chloride (HCl), with HF the most likely to exceed the major source threshold of 10 tons annually. ADEC "calculated HAP emissions for HF and HCl using emission factors from a 2005 source test and AP-42, Table 1.1-18."[15] Based on the 2005 source test, ADEC found that "[t]he major

[13] Statement of Basis, Ex. 4 at 9
[14] *Id*. at 5.
[15] *Id*. at 4.

component, HF, comprises a PTE of 6.13 [tons per year]"[16] and concluded that the Plant therefore constitutes a "true minor source of HAPS (sic)."[17]

ADEC's reliance on the Chena Plant's 2005 source test contradicts a previous finding of the agency's Director, made in a Decision on Informal Review pursuant to 18 AAC 15.185, that the very same test results were potentially "biased low" and therefore inadequate to render "a credible determination as to whether the Chena Power Plant has potential emissions of a single hazardous air pollutant with emissions of 10 tons or more per year or if aggregate hazardous air pollutants are emitted at 25 tons per year or more."[18] As a consequence of the Director's determination, Aurora undertook two subsequent source tests.[19] Those subsequent source tests produced conflicting results. A test in 2007 indicated that the Chena Plant emits more than 10 tons of HF annually while a test in 2011 indicated HF emissions of less than 10 tons per year.[20] As a consequence of these tests—the 2007 test, in particular—Aurora thrice submitted owner requested limits to avoid hazardous air pollutant major status between 2007 and 2012, although all three requests ultimately were withdrawn.[21]

For purposes of the Permit, ADEC has declined to credit the results of the 2007 tests—which the Department believes utilized the wrong analytical method—or the 2011 tests, which failed quality control procedures. Instead, the Department issued a letter on February 25, 2013,

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[16] *Id*.
[17] ADEC, Air Quality Operating Permit Revised Response to Comments, Permit No. AQ0315TVP03 (undated) ("Revised Response to Comments), attached as Ex. 10 at 11.
[18] Letter from Tom Chapple, Director, ADEC, to Buki Wright, Aurora, re Decision on Informal Review for Operating Permit #AQO315TVP02 (May 12, 2006) ("Director Chapple's 2006 HAP Decision"), attached as Ex. 11 at 4.
[19] *Id*.
[20] *See* Letter from Buki Wright, Aurora, to John Kuterbach, ADEC, re Aurora's Hazardous Air Pollutant Status Determination (Dec. 18, 2012), attached as Ex. 12 at 1-2.
[21] Statement of Basis, Ex. 4 at 5.

declaring that "only the July 2005 test produced reliable results" and "[t]herefore, ADEC will base its estimate of Aurora's potential to emit HAPs on the 2005 source test results."[22]

ADEC's decision to premise the agency's PTE calculation for HAPs and its determination of applicable requirements on the discredited 2005 test results is unsupported by available information and arbitrarily reverses, without any real explanation, the Director's previous determination that there is "reason to doubt the accuracy of measured emission rates for 2005."[23] While the Department's February 2013 letter on the subject identifies flaws with the 2007 and 2011 source tests,[24] flaws with those later tests do not support a decision to revert to the 2005 test results which were independently determined by the ADEC Director to be too unreliable. Nowhere does ADEC's February letter explain how "the original uncertainty about the 2005 test," including "uncertainty about the ongoing halogen content of the fuel,"[25] has been resolved.

Instead, the letter suggests that the 2005 results may be viewed as conservative owing to the "subsequent addition of full-steam particulate control [that] would improve removal of particulate halogens from boiler exhaust."[26] No substantiation or quantification is offered for this suggestion, nor does the letter address whether potential reductions in HF emissions attributable to an additional control might be sufficient to offset the "low" bias suspected of the 2005 test results.[27] In its Revised Response to Comments, ADEC also argues that the 2005

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[22] Letter from John Kuterbach, ADEC, to Buki Wright, Aurora, re. Aurora's Hazardous Air Pollutant Status Determination(Feb. 25, 2013) ("Kuterbach Letter"), attached as Ex. 13 at 2.
[23] Director Chapple's 2006 HAP Decision, Ex. 11 at 4.
[24] Kuterbach Letter, Ex. 13 at 1-2.
[25] *Id*. at 2.
[26] *Id*.
[27] *See* Director Chapple's 2006 HAP Decision, Ex. 11 at 4 ("[T]he emission quantity calculated by Aurora Energy that are based upon the March 2005 source tests could ultimately be biased low . . . .").

source tests are conservative because they used "coal with a halogen content greater than that normally fired in Aurora's boilers . . . ."[28] This view contradicts the previous finding of ADEC's Director that the 2005 test results, along with similar test results from a nearby power plant, "indicate a broader than expected variation in data . . . *that does not readily appear to directly correlate with the variation of fluoride or chloride content of the coal* being fed to the boiler."[29] Nowhere in the supporting documentation for the Permit does the Department address, let alone resolve, the Director's previous finding that HF and HCl emissions at the Plant do not correlate with fuel halogen content. Significantly, it is the view of "at least two [Department] engineers who examined the [2005] data . . . that the specific attributes of the boiler and/or its operation during the time of the emissions test have a significant effect upon the actual out-of-stack emissions of . . . hazardous air pollutants."[30] Yet ADEC has neglected to assess whether the Plant's physical plan and operations are similar to those assessed in 2005.

ADEC appears to have returned to the doubtful 2005 test results based on a misguided process of elimination whereby the Department views the 2005 source tests as a "lesser evil" among the three sets of source test data.[31] However, one obvious solution was available to the Department to address the flawed data: require another round of testing to obtain accurate data. ADEC dismissed this option out of apparent frustration and impatience, with Air Permits Program Manager John Kuterbach stating that "[g]iven the time and effort that has already gone

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[28] Revised Response to Comments, Ex. 10 at 11.
[29] Director Chapple's 2006 HAP Decision, Ex. 11 at 3 (emphasis added); *see also id*. (Agency staff "examined this situation and . . . consulted others to ascertain if there is, or would expected to be, a direct correlation between input quantity of fluoride or chloride and the exhausted quantity. There appears to be no reliable correlation[.]").
[30] *Id.*
[31] *See* Kuterbach Letter, Ex. 13 at 1-2 (describing problems with the 2007 and 2011 tests and then stating that "[f]rom the above, I am *left* with the conclusion that only the July 2005 test produced reliable results . . . .") (emphasis added).

into source testing, I am not convinced that future attempts will get more definitive data."[32] But Manager Kuterbach's skepticism of additional testing lacks foundation. For example, the 2007 test "used the wrong method to analyze collected samples."[33] Aurora and its technical experts presumably will not repeat this mistake. Likewise, the 2011 test failed laboratory quality control procedures,[34] suggesting further refinements to the way samples are handled and tested.

The Department's reluctance to seek additional information notwithstanding, ADEC may not issue a Title V permit if it lacks the definitive data necessary to evaluate an air permit application and to determine all applicable requirements pursuant to Title V. Federal and state regulations are very clear regarding an applicant's duty to provide information to the state permitting agency during the permitting process. *See generally* 40 C.F.R. § 70.5; *see also id.* § 71.5; 18 AAC 50.040(j)(3) (adopting by reference 40 C.F.R. § 71.5(a)-(c)). The information "must be sufficient to evaluate the subject source and its application and to determine all applicable requirements." 40 C.F.R. § 70.5(a)(2) *see also id.* § 71.5(a)(2) (same); 18 AAC 50.040(j)(3) (adopting by reference 40 C.F.R. § 71.5(a)(2)). "An application may not omit information needed to determine the applicability of, or to impose, any applicable requirement," 40 C.F.R. § 70.5(c), and an applicant must provide any additional information that the permitting agency determines "is necessary to evaluate or take final action on that application," or that "may be necessary to implement and enforce other applicable requirements of the Act or . . . to determine the applicability of such requirements." *Id.* §§ 70.5(a)(2), (c)(5). ADEC, in turn, has both the authority to request the information necessary to evaluate fully a permit application as well as the responsibility to do so before it issues a permit. For that reason, the Administrator

[32] *Id.* at 2.
[33] *Id.* at 1.
[34] *Id.* at 1-2.

previously has granted petitions to object where she was unable to "ensure that the record contains sufficient information to evaluate the source and determine all applicable requirements." *See, e.g., In re Murphy Oil USA, Inc., Meraux Refinery, St. Bernand Parish, La,* Order Granting in Part and Denying in Part Petition for Objection to Permit, Pet. No. VI-2011-02 at 6 (EPA Sept. 21, 2011).[35]

Here, despite ADEC's decision to accept the 2005 source test results, the Department continues to lack the information necessary to determine whether the Plant is a major or minor source of HAPs. In fact, ADEC itself conceded in the Statement on Basis that "uncertainties remain regarding Aurora's potential HF and HCl emissions" and "questions remain regarding the analyses as they apply to potential emissions."[36] ADEC may not lawfully ignore these admitted "uncertainties" and "questions" concerning whether the Plant is properly classified as a minor source of HAPs. ADEC's Director previously determined that the 2005 source tests conducted by Aurora were insufficient "to render a credible determination" of the Plant's potential to emit HAPs.[37] The Director ordered Aurora to "perform additional emission testing on all Chena boilers to re-test for hydrogen fluoride and hydrogen chloride emissions" and directed Department staff "to use those results to calculate potential emissions."[38] Additional testing has not yet produced reliable data—meaning ADEC still lacks the test results necessary to identify or institute those "applicable requirements" for HAPs. In light of this fundamental shortcoming, the Administrator must object to the Permit.

[35] Attached as Ex. 14.
[36] Statement of Basis, Ex. 4 at 9
[37] Director Chapple's 2006 HAP Decision, Ex. 11 at 4.
[38] *Id*.

2. ADEC's PTE determination erroneously relies on assumed operating parameters that are not accurate and not federally enforceable.

Independent of the ongoing lack of reliable test results to assess emissions, ADEC's conclusion that Aurora is "a true minor source of HAPs"[39] violates legal requirements for determining a source's PTE—and the Administrator must object to the Permit on that Basis.

ADEC does not dispute that a source's PTE is "the maximum capacity of a stationary source to emit a pollutant under its physical and operational design." 40 C.F.R. § 51.166(b)(4). According to ADEC, in this particular instance, the Plant's "physical and operational design includes the use of Usibelli coal as shipped to them."[40] Based on that faulty assumption, the Department asserts that the HF emissions levels measured in 2005 reflect "the variability of Aurora's coal supply halogen content" and, in turn, concludes that "[t]he resulting PTE calculation based on the 2005 emissions source test therefore . . . shows Aurora to be a true minor source of HAPS."[41]

Though the Department's determination of PTE and applicable requirements is premised on assumptions about the particular source, quantity, and quality of coal to be used at the Plant, the Permit does not contain any conditions that constrain fuel use or otherwise limit operations at the Plant to maintain HAP emissions below the major source threshold.[42] Instead, the Permit merely includes a monitoring provision that "require[es] the Permittee to monitor and report the fuel halogen content of the coal fuel fired in the emission units[,] . . . trigger[ing] additional HCl and HF source testing when that coal halogen content has increased to a level 50% greater than

[39] Kuterbach Letter, Ex. 13 at 2.
[40] Revised Response to Comments, Ex. 10 at 11.
[41] *Id*.
[42] Statement of Basis, Ex. 4 at 5 ("Between 2007 and 2012, Aurora submitted and withdrew three owner requested limits to avoid hazardous air pollutant major status.").

that representative of the 2005 halogen test"[43]—to be calculated on a 12-month rolling basis.[44] In other words, the Permit assumes that the Plant will operate as minor source but, owing to considerable uncertainty, leaves the ultimate question of the Plant's PTE unresolved and includes provisions for monitoring and potential future testing. However, because the Permit does not require additional emissions testing until elevated halogen content in the fuel is documented for a rolling 12-month period, the Plant could intermittently exceed the major source emissions threshold or exceed it for an entire year before additional testing would be required—thereby evading "applicable requirements" that the Act and Title V requires for a major source of HAP.

ADEC's determination of the Plant's PTE and lax, open-ended approach to instituting applicable requirements directly violate legal requirements for determining a source's PTE. Under Alaska state statute as well as state and federal regulations, a source's PTE is defined as follows:

> Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. *Any physical or operational limitation on the capacity of the source to emit a pollutant, including* air pollution control equipment and restrictions on hours of operation or on the *type or amount of material combusted,* stored, or processed, *shall be treated as part of its design if the limitation* or the effect it would have on emissions *is federally enforceable*.

40 C.F.R. § 51.166(b)(4) (emphasis added); 18 AAC 50.040(h)(4)(B)(i) (stating "potential to emit" has the meaning given in AS 46.14.990); AS 46.14.990(22) (stating "potential to emit" has the meaning given in 40 C.F.R. § 51.166(b)); *see also* 40 C.F.R. § 70.2 (defining "potential to emit").

By definition, a PTE determination must satisfy two requirements: (1) first, the calculated PTE must reflect a source's "*maximum* capacity" to emit a pollutant; and (2) second, to the

[43] Statement of Basis, Ex. 4 at 9 (describing Permit § 12).
[44] Permit, Ex. 1 at 9-11, Conditions 12-12.3.

extent that a permittee or agency claims that maximum capacity to emit is constrained in any way, the constraint must be explicitly set forth in the permit as a physical or operational limit—i.e., a specific limit on fuel, hours of operation, or pollution control equipment operating parameters—that is "*federally enforceable*." The Department's determination of the Plant's PTE and the Permit violate both of these requirements.

First, there simply is no disputing that ADEC's calculated PTE for the Plant, 6.13 tons per year of HF,[45] is not the "maximum capacity" of the Plan to emit HF. This figure, calculated by applying emissions factors to the 2005 source test rests,[46] necessarily reflects "the fuel halogen content" of the coal as "it was in 2005."[47] ADEC has conceded that there is "variability in the coal halogen content"[48] and corresponding "uncertainty."[49] According to the Department, it is readily conceivable that an increase in fuel halogen content could "result in over 9 TPY" of HF emissions, "which is close to the 10 TPY threshold for major sources."[50] This statement by ADEC constitutes an admission that the Chena Plant's HF PTE—i.e., its "maximum capacity" to emit HF under its "physical and operational design"—is at least 9 tons per year and potentially exceeds the 10-ton major source threshold for HAPs if assessed at its true maximum. In its Revised Response to Comments, ADEC offered this defense: "a statement that changes in fuel quality could result in emissions over 9 tons should not be interpreted that emissions are likely to be over 10 tons."[51] This statement is no defense, however, as a source's PTE is not determined based on the basis of its "likely" emissions but rather its "maximum capacity" to emit pollution.

[45] Statement of Basis, Ex. 4 at 4.
[46] *Id*.
[47] Kuterbach Letter, Ex. 13 at 2.
[48] Revised Response to Comments, Ex. 10, at 11.
[49] Kuterbach Letter, Ex. 13 at 2.
[50] *Id*.
[51] Revised Response to Comments, Ex. 10 at 11.

ADEC's approach, which explicitly acknowledges but does not account for variability or potentially increased fuel halogen content and HAP emissions above those measured in 2005, violates the statutory and regulatory requirement that a PTE calculation reflect a source's *maximum* capacity to emit a pollutant. 40 C.F.R. § 70.2 (definition of "potential to emit"); AS 46.14.990(22); 40 C.F.R. § 51.166(b)(4); *see also* 18 AAC 50.040(h)(4)(B)(i).

Second, under the terms of the Permit, ADEC's determination that the "physical and operational design" of the Plant "includes the use of Usibelli coal as shipped to them"[52] violates the statutory and regulatory definition of PTE. In order to avoid imposition of certain statutory or regulatory requirements of the CAA, a source may "synthetically" reduce its PTE by adopting physical or operational limits—provided, however, that "[a]ny physical or operational limitation . . . is federally enforceable." 40 C.F.R. § 51.166(b)(4); AS 46.14.990(22); 18 AAC 50.040(h)(4)(B)(i); *see also In re Peabody W. Coal Co.*, 12 E.A.D. 22, 31 (EAB 2005). Physical and operational limits may only be considered "federally enforceable" if "legally . . . enforceable mechanisms" exist "to make certain that the emissions remain below the relevant levels." *Weiler v. Chatham Forest Prods.*, 392 F.3d 532, 535 (2nd Cir. 2004). Under EPA's longstanding interpretation of this requirement, physical and operational limits must be set forth in a "permit issued pursuant to an EPA-approved permitting program or a permit directly issued by EPA . . . ."[53] Here, ADEC's determination of the Plant's PTE is premised unlawfully on assumptions about the particular source, quantity, and quality of coal to be used at the Plant—absent any

[52] *Id*.

[53] *See* Memorandum from Terrell E. Hunt, Associate Enforcement Counsel, EPA, re Guidance on Limiting Potential to Emit in New Source Permitting (June 13, 1989), attached as Ex. 15 at 2; *see also* Memorandum from John S. Seitz, Director, Office of Air Quality Planning and Standards, re Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Jan. 25, 1995), attached as Ex. 16at 2-3 (discussing federal enforceability).

"federally enforceable" Permit provisions actually limiting fuel use. Unless limits on fuel source, quality, and quantity are instituted as Permit requirements, ADEC may not rely upon them to adjust the Plant's PTE downward.

Given that ADEC both lacked sufficient information to determine the Plant's potential to emit HAPs and ignored legal requirements for determining PTE, the Administrator must object to the Permit because it is "not in compliance with the requirements of [the CAA]." 42 U.S.C. § 7661d(b)(2); *see also NYPIRG*, 321 F.3d at 334. Consistent with 40 C.F.R §§ 70.7(f) & 70.7(g), EPA also should direct ADEC to reopen and revise the Permit as follows:

- Owing to the lack of reliable emissions data, the Permit should be revised to include a requirement that Aurora perform additional emissions testing on all of the Plant's boilers and other emissions units to assess HF and HCl emissions.
- Because a source test informs but does not establish PTE, both now and again after additional source testing is conducted, ADEC must recalculate the Chena Plant's PTE to reflect the Plant's "maximum capacity" to emit HAPs under its physical and operational design, accounting for maximum fuel halogen content, maximum fuel usage, variability among units, variability in operating conditions, and any other factors that may contribute to worst-case HAP emissions.
- In the absence of Permit conditions necessary to limit the Plant's emissions of HAPs, ADEC—based on a revised and more accurate calculation of the Plant's PTE—must either:
    i. explicitly institute federally and practically enforceable limit(s) on fuel source, fuel quantity, fuel quality, operating hours and/or some other operational variable

sufficient to reduce the Plant's PTE below the major source threshold for HAPs; or

ii. incorporate into the Permit those emissions limits and other conditions necessary for the Plant to comply with the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters ("Boiler MACT Standard"), 40 C.F.R. Part 63 Subpart DDDDD.

- ADEC must incorporate new monitoring requirements consistent with any new limits on the Plant's PTE or institution of requirements to comply with the Boiler MACT Standard.

B. ADEC erroneously issued the Permit without including additional requirements necessary to assure compliance with PM limits.

A fundamental purpose of the Title V permit is to set forth in one place not only all of the requirements applicable to a pollution source, but also provisions needed to assure compliance with each of those requirements. As EPA explained in the preamble to the Title V regulations, "regulations are often written to cover broad source categories" leaving it "unclear which, and how, general regulations apply to a source." 57 Fed. Reg. 32,250, 32,251 (July 21, 1992). Title V permits bridge this gap by "clarify[ing] and mak[ing] more readily enforceable a source's pollution control requirements," including making clear how general regulatory provisions apply to specific sources. S. Rep. 101-228 (1989), *reprinted in* 1990 U.S.C.A.A.N. 3385, 3730. In short, Title V permits are supposed to link general regulatory provisions to a specific source to provide a way "to establish whether a source is in compliance." 57 Fed. Reg. at 32,251.

Consistent with this purpose, the CAA and Title V regulations emphasize the importance of compliance assurance provisions, including adequate monitoring. For example, the Title V provisions of the Act require that, in addition to "enforceable emission limitations and standards . . . [e]ach permit issued under [Title V] shall set forth inspection, entry, monitoring, compliance

certification, and reporting requirements to assure compliance with the permit terms and conditions." 42 U.S.C. §§ 7661c(a),(c); *see also* 40 C.F.R. § 70.6(c)(1); *id.* § 71.6(c)(1); AS 46.14.180; 18 AAC 50.040(j)(4) (adopting by reference 40 C.F.R. § 71.6(a)-(f), including 40 C.F.R. § 71.6(c)(1)). The U.S. Court of Appeals for the D.C. Circuit has explained that these provisions establish not only that "a permitting authority may supplement an inadequate monitoring requirement so that the requirement will 'assure compliance with the permit terms and conditions,'" but that "a monitoring requirement insufficient 'to assure compliance' with emission limits has no place in a permit unless and until it is supplemented by more rigorous standards." *Sierra Club v. EPA*, 536 F.3d 673, 677, 680 (D.C. Cir. 2008).

In order to satisfy the statutory requirement that Title V permits "shall set forth . . . monitoring . . . requirements to assure compliance" with the emissions limits in the permit, 42 U.S.C. § 7661c(c), the frequency of emissions monitoring must reflect the averaging time used to determine compliance. *Sierra Club*, 536 F.3d at 675 (noting that if an "applicable requirement does not require periodic testing," agency must "add to the permit 'periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit.'") (quoting 40 C.F.R. § 70.6(a)(3)(i)(B)); *see also* 40 C.F.R. § 71.6(a)(3)(i)(B); 18 AAC 50.040(j)(4) (adopting by reference 40 C.F.R. § 71.6(a)-(f), including 40 C.F.R. § 71.6(a)(3)(i)(B)). In all cases, the rationale for a permitting agency's selected monitoring requirements must be documented and must describe why the chosen monitoring regime is adequate to assure compliance with the emissions limit. *See* 40 C.F.R. § 71.7(a)(5); 18 AAC 50.040(j)(5) (adopting by reference 40 C.F.R. § 71.7(a)-(e), including 40 C.F.R. § 71.7(a)(5)).

The Permit establishes PM emission limits for each of the six non-fugitive emission units at the Plant (EU IDs 1 and 3-7). The six non-fugitive emission units include a coal preparation plant (EU ID 1), an ash vacuum pump exhaust (EU ID 3), and the Plant's four coal-fired boilers (EU IDs 4-7).[54] For each of these emissions units, the Permit establishes a PM limit of "0.1 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours."[55] For the coal preparation plant and ash vacuum pump exhaust, Aurora may monitor compliance with the PM limit by undertaking visible emissions monitoring, to be performed as infrequently as once annually.[56] For the boilers, the Permit institutes monitoring in the form of PM source tests to be performed as infrequently as every five years,[57] as well as a continuous opacity monitoring system ("COMS") that is subject to a "Compliance Assurance Monitoring" ("CAM") regimen for opacity levels and baghouse pressure.[58] These monitoring provisions are inadequate to assure compliance with the Permit's PM limits and, for this reason, the Administrator must object to the Permit.

With respect to the coal preparation plant and ash vacuum pump exhaust (EU IDs 1 and 3), the Permit only requires visible emissions monitoring that may be performed as infrequently as once annually using EPA Method 9.[59] This approach fails to assure compliance with the PM limit for several reasons. First, not only is visible emissions monitoring considered a "lesser" monitoring method for opacity, but opacity itself is an imperfect indicator of PM concentrations. Second, requiring a single, 18-minute period of observation for visible emissions during a year does not assure compliance, but instead provides nothing more than a snapshot, often taken

[54] *See* Permit, Ex. 1 at 2, Section 2 & Table A.
[55] *Id*. at 7, 14, Conditions 6 & 17.
[56] *Id*. at 3-5, 7-8, Conditions 3-3.3 & 7-7.2.
[57] *Id*. at 14-15, Condition 18.2.b.
[58] *Id*. at 12-13, 15, Conditions 15-15.6 & 20-20.2.
[59] *Id*. at 3-5, 7-8, Conditions 3-3.3 & 7-7.2.

under optimal operating conditions, that tells little about the emissions from that unit when the monitoring is not underway. Additionally, in violation of regulatory requirements, ADEC does not explain how such ill-suited, infrequent monitoring is adequate to assure that the Plant's coal preparation plant and ash vacuum pump exhaust comply with the PM emissions limit which applies at three-hour intervals.[60]

In the Revised Response to Comments, ADEC defends its monitoring approach for the coal preparation plant (EU ID 1) by asserting that it is consistent with "the opacity monitoring specified in the [New Source Performance Standard ("NSPS")]."[61] However, the monitoring requirement for EU ID 1 was not included in the Permit to assure compliance with the NSPS. Rather, the monitoring was instituted to "ensure compliance with the applicable requirement in 18 AAC 50.055(b)," a requirement that "applies to operation of all industrial processes and fuel burning equipment in Alaska" and is "contained in [Alaska's] Federally approved [state implementation plan ("SIP")] effective September 13, 2007."[62] This strict, short-term applicable requirement necessitates a strict monitoring approach, requiring that ADEC "add to the permit 'periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit.'" *Sierra Club,* 536 F.3d at 675.

The ash vacuum pump exhaust (EU ID 3) also is subject to the strict emissions limit established in 18 AAC 50.055(b),[63] and the annual monitoring provision for it likewise is plainly inadequate to assure compliance with the limit that requires compliance over three-hour intervals. ADEC offered a novel defense of its monitoring approach in the Revised Response to

[60] *See* Statement of Basis, Ex. 4 at 8 (stating without explanation that the monitoring will "ensure compliance with the applicable requirement in 18 AAC 50.055(b)").
[61] Revised Response to Comments, Ex. 10 at 14.
[62] Statement of Basis, Ex. 4 at 8.
[63] *Id*.

Comments, arguing that "[s]ince the Chena Power Plant is within the city of Fairbanks proper they are under public scrutiny of emissions visible to the general public on a daily basis."[64] It goes without saying that members of the general public are not trained to assess opacity levels or to identify PM emissions limit violations.

The lack of adequate PM monitoring in the Permit is similarly pronounced for the Plant's boilers (EU IDs 4 through 7). For those units, subject to the same three-hour PM emissions limit as the coal preparation plant and ash vacuum pump exhaust, the Permit allows PM source tests as infrequently as every five years—but no more frequently than annually.[65] One stack test taken over a five-year period, or even a one-year period, does not assure compliance with the short-term applicable requirement for PM emissions. Such an approach would base compliance with the PM limit for the coal-fired boilers on the results of a few hours of operations out of a potential of up to 43,800 hours of operation of each unit over five years. It simply is not reasonable to conclude that such a limited snapshot—whether taken once every five years or even annually—is adequate to assure that the Permit's PM emissions limits, measured in three-hour increments, are being consistently met.

The Permit also monitors the boilers' compliance with the PM emissions limit through COMS and an associated CAM plan.[66] Nonetheless, the use of a COMS and CAM plan at the Plant fails to assure compliance with the PM limits for two reasons. First, as noted above, opacity is an imperfect criterion by which to judge PM emissions because opacity does not account for transparent or condensable PM. As such, while the presence of an opacity violation indicates a PM emissions violation, the absence of an opacity violation does not mean that PM

[64] Revised Response to Comments, Ex. 10 at 15.
[65] Permit, Ex. 1 at 14-15, Condition 18.2.
[66] *Id*. at 12-13 & 15, Conditions 15-15.6 & 20-20.2.

emissions are under the allowable limit. Second, even if opacity were a reliable stand-in for PM emissions, the Permit does not actually provide that an exceedance of the opacity indicator range constitutes a violation of the PM limit. Instead, the Permit provides that even if more than five percent of opacity readings over a six month period show exceedances of the opacity indicator range, Aurora need only "develop and implement a Quality Improvement Plan . . . as expeditiously as practicable."[67] Because opacity is a poor indicator of PM emissions and the Permit's opacity monitoring and compliance provisions are not linked to the Permit's PM emissions limit for the boilers, the Permit fails to assure compliance and the Administrator therefore must object.

Instead of these inadequate PM monitoring provisions, EPA should urge ADEC to reopen the Permit and revise it to require the use of PM continuous emissions monitors ("CEMs") on each of the Plant's non-fugitive emissions units. "The use of CEMs for PM and other pollutants is already common" and the technology has been installed at power plants, including two coal-fired power plants owned by Dominion in Virginia.[68] EPA promulgated performance specifications for PM CEMs at 40 C.F.R. Part 60, Appendix B, Specification 11, on January 12, 2004, thereby demonstrating that PM CEMs has been an accepted means of assessing compliance with particulate emissions for nearly a decade. *See* 69 Fed. Reg. 1,786 (Jan. 12, 2004). Furthermore, EPA and state agencies have required coal-fired power plants to install, operate, calibrate, and maintain PM CEMs as a term in numerous consent decrees; affected plants include Tampa Electric Company, Virginia Electric Power Company, Wisconsin Electric

[67] *Id*. at 16, Condition 20.3(c) (describing CAM corrective actions).
[68] Environment Maryland Research & Policy Center, Particulate Matter Pollution from Maryland Power Plants (June 2007), attached as Ex. 17 at 14.

Inc., and South Carolina Public Service Authority.[69] Implicit in these decrees is the fact that PM CEMs are available, reliable, and economically and technically feasible. The Permit should require installation of PM CEMs on all of the non-fugitive units at the Plant to assure compliance with the PM emission limits that are applicable to those units.

C. ADEC erroneously issued the Permit without assuring that the Plant would not violate the applicable requirement established by 18 AAC 50.110.

The Permit, reiterating a bedrock requirement of Alaska's air quality regulations set forth at 18 AAC 50.110, states: "No person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property."[70] Significantly, 18 AAC 50.110 has been part of Alaska's federally-approved SIP since 1972.[71]

The Permit, however, allows emissions of SO_2 and NO_x that may violate this requirement by causing exceedances of the recently promulgated 1-hour National Ambient Air Quality Standards ("NAAQS") for SO_2 and NO_2, respectively. The Administrator should object to the Permit because ADEC has neglected to evaluate, through air quality modeling, whether SO_2 or NO_x emissions allowed under the Permit would cause violations of the respective NAAQS, and has failed to institute emissions limit(s) at the level(s) needed to ensure that emissions from the Plant do not violate the NAAQS or, in turn, violate 18 AAC 50.110.

In the Revised Response to Comments, ADEC argued that to undertake air modeling to demonstrate compliance with 18 AAC 50.110 would be akin to instituting a new "applicable

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[69] Andracsek et al., PM CEMS: The Current Reality of Monitoring Particulate Matter (Nov. 28, 2006), attached as Ex. 18 at 2; *see also generally* EPA, Office of Air Quality Planning and Standards, *Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring*, EPA-454/R-00-039 (Sept. 2000), attached as Ex. 19.

[70] Permit, Ex 1 at 33, Condition 55.

[71] EPA Region 10, Alaska SIP – Federally Approved Rules (Dec. 10, 2013), Ex. 20 at 2.

requirement."[72] This view is mistaken, as "[a]ny standard or other requirement provided for in the applicable implementation plan" constitutes an "applicable requirement." 40 C.F.R. § 70.2 (definition of "applicable requirement"); *id.* § 71.2 (same); *see also* 18 AAC 50.326(b) (adopting by reference the definitions of 40 C.F.R. § 71.2). Because 18 AAC 50.110 is part of Alaska's approved SIP, it constitutes an applicable requirement with respect to which ADEC must assure compliance as a prerequisite to issuance of the Permit.

A. 1-hour NAAQS for SO_2

EPA promulgated initial primary and secondary NAAQS for SO_2 in 1971.[73] On June 3, 2010, the agency issued a new SO_2 standard, recognizing that the prior 24-hour and annual SO_2 standards did not adequately protect the public against adverse respiratory effects associated with short-term (5 minutes to 24 hours) SO_2 exposure. 75 Fed. Reg. 35,520, 35,550 (June 22, 2010). The new 2010 SO_2 NAAQS standard is a 1-hour standard set at 196 micrograms per cubic meter ($\mu g/m^3$) or 75 parts per billion (ppb). 40 C.F.R. § 50.17(a). The standard is met "when the three-year average of the annual (99th percentile) of the daily maximum 1-hour average concentrations is less than or equal to 75 ppb." *Id.* § 50.17(b). Due to both the shorter averaging time and the numerical difference, the new 1-hour SO_2 NAAQS is far more stringent than the prior standard.

Under the CAA, EPA is required to promulgate NAAQS for SO_2 and other pollutants to protect public health and welfare. 42 U.S.C. § 7409. As per section 109 of the Act, the NAAQS are standards requisite to protect the public health, allowing an adequate margin of safety. *Id.* § 7409(b). All NAAQS, including the 1-hour SO_2 NAAQS, are promulgated on the basis of

[72] Revised Response to Comments, Ex. 10 at 19.
[73] EPA, Sulfur Dioxide (SO_2) Primary Standards - Table of Historical SO_2 NAAQS, *available at* www.epa.gov/ttn/naaqs/standards/so2/s_so2_history.html (last visited Dec. 11, 2013). EPA originally set the primary standard for SO_2 at 0.14 parts per million (ppm), 24-hour average, and 0.03 ppm, annual average. *Id.*

years of research and extensive notice and comment. Through this process, EPA established the new 1-hour SO_2 NAAQS because a substantial body of scientific evidence demonstrates both that exposure to SO_2 in even very short time periods—such as five minutes—causes decrements in lung function, aggravation of asthma, and respiratory and cardiovascular morbidity and that the then-existing NAAQS were inadequate to protect public health from such impacts. These findings were thoroughly documented in an Integrated Science Assessment completed as part of the NAAQS evaluation,[74] and in the final NAAQS rule itself. *See* 75 Fed. Reg. at 35,524-29. Based on this strong scientific evidence, EPA has estimated that the 1-hour SO_2 NAAQS will prevent 2,300-5,900 premature deaths and 54,000 asthma exacerbations per year.[75] Put another way, levels of SO_2 air pollution above the standard in the NAAQS are expected to cause thousands of premature deaths and tens of thousands of asthma attacks every year.

Thus, the specific limit established in the 1-hour SO_2 NAAQS of 196 $\mu g/m^3$ is dispositive authority that SO_2 concentrations about that level would be "injurious to human health or welfare" and "would unreasonably interfere with the enjoyment of life or property." For this reason, approval of an emission limit that allows the Plant to cause or contribute to ambient concentrations of SO_2 above 196 $\mu g/m^3$ necessarily would violate 18 AAC 50.110, Alaska's SIP, and Permit Condition 55.

The Permit specifies that the Plant "shall not cause or allow sulfur compound emissions, expressed as SO_2, . . . to exceed 500 ppm averaged over three hours."[76] ADEC estimates that, operating under this emissions limit, the Plant still has the potential to emit 1,991.9 tons of SO_2

[74] EPA, Integrated Science Assessment for Sulfur Oxides—Health Criteria, EPA/600/R-08/047F (2008), attached as Ex. 21 at 5-3—5-4, Tables 5-1 & 5-2.
[75] EPA, *Final Regulatory Impact Analysis (RIA) for the SO2 National Ambient Air Quality Standards (NAAQS)*(2010), attached as Ex. 22 at 5-35, Table 5.14.
[76] Permit, Ex. 1 § 13.3.

annually.[77] Despite such significant emissions, nowhere in the Statement of Basis does ADEC assess whether these emissions will cause or contribute to ambient concentrations of SO_2 above the 1-hour SO_2 NAAQS. In order to avoid this illegal result, the Administrator must object to the Permit and direct ADEC to evaluate whether the SO_2 emissions allowed by the Permit would cause exceedances of the 1-hour SO_2 NAAQS and, if so, to revise the Permit to include an SO_2 limit and companion monitoring provision to prevent such exceedances. Such an evaluation of the potential of the Plant to cause exceedances of the 1-hour SO_2 NAAQS is particularly appropriate in light of the "strong source-oriented nature of SO_2 ambient impacts." 75 Fed. Reg. at 35,370.

To evaluate compliance with the 1-hour SO_2 NAAQS, EPA should instruct ADEC to undertake air quality dispersion modeling. Due to the generally localized impacts of SO_2, EPA historically has considered monitoring alone to be neither an adequate tool nor the most appropriate tool to identify all maximum concentrations of SO_2. *Id*. at 35,551. Instead, the approach called for under the new NAAQS employs modeling as the primary method of determining SO_2 concentrations for large stationary sources. *Id*. at 35,553 ("EPA has determined that it is appropriate and efficient to principally use modeling to assess compliance for medium to larger sources, and to rely more on monitoring for groups of smaller sources and sources not as conducive to modeling."). As EPA has concluded with regard to the short-term 1-hour SO_2 standard, dispersion modeling of stationary sources is especially important and "more technically appropriate, efficient, and effective [than monitoring] because it takes into account fairly infrequent combinations of meteorological and source operating conditions that can contribute to peak ground-level concentrations of SO_2." *Id*. at 35,554.

[77] Statement of Basis, Ex. 4 at 3, Table D.

Additionally, in order for the Permit's SO_2 emissions standard to be stringent enough to avoid exceedances of the 1-hour SO_2 NAAQS, ADEC must reopen the permit and revise the averaging time for the SO_2 emissions limit so that it matches the averaging time upon which NAAQS compliance is measured. In this regard, the Permit's current limit on SO_2 emissions—utilizing a three-hour averaging period—is plainly inadequate.[78] As EPA noted in guidance on how to implement the 1-hour SO_2 NAAQS, compliance with the standard must be demonstrated on the basis of a 1-hour averaging period.[79] Moreover, as previously discussed, it is well documented that the health data relied upon by EPA in promulgating the new 1-hour SO_2 NAAQS overwhelmingly indicated that increased asthma attacks and hospital visits are attributable to short term concentrations of sulfur compound concentrations in the air. 75 Fed. Reg. at 35,550. Due to the extreme effects of even short-term exposure to SO_2 pollution, it is vitally important to require compliance with an SO_2 emissions limit measured on the same 1-hour averaging time as the NAAQS is based.

B. 1-hour NAAQS for NO_2

EPA promulgated initial primary and secondary NAAQS for NO_2 in 1971.[80] On February 9, 2010, EPA announced a new short-term NAAQS for NO_2, "establishing a new 1-hour standard at a level of 100 ppb, based on the 3-year average of the annual 98th percentile of the yearly distribution of 1-hour daily maximum concentrations, to supplement the existing

[78] Permit, Ex. 1 at 11, Condition 13.3.
[79] EPA, *General Guidance for Implementing the 1-Hour SO2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour SO_2 Significant Impact Level* (Aug. 23, 2010), attached as Ex. 23 at 7 ("Because compliance with the new SO_2 NAAQS must be demonstrated on the basis of a 1-hour averaging period, the reviewing authority should ensure that the source's PSD permit defines a maximum allowable hourly emissions limitation for SO_2. . . . Hourly limits are important because they are the foundation of the air quality modeling demonstration relative to the 1-hour SO_2 NAAQS.").
[80] EPA originally set the primary and secondary standards for NO_2 at 0.053 ppm, annual average. 75 Fed. Reg. 6,474, 6,476 (Feb. 9, 2010).

annual standard." 75 Fed. Reg. 6,474, 6,474 (Feb. 9, 2010); 40 C.F.R § 50.11(b). EPA set the level of this standard based upon scientific evidence demonstrating that the previous annual standard for NO_2 was insufficient to protect human health. *See* 75 Fed. Reg. at 6,479-81. Short-term spikes in NO_2 concentrations are associated with a range of negative human health effects, including breathing problems and even death. *Id*. at 6,480-81. The hourly 100 ppb standard, "reflect[ing] the maximum allowable NO_2 concentration anywhere in an area," *id*. at 6,492, is intended to prevent these dangerous health consequences.

Currently, the Permit includes no limits on the Plant's emissions of NO_x, which ADEC estimates may total 793.5 tons annually.[81] Despite such significant NO_x emissions, nowhere in the Statement of Basis or other Permit documents does ADEC assess whether these emissions will cause or contribute to ambient concentrations of NO_2 above the new 1-hour NAAQS.

Like the 1-hour SO_2 NAAQS, the specific limit in the 1-hour NO_2 NAAQS of 100 ppb is dispositive authority that ambient NO_2 concentrations about that level would be "injurious to human health or welfare" and "would unreasonably interfere with the enjoyment of life or property." An emission limit (or lack thereof) in the Permit that allows the Plant to cause or contribute to ambient concentrations of NO_2 above 100 ppb therefore would necessarily violate 18 AAC 50.110, the Alaska SIP, and Permit Condition 55.

Accordingly, for the same reasons discussed above with regard to SO_2, the Administrator must object to the Permit and direct ADEC to assess the potential air quality impacts of the Plant's NO_X emissions and, to the extent the Plant may cause or contribute to an exceedance of the 1-hour NO_2 NAAQS, to establish both a numerical limit and an averaging period for NO_X emissions from the Plant that are appropriately tailored so as to ensure that it will not emit

[81] Statement of Basis, Ex. 4 at 3, Table D.

concentrations of NO_2 which are or may be inimical to human health, in violation of the prohibition in "applicable requirement" 18 AAC 50.110.

VI. CONCLUSION

As set forth above, the Permit fails to meet federal requirements. These deficiencies require that the Administrator object to the Permit pursuant to 40 C.F.R. § 70.8(c)(1). Each of the reasons for objection also constitutes a basis for mandatory reopening and revision of the Permit pursuant to 42 U.S.C. § 7661d(e), 40 C.F.R. §§ 70.7(f), (g), and 40 C.F.R. § 70.8.

Respectfully submitted on behalf of Sierra Club,

/s Colin C. O'Brien
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BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In the matter of:

Aurora Energy, LLC's Chena Power Plant
Permit No. AQ0315TVP03

Issued by the Alaska Department of Environmental Conservation

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PETITION TO OBJECT TO ISSUANCE OF A STATE TITLE V OPERATING PERMIT

Petition No. _____

PROOF OF SERVICE FOR PETITION TO OBJECT

On this day, December 11, 2013, I caused to be served upon the following persons a copy of the above-referenced Petition, along with corresponding exhibits.

To Administrator Gina McCarthy and Regional Administrator Dennis McLerran via electronic mail to mccarthy.gina@epa.gov and mclerran.dennis@epamail.epa.gov, respectively;

And via certified mail, return receipt requested to:

Honorable Gina McCarthy
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Dennis McLerran,
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Fairbanks, AK 99701-4659

/s Colin C. O'Brien
Colin C. O'Brien

Exhibits to Petition to Object to Issuance of a State Title V Operating Permit

Exhibit No.	Description
1	Alaska Department of Environmental Conservation (ADEC), Air Quality Operating Permit No. AQ0315TVP03, Aurora Energy, LLC, Chena Power Plant (May 24, 2013) ("Permit")
2	ADEC Air Permits Program, Statement of Basis of the terms and conditions for Permit No. AQ0315TVP03, Public Comment Draft (Mar. 22, 2013)
3	Sierra Club, Comments on Draft Air Quality Control Operating Permit No. AQ0315TVP03 for Aurora Energy's Chena Power Plant (April 22, 2013)
4	ADEC Air Permits Program, Statement of Basis of the terms and conditions for Permit No. AQ0315TVP03 (May 24, 2013) ("Statement of Basis")
5	ADEC, Air Quality Operating Permit Response to Comments for Permit No. AQ0315TVP03 (undated)
6	Email from Colin O'Brien, Earthjustice, to Jim Plosey, ADEC, re. Comments – Chena Power Plant (June 5, 2013)
7	Letter from Jim Baumgartner, ADEC to A.L. (Buki) Wright, Aurora Energy, LLC (Aurora), re Permit Re-Opening for the Aurora Energy, LLC, Chena Power Plant, Air Quality Control Operating Permit No. AQ0315TVP03, File No. 102.16.012 (June 6, 2013)
8	Letter from Jim Baumgartner, ADEC to Laurie Kral, U.S. EPA Region 10, re Re-Submission of Proposed Renewal Operating Permit No. AQ0315TVP03 for Aurora Energy, LLC, Chena Power Plant, File # 102.16.012 (Aug. 28, 2013)
9	Letter from Jim Baumgartner, ADEC to A.L. (Buki) Wright, Aurora, re Final Air Quality Control Operating Permit No. AQ0315TVP03 for Aurora Energy, LLC, Chena Power Plant, File # 102.16.012; Re-Affirmation of Final Permit after Re-Opening (Oct. 14, 2013)
10	ADEC, Air Quality Operating Permit Revised Response to Comments, Permit No. AQ0315TVP03 (undated) ("Revised Response to Comments")
11	Letter from Tom Chapple, Director, ADEC Director, to Buki Wright, Aurora, re Decision on Informal Review for Operating Permit #AQO315TVP02 (May 12, 2006) ("Director Chapple's 2006 HAP Decision")
12	Letter from Buki Wright, Aurora, to John Kuterbach, ADEC, re Aurora's Hazardous Air Pollutant Status Determination (Dec. 18, 2012)

13 Letter from John Kuterbach, ADEC, to Buki Wright, Aurora, re Aurora's Hazardous Air Pollutant Status Determination (Feb. 25, 2013) ("Kuterbach Letter")

14 *In re Murphy Oil USA, Inc., Meraux Refinery, St. Bernand Parish, La*, Order Granting in Part and Denying in Part Petition for Objection to Permit, Pet. No. VI-2011-02 (EPA Sept. 21, 2011)

15 Memorandum from Terrell E. Hunt, Associate Enforcement Counsel, EPA, re Guidance on Limiting Potential to Emit in New Source Permitting (June 13, 1989)

16 Memorandum from John S. Seitz, Director, Office of Air Quality Planning and Standards, re Options for Limiting the Potential to Emit (PTE) of a Stationary Source Under Section 112 and Title V of the Clean Air Act (Jan. 25, 1995)

17 Environment Maryland Research & Policy Center, Particulate Matter Pollution from Maryland Power Plants (June 2007)

18 Andracsek et al., PM CEMS: The Current Reality of Monitoring Particulate Matter (Nov. 28, 2006)

19 EPA, Office of Air Quality Planning and Standards, *Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring*, EPA-454/R-00-039 (Sept. 2000)

20 EPA Region 10, Alaska SIP – Federally Approved Rules (Dec. 10, 2013)

21 EPA, Integrated Science Assessment for Sulfur Oxides—Health Criteria, EPA/600/R-08/047F (2008)

22 EPA, *Final Regulatory Impact Analysis (RIA) for the SO2 National Ambient Air Quality Standards* (NAAQS) (2010)

23 EPA, *General Guidance for Implementing the 1-Hour SO2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour SO2 Significant Impact Level* (Aug. 23, 2010)