

BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF)	
)	
DUKE ENERGY, LLC)	PETITION NUMBER
ROXBORO STEAM ELECTRIC PLANT)	IV-2016-07
SEMORA, NORTH CAROLINA)	
PERMIT No. 01001T49)	
)	ORDER RESPONDING TO THE
)	PETITIONER’S REQUEST THAT THE
ISSUED BY THE NORTH CAROLINA)	ADMINISTRATOR OBJECT TO THE
DEPARTMENT OF ENVIRONMENTAL)	ISSUANCE OF A STATE OPERATING
QUALITY)	PERMIT
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ORDER GRANTING PETITION FOR OBJECTION TO PERMIT

I. INTRODUCTION

The U.S. Environmental Protection Agency (the EPA) received a petition (the Petition) from Sierra Club (the Petitioner), pursuant to section 505(b)(2) of the Clean Air Act (CAA or Act), 42 U.S.C. § 7661d(b)(2). The Petition, dated June 23, 2016, requests that the EPA object to the proposed operating permit no. 01001T49 (the Proposed Permit) issued by the North Carolina Department of Environmental Quality (the NCDEQ), for the Duke Energy, LLC Roxboro Steam Electric Plant in Semora, North Carolina. The operating permit was proposed pursuant to title V of the CAA, CAA §§ 501–507, 42 U.S.C. §§ 7661–7661f, N.C. Gen. Stat. § 143-215.112, and 15A N.C.A.C. 2Q.0500–0528. *See also* 40 C.F.R. part 70 (title V implementing regulations). On June 20, 2016, the NCDEQ issued the final title V renewal permit (Final Permit) for the facility. This type of operating permit is also referred to as a title V permit or part 70 permit.

Based on a review of the Petition and other relevant materials, including the Proposed and Final Permits, the permit record, and relevant statutory and regulatory authorities, and as explained further below, the EPA grants the Petition requesting that the EPA object to the Proposed Permit.

II. STATUTORY AND REGULATORY FRAMEWORK

A. Title V Permits

Section 502(d)(1) of the CAA, 42 U.S.C. § 7661a(d)(1), requires each state to develop and submit to the EPA an operating permit program to meet the requirements of title V of the CAA and the EPA’s implementing regulations at 40 C.F.R. part 70. The North Carolina Department of Environment and Natural Resources (now the NCDEQ) submitted a title V program governing the issuance of operating permits on November 12, 1993. The EPA granted interim approval in

1995 and full approval of the NCDEQ's title V operating permit program in 2001. 60 Fed. Reg. 57357 (November 15, 1995); 66 Fed. Reg. 45941 (August 31, 2001). This program, which became effective on October 1, 2001, is codified in 15A N.C.A.C. 2Q.0500.

All major stationary sources of air pollution and certain other sources are required to apply for title V operating permits that include emission limitations and other conditions as necessary to assure compliance with applicable requirements of the CAA, including the requirements of the applicable implementation plan. CAA §§ 502(a), 504(a), 42 U.S.C. §§ 7661a(a), 7661c(a). The title V operating permit program generally does not impose new substantive air quality control requirements, but does require permits to contain adequate monitoring, recordkeeping, reporting and other requirements to assure sources' compliance with applicable requirements. 57 Fed. Reg. 32250, 32251 (July 21, 1992); *see* CAA § 504(c), 42 U.S.C. § 7661c(c). One purpose of the title V program is to "enable the source, States, the EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements." *Id.* Thus, the title V operating permit program is a vehicle for ensuring that air quality control requirements are appropriately applied to facility emission units and for assuring compliance with such requirements.

B. Review of Issues in a Petition

State and local permitting authorities issue title V permits pursuant to their EPA-approved title V programs. Under CAA § 505(a), 42 U.S.C. § 7661d(a), and the relevant implementing regulations found at 40 C.F.R. § 70.8(a), states are required to submit each proposed title V operating permit to the EPA for review. Upon receipt of a proposed permit, the EPA has 45 days to object to final issuance of the proposed permit if the EPA determines that the proposed permit is not in compliance with applicable requirements under the Act. CAA § 505(b)(1), 42 U.S.C. § 7661d(b)(1); *see also* 40 C.F.R. § 70.8(c). If the EPA does not object to a permit on its own initiative, any person may petition the Administrator, within 60 days of the expiration of the EPA's 45-day review period, to object to the permit. CAA § 505(b)(2), 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

The petition shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided by the permitting agency (unless the petitioner demonstrates in the petition to the Administrator that it was impracticable to raise such objections within such period or unless the grounds for such objection arose after such period). CAA § 505(b)(2), 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d)). In response to such a petition, the Act requires the Administrator to issue an objection if a petitioner demonstrates that a permit is not in compliance with the requirements of the Act. CAA § 505(b)(2), 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(c)(1).¹ Under section 505(b)(2) of the Act, the burden is on the petitioner to make the required demonstration to the EPA.²

¹ *See also New York Public Interest Research Group, Inc. v. Whitman*, 321 F.3d 316, 333 n.11 (2d Cir. 2003) (*NYPIRG*).

² *WildEarth Guardians v. EPA*, 728 F.3d 1075, 1081–82 (10th Cir. 2013); *MacClarence v. EPA*, 596 F.3d 1123, 1130–33 (9th Cir. 2010); *Sierra Club v. EPA*, 557 F.3d 401, 405–07 (6th Cir. 2009); *Sierra Club v. Johnson*, 541 F.3d 1257, 1266–67 (11th Cir. 2008); *Citizens Against Ruining the Environment v. EPA*, 535 F.3d 670, 677–78 (7th Cir. 2008); *c.f. NYPIRG*, 321 F.3d at 333 n.11.

The petitioner's demonstration burden is a critical component of CAA § 505(b)(2). As courts have recognized, CAA § 505(b)(2) contains both a "discretionary component," to determine whether a petition demonstrates to the Administrator that a permit is not in compliance with the requirements of the Act, and a nondiscretionary duty to object where such a demonstration is made. *Sierra Club v. Johnson*, 541 F.3d at 1265–66 (“[I]t is undeniable [that CAA § 505(b)(2)] also contains a discretionary component: it requires the Administrator to make a judgment of whether a petition demonstrates a permit does not comply with clean air requirements.”); *NYPIRG*, 321 F.3d at 333. Courts have also made clear that the Administrator is only obligated to grant a petition to object under CAA § 505(b)(2) if the Administrator determines that the petitioner has demonstrated that the permit is not in compliance with requirements of the Act. *Citizens Against Ruining the Environment*, 535 F.3d at 677 (stating that § 505(b)(2) “clearly obligates the Administrator to (1) determine whether the petition demonstrates noncompliance and (2) object *if* such a demonstration is made” (emphasis added)).³ When courts have reviewed the EPA's interpretation of the ambiguous term “demonstrates” and its determination as to whether the demonstration has been made, they have applied a deferential standard of review. *See, e.g., MacClarence*, 596 F.3d at 1130–31.⁴ Certain aspects of the petitioner's demonstration burden are discussed below; however, a more detailed discussion can be found in *In the Matter of Consolidated Environmental Management, Inc., Nucor Steel Louisiana*, Order on Petition Nos. VI-2011-06 and VI-2012-07 at 4–7 (June 19, 2013) (*Nucor II Order*).

The EPA has looked at a number of criteria in determining whether a petitioner has demonstrated noncompliance with the Act. *See generally Nucor II Order* at 7. For example, one such criterion is whether the petitioner has addressed the state or local permitting authority's decision and reasoning. The EPA expects the petitioner to address the permitting authority's final decision, and the permitting authority's final reasoning (including the state's response to comments), where these documents were available during the timeframe for filing the petition. *See MacClarence*, 596 F.3d at 1132–33.⁵ Another factor the EPA has examined is whether a petitioner has provided the relevant analyses and citations to support its claims. If a petitioner does not, the EPA is left to work out the basis for petitioner's objection, contrary to Congress's express allocation of the burden of demonstration to the petitioner in CAA § 505(b)(2). *See MacClarence*, 596 F.3d at 1131 (“[T]he Administrator's requirement that [a title V petitioner] support his allegations with legal reasoning, evidence, and references is reasonable and persuasive.”).⁶ Relatedly, the EPA has pointed out in numerous orders that, in particular cases,

³ *See also Sierra Club v. Johnson*, 541 F.3d at 1265 (“Congress's use of the word ‘shall’ . . . plainly mandates an objection *whenever* a petitioner demonstrates noncompliance.” (emphasis added)).

⁴ *See also Sierra Club v. Johnson*, 541 F.3d at 1265–66; *Citizens Against Ruining the Environment*, 535 F.3d at 678.

⁵ *See also, e.g., In the Matter of Noranda Alumina, LLC*, Order on Petition No. VI-2011-04 at 20–21 (December 14, 2012) (denying a title V petition issue where petitioners did not respond to the state's explanation in response to comments or explain why the state erred or the permit was deficient); *In the Matter of Kentucky Syngas, LLC*, Order on Petition No. IV-2010-9 at 41 (June 22, 2012) (denying a title V petition issue where petitioners did not acknowledge or reply to the state's response to comments or provide a particularized rationale for why the state erred or the permit was deficient); *In the Matter of Georgia Power Company*, Order on Petitions, at 9–13 (January 8, 2007) (*Georgia Power Plants Order*) (denying a title V petition issue where petitioners did not address a potential defense that the state had pointed out in the response to comments).

⁶ *See also in the Matter of Murphy Oil USA, Inc.*, Order on Petition No. VI-2011-02 at 12 (September 21, 2011) (denying a title V petition claim where petitioners did not cite any specific applicable requirement that lacked

general assertions or allegations did not meet the demonstration standard. *See, e.g., In the Matter of Luminant Generation Co., Sandow 5 Generating Plant*, Order on Petition Number VI-2011-05 at 9 (January 15, 2013).⁷ Also, if a petitioner did not address a key element of a particular issue, the petition should be denied. *See, e.g., In the Matter of Georgia Pacific Consumer Products, LP Plant*, Order on Petition No. V-2011-1 at 6–7, 10–11, 13–14 (July 23, 2012).⁸

The information that the EPA considers in making a determination whether to grant or deny a petition submitted under 40 C.F.R. § 70.8(d) on a proposed permit generally includes, but is not limited to, the administrative record for the proposed permit and the petition, including attachments to the petition. The administrative record for a particular proposed permit includes the draft and proposed permits; any permit applications that relate to the draft or proposed permits; the statement of basis for the draft and proposed permits; the permitting authority’s written responses to comments, including responses to all significant comments raised during the public participation process on the draft permit; relevant supporting materials made available to the public according to 40 C.F.R. § 70.7(h)(2); and all other materials available to the permitting authority that are relevant to the permitting decision and that the permitting authority made available to the public according to § 70.7(h)(2). If a final permit and a statement of basis for the final permit are available during the agency’s review of a petition on a proposed permit, those documents may also be considered as part of making a determination whether to grant or deny the petition.

If the EPA grants an objection in response to a title V petition, a permitting authority may address the EPA’s objection by, among other things, providing the EPA with a revised permit. *See, e.g., 40 C.F.R. § 70.7(g)(4)*. However, as explained in the *Nucor II Order*, a new proposed permit in response to an objection will not always need to include new permit terms and conditions. For example, when the EPA has issued a title V objection on the ground that the permit record does not adequately support the permitting decision, it may be acceptable for the permitting authority to respond only by providing additional rationale to support its permitting decision. *Id.* at 14 n.10. In any case, whether the permitting authority submits revised permit terms, a revised permit record, or other revisions to the permit, the permitting authority’s response is generally treated as a new proposed permit for purposes of CAA § 505(b) and 40 C.F.R. § 70.8(c) and (d). *See Nucor II Order* at 14. As such, it would be subject to the EPA’s opportunity to conduct a 45-day review per CAA § 505(b)(1) and 40 C.F.R. § 70.8(c), and an opportunity to petition under CAA § 505(b)(2) and 40 C.F.R. § 70.8(d) if the EPA does not object. The EPA has explained that treating a state’s response to an EPA objection as triggering a new EPA review period and a new petition opportunity is consistent with the statutory and regulatory process for addressing objections by the EPA. *Nucor II Order* at 14–15. The EPA’s view that the state’s response to an EPA objection is generally treated as a new proposed permit

required monitoring); *In the Matter of Portland Generating Station*, Order on Petition, at 7 (June 20, 2007) (*Portland Generating Station Order*).

⁷ *See also Portland Generating Station Order* at 7 (“[C]onclusory statements alone are insufficient to establish the applicability of [an applicable requirement].”); *In the Matter of BP Exploration (Alaska) Inc., Gathering Center #1*, Order on Petition Number VII-2004-02 at 8 (April 20, 2007); *Georgia Power Plants Order* at 9–13; *In the Matter of Chevron Products Co., Richmond, Calif. Facility*, Order on Petition No. IX-2004–10 at 12, 24 (March 15, 2005).

⁸ *See also In the Matter of Public Service Company of Colorado, dba Xcel Energy, Pawnee Station*, Order on Petition No. VIII-2010-XX at 7–10 (June 30, 2011); *Portland Generating Station Order* at 5–6; *Georgia Power Plants Order* at 10.

does not alter the procedures for the permitting authority to make the changes to the permit terms or condition or permit record that are intended to resolve the EPA's objection, however. When the permitting authority modifies a permit in order to resolve an EPA objection, it must go through the appropriate procedures for that modification. For example, when the permitting authority's response to an objection is a change to the permit terms or conditions or a revision to the permit record, the permitting authority should determine whether its response is a minor modification or a significant modification to the title V permit, as described in 40 C.F.R. § 70.7(e)(2) and (4) or the corresponding regulations in the state's EPA-approved title V program. If the permitting authority determines that the modification is a significant modification, then the permitting authority must provide for notice and opportunity for public comment for the significant modification consistent with 40 C.F.R. § 70.7(h) or the state's corresponding regulations.

When a permitting authority responds to an EPA objection, it may choose to do so by modifying the permit terms or conditions or the permit record with respect to the specific deficiencies that the EPA identified; permitting authorities need not address elements of the permit terms or conditions or the permit record that are unrelated to the EPA's objection. As described in various title V petition orders, the scope of the EPA's review (and accordingly, the appropriate scope of a petition) on such a response would be limited to the specific permit terms or conditions or elements of the permit record modified in that permit action. *See In The Matter of Hu Honua Bioenergy, LLC*, Order on Petition No. VI-2014-10, at 38–40 (September 14, 2016); *In the Matter of WPSC, Weston*, Order on Petition No. V-2006-4 at 5–6, 10 (December 19, 2007).

C. 2010 1-Hour Sulfur Dioxide (SO₂) National Ambient Air Quality Standard (NAAQS) Implementation

National 2010 1-Hour SO₂ NAAQS Implementation

The Administrator signed a final rule under CAA § 109 revising the primary SO₂ NAAQS on June 2, 2010 (2010 1-hour SO₂ NAAQS). The rule was published in the *Federal Register* on June 22, 2010, 75 Fed. Reg. 35520, and became effective on August 23, 2010. Based on the Administrator's review of the air quality criteria for oxides of sulfur and the primary NAAQS for oxides of sulfur as measured by SO₂, the EPA revised the primary SO₂ NAAQS to provide requisite protection of public health with an adequate margin of safety. Specifically, the EPA established a new 1-hour SO₂ standard at a level of 75 parts per billion (ppb), which is met at an ambient air quality monitoring site when the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations is less than or equal to 75 ppb, as determined in accordance with Appendix T of 40 C.F.R. part 50. 40 C.F.R. § 50.17(a)–(b). The EPA also established provisions to revoke both the existing 24-hour and annual primary SO₂ standards following designation of areas under the 1-hour NAAQS, subject to certain conditions. 40 C.F.R. § 50.4(e). The 2010 1-hour SO₂ NAAQS was challenged by certain industry and state litigants, and these challenges were fully rejected by the court. *National Environmental Development Association's Clean Air Project v. EPA*, 686 F.3d 803 (D.C. Cir. 2012).

After the EPA promulgates a new or revised NAAQS, the EPA is required to designate all areas of the country as either “nonattainment,” “attainment,” or “unclassifiable,” for that NAAQS

pursuant to section 107(d)(1) of the CAA. Section 107(d)(1)(A)(i) of the CAA defines a nonattainment area as “any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.” If an area meets either prong of this definition, then the EPA is obligated to designate the area as “nonattainment.” Section 107(d)(1)(A)(ii) defines an attainment area as any area other than a nonattainment area that meets the NAAQS, and section 107(d)(1)(A)(iii) defines an unclassifiable area as any area that cannot be classified on the basis of available information as meeting or not meeting the NAAQS.

After the EPA promulgates or revises a NAAQS, states are directed by CAA § 110(a)(1) to submit to the EPA, no later than 3 years after promulgation of the NAAQS, plans that implement, maintain and enforce the NAAQS. These state implementation plans (SIPs) are required for all states, regardless of whether the EPA has formally designated areas within the state, and are commonly called “infrastructure SIPs” since they reflect the basic elements, specified in CAA § 110(a)(2), that all SIPs must contain. These elements include, among others, enforceable emissions limitations, monitoring and modeling provisions, enforcement and new source review programs, provisions to prohibit interstate pollution causing NAAQS violations in downwind states, adequate governmental capacity and authority, and provisions to address imminent and substantial endangerment.

In addition, for any areas designated nonattainment, the CAA directs states to develop and submit to the EPA within 18 months of such designation SIPs that meet the requirements of sections 172(c) and 191–192 of the CAA and provide for attainment of the NAAQS as expeditiously as practicable, but not later than 5 years from the effective date of the nonattainment designation. These SIPs must provide for implementation of all reasonably available control measures, including emissions reductions from existing sources in the area as may be obtained through the adoption of reasonably available control technology, and they must require reasonable further progress towards attainment. Moreover, the SIPs for nonattainment areas must include a comprehensive, accurate, and current inventory of actual emissions from all sources in the nonattainment area, along with a permit program for new and modified major sources that requires emissions offsets. The SIP must include enforceable emissions limitations and other control measures as necessary and appropriate to provide for attainment, as well as contingency measures that will take effect without further action by the state in the event the area fails to attain on time.

The EPA published the first round of SO₂ designations for the 2010 1-hour SO₂ NAAQS for 29 areas on August 5, 2013. 78 Fed. Reg. 47191. Industry challenges to the first round of designations were rejected by the court in *Treasure State Resource Industry Association v. USEPA*, 805 F.3d 300 (D.C. Cir. 2015). The EPA issued a second round of SO₂ designation for 65 areas on July 12, 2016, 81 Fed. Reg. 45039, and December 13, 2016, 81 Fed. Reg. 89870, and the EPA intends to issue up to two more rounds of designations to address all remaining areas pursuant to a schedule contained in an order entered by the U.S. District Court for the Northern District of California on March 2, 2015. *See Sierra Club and NRDC v. McCarthy*, No. 3:13-cv-3953-SI (N.D. Cal.) (March 2, 2015). The court order requires the EPA to designate by December 31, 2017, remaining undesignated areas in which, by January 1, 2017, states have not installed and begun operating a new SO₂ monitoring network meeting the EPA specifications

referenced in the EPA’s SO₂ Data Requirements Rule (DRR), 80 Fed. Reg. 51052 (codified at 40 C.F.R. part 51, subpart BB), and requires the EPA to designate all remaining undesignated areas by December 31, 2020.

The DRR requires states to characterize SO₂ air quality for DRR listed source areas through either modeling or monitoring, or, in lieu of modeling or monitoring, the state can meet the requirement by adopting and making effective by January 13, 2017, federally enforceable emissions limits that ensure the source’s emissions are below 2,000 tons per year. The state could also alternatively provide documentation that the listed source was permanently shut down by January 13, 2017. After states meet their initial obligations under the DRR, in some cases they will have continuing responsibilities to evaluate the impacts of SO₂ emissions from sources in areas subject to the rule. Following the EPA’s receipt of data and information from states implementing the DRR, it may use that information to inform future determinations regarding states’ SO₂ air quality status, including, but not limited to, the remaining rounds of area designations under CAA § 107.

2010 1-hour SO₂ NAAQS Implementation in North Carolina

The area in North Carolina containing the Roxboro Plant has not yet been designated under CAA § 107 for the 2010 1-hour SO₂ NAAQS. Consequently, all three of the primary SO₂ NAAQS at 40 C.F.R. 50.4 and 50.17 apply in the area, and the state is currently not subject to the CAA §§ 172 and 191–192 requirements to develop a SIP applicable to that area to bring any nonattainment area into attainment of the 1-hour NAAQS in this area. However, North Carolina’s infrastructure SIP under CAA § 110(a) is applicable statewide to the extent approved by the EPA, including in the area containing the Roxboro Plant.⁹ Moreover, since this area is not designated nonattainment under the 2010 1-hour SO₂ NAAQS and contains a source that exceeds the DRR’s applicability threshold, the area is subject to the DRR. On January 15, 2016, North Carolina listed the Roxboro Plant as needing to be characterized under the DRR, and the EPA concurred. North Carolina notified the EPA via letter, dated June 30, 2016, that the state would meet the DRR characterization requirement through monitoring for the Roxboro Plant.

III. BACKGROUND

A. The Roxboro Steam Electric Plant and Permitting History

Located in Semora, Person County, North Carolina, the Roxboro Steam Electric Plant (Roxboro) is a fossil fuel-fired steam electric generating utility plant, with coal as the primary fuel. The facility consists of four coal-fired boiler units. The boiler units have a combined total generating capacity of 2,558 megawatt (MW) (411MW, 657 MW, 745 MW, and 745 MW). Each unit

⁹ Various portions of North Carolina’s infrastructure SIP for the 2010 1-hour SO₂ NAAQS were approved in multiple *Federal Register* notices. See 80 Fed. Reg. 67645 (November 3, 2015) for approval of Section 110(a)(2)(E)(ii); 81 Fed. Reg. 24496 (April 26, 2016) for approval of Sections 110(a)(2)(A), (B), (C) for enforcement and minor source program elements, (D)(ii) for interstate and international pollution abatement, (E)(i) and (iii), (F), (G), (H), (J) for consultation and public notification, (K), (L), and (M); 81 Fed. Reg. 35634 (June 3, 2016) for Section 110(a)(2)(D)(i)(II) for “Prong 4”; and 81 Fed. Reg. 63107 (September 14, 2016) for approval, in part, of Section 110(a)(2)(C) for PSD, D(i)(II) for “Prong 3”, and (J) for PSD. The EPA has not acted on those portions of the infrastructure SIP submission concerning Section 110(a)(2)(D)(i)(I) regarding “Prongs 1 and 2.”

utilizes a flue gas desulfurization system, selective catalytic reduction system, electrostatic precipitator, and a wet scrubber for emission controls. The facility also includes a limestone handling system, emergency generator, emergency fire pump engine, various storage tanks, and coal ash storage.

The facility is a major stationary source subject to the requirements of title V of the Act (42 U.S.C. §§ 7602 and 7661) and the EPA-approved title V program for the NCDEQ.

On June 26, 2014, and June 26, 2015, Duke Energy submitted a permit renewal application and modification to the NCDEQ. The NCDEQ issued and published notice of the draft renewal permit (Draft Permit) on April 1, 2016. On May 4, 2016, the Sierra Club submitted public comments on the Draft Permit. On May 5, 2016, the NCDEQ submitted the Proposed Permit and Response to Comments (RTC) to the EPA for its 45-day review period. The EPA's 45-day review period on the Proposed Permit ended on June 19, 2016. The EPA did not object to the Proposed Permit. On June 20, 2016, the NCDEQ issued the Final Permit for the facility.

B. Timeliness of Petition

Pursuant to the CAA, if the EPA does not object during its 45-day review period, any person may petition the Administrator within 60 days after the expiration of the 45-day review period to object. CAA § 505(b)(2); 42 U.S.C. § 7661d(b)(2). Thus, any petition seeking the EPA's objection to the Roxboro permit was due on or before August 18, 2016. The Roxboro Petition was dated June 23, 2016. The EPA finds that the Petition was timely filed.

IV. EPA DETERMINATIONS ON THE ISSUES RAISED BY THE PETITIONER

Claim 1. The Proposed Permit Lacks the Permit Conditions Necessary to Monitor and Enforce Compliance with All Applicable Requirements and a Compliance Schedule for Current Violations of Applicable Requirements

Claim 1, as identified in this Order, is found on pages 10-18 (Section III) of the Duke Energy Roxboro Petition and includes two sub-claims. Sub-claim A is found on pages 10–17 and is titled, “The Proposed Permit Lacks the Permit Conditions Necessary to Monitor and Enforce Compliance with All Applicable Requirements.” Sub-claim B is found on pages 17–18 and is titled, “The Proposed Permit Lacks a Schedule for Compliance with Current Violations of Applicable Requirements and the Plant's Existing Permit.” Because these claims include substantially overlapping issues, the summary of the Petitioner's Claim 1 and the EPA's response address all the Claim 1 issues together.

Petitioner's Claim. The Petitioner generally claims that the SO₂ emission limit in the Roxboro Proposed Permit is insufficient to prevent an exceedance of or contribution to the violation of the 2010 1-hour SO₂ NAAQS in North Carolina as required by the North Carolina SIP. Petition at 10. As a result, the Petitioner claims that the permit must contain stricter, modeling-based numerical emission limits for SO₂. *Id.* at 12. The Petitioner claims that North Carolina regulations 15A N.C.A.C. 2D.0401(c) (NC 0401) and 15A N.C.A.C. 2D.0501(c) (NC 0501) impose “upon [the NCDEQ] a duty to adopt the specific permit conditions necessary to prevent

violation of ambient air quality standards.”¹⁰ *Id.* at 4. The Petitioner asserts that the NCDEQ “has not offered—and, indeed, cannot offer—any reasonable justification for its failure to impose more stringent limits on SO₂ emissions.” *Id.* at 1.

The Petitioner explains that NC 0401 states:

No facility or source of air pollution shall cause any ambient air quality standard in this Section to be exceeded or contribute to a violation of any ambient air quality standard in this Section.

Id. In addition, the Petitioner explains that NC 0501 states:

In addition to any control or manner of operation necessary to meet emission standards in this Section, any source of air pollution shall be operated with such control or in such manner that the source shall not cause the ambient air quality standards of Section .0400 of this Subchapter to be exceeded at any point beyond the premises on which the source is located. When controls more stringent than named in the applicable emission standards in this Section are required to prevent violation of the ambient air quality standards or are required to create an offset, the permit shall contain a condition requiring these controls.

Id.

In support of its general claim, the Petitioner asserts that NC 0401 and NC 0501 are applicable requirements as defined in 40 C.F.R. § 70.2 and as such must be included in the title V permit as required by 40 C.F.R. § 70.6(a)(1) and 15A N.C.A.C. 2Q.0508(b). *Id.* at 11. The Petitioner contends that the title V permits must reflect these applicable requirements by including “specific conditions necessary to prevent violation of ambient air quality standards.” *Id.* at 14. Specifically, the Petitioner asserts that the NCDEQ must include a modeling-based numerical emission limit for SO₂ in the Roxboro permit that is stringent enough to ensure that the facility will not cause “downwind exceedances” of the 2010 1-hour SO₂ NAAQS. *Id.* at 12.¹¹

The Petitioner contends that the NCDEQ previously established SO₂ emission limits for the Roxboro facility under NC 0501 to prevent a violation of the 1971 SO₂ NAAQS. *Id.* at 9, 11. The Petitioner claims that the Roxboro Draft Permit included a 0.547 pounds per million British thermal unit (lb/MMBtu) SO₂ emission limit under NC 0501 that was “based on a modeling analysis received on May 16, 2007.” *Id.* (citing Roxboro Draft Permit at 8, 19). Further, the Petitioner asserts that in “2007, the ambient air quality standards in effect in North Carolina were

¹⁰ 15A N.C.A.C. 2D.0401(c) is part of North Carolina’s SIP. *See* 59 Fed. Reg. 41708 (August 15, 1994). The text of 15A N.C.A.C. 2D.0501(c), with the exception of the phrase “or are required to create an offset,” is incorporated into North Carolina’s SIP as 15A N.C.A.C. 2D.0501(e) and was originally incorporated into the SIP as 15A N.C.A.C. 2D.0501(f). *See* 46 Fed. Reg. 21599 (April 13, 1981).

¹¹ The Petitioner explains that it retained an independent, third-party air dispersion-modeling consultant, Air Resource Specialists (ARS), to evaluate whether the facility was violating the 75-ppb standard for SO₂. Petition at 7. The Petitioner contends that Roxboro is “regularly and repeatedly causing SO₂ levels far in excess of the ambient air quality standard included” in the NCDEQ’s regulations. *Id.* at 7–9 (citing to Sierra Club Public Comments on Roxboro, Exhibit A, *ARS Modeling Report*).

the 24-hour/140-ppb and annual/30-ppb standards that had been adopted by [the] EPA in 1971.” *Id.* at 9.

In additional support for its claim, the Petitioner asserts that prior EPA decisions require the Administrator to object to Roxboro’s title V permit because it lacks an emission limit to ensure the 1-hour SO₂ NAAQS is not violated. *Id.* at 12–14. Specifically, the Petitioner contends that the NCDEQ’s regulations more closely resemble the New Hampshire SIP provision that was the subject of the EPA’s grant in *In the Matter of Public Service of New Hampshire, Schiller*, Order on Petition No. VI-2014-04 (July 28, 2015) (*2015 Schiller Order*) rather than the general Pennsylvania SIP provisions that were the subject of the EPA’s denial in *In the Matter of EME Homer City Generation LP, et al.*, Order on Petition No. III-2012-06, III-2012-07, and III-2013-02 (July 30, 2014) (*2014 Homer City Order*). *Id.* (citing *2014 Homer City Order* at 19; *2015 Schiller Order* at 8). The Petitioner claims that the NCDEQ’s regulations differ from the general Pennsylvania provisions because “they expressly prohibit behavior that will lead to pollution at concentrations above governing air quality standards, and (2) they expressly require that, when issuing a permit, the NCDEQ set specific conditions necessary to prevent exceedances of such standards.” *Id.* at 14 (citing *2014 Homer City Order*). Further, the Petitioner asserts that the NCDEQ’s regulations “closely resemble” the New Hampshire SIP interstate transport provision at issue in the *2015 Schiller Order*. *Id.* at 13. The Petitioner claims that, in the *2015 Schiller Order*, the EPA “flatly rejected” New Hampshire’s argument that they would “wait for the full NAAQS designation and SIP process to play out before [New Hampshire] would act to include emissions limits effecting the applicable requirement not to violate the NAAQS in the Title V permit.” *Id.* (citing *2015 Schiller Order* at 8). Moreover, the Petitioner contends that the “EPA specifically rejected New Hampshire’s argument that, because there is a separate, parallel area designation process, New Hampshire did not need to translate an applicable requirement prohibiting NAAQS violations into numerical emission limits in a Title V permit renewal context.” *Id.* The Petitioner claims that although the “EPA’s analysis occurred in the context of interstate transport (because transport was the focus of the applicable requirement at issue), [the] EPA’s reasoning in objecting to the Schiller permit bears directly on [the] EPA’s review of the Roxboro Permit.” *Id.*

Finally, the Petitioner claims that the Proposed Permit must have a compliance schedule in accordance with 40 C.F.R. § 70.5 (c)(3) and (c)(8) because the facility has violated its current permit by causing a violation of the 2010 1-hour SO₂ NAAQS in violation of NC 0501, which is listed as an applicable requirement in the Proposed Permit. *Id.* at 17–18.

EPA’s Response. For the following reasons, the EPA grants the Petitioner’s request for an objection on this claim.

As relevant background for the EPA’s analysis, the Relevant Legal Background, the NCDEQ’s Response and the Overview of Permit Terms are described below.

Relevant Legal Background

As recognized by the Petitioner, and as the EPA has previously explained, promulgation of a NAAQS does not, in and of itself, result in an applicable requirement in the form of an emission

limit for title V sources. *In the Matter of Marcal Paper Mills, Inc.*, Order on Petition No. II-2006-001 at 13 (November 30, 2006) (*2006 Marcal Paper Mills Order*); *see also 2015 Schiller Order* at 6; *2014 Homer City Order* at 11. Rather, the measures contained in each state’s EPA-approved SIP to achieve the NAAQS are applicable requirements. *See* 40 C.F.R. § 70.2. The CAA provides that the EPA sets the NAAQS, but the states then determine how best to attain and maintain the NAAQS within their boundaries. A NAAQS by itself does not impose any obligations on sources. “A source is not obligated to reduce emissions as a result of the [NAAQS] until the state identifies a specific emission reduction measure needed for attainment (and applicable to the source), and that measure is incorporated into a SIP approved by [the] EPA.” Decision on Reconsideration of Petition to Object to Title V Permit for Reliant Portland Generating Station, Upper Mount Bethel Township, Northampton County, PA, 73 Fed. Reg. 64615 (October 30, 2008); *see also 2006 Marcal Paper Mills*, at 13; *In the Matter of East Kentucky Power Cooperative Inc., William C. Dale Power Station*, Order on Permit No. V-08-009 at 5 (December 14, 2009); *Cate v. Transcontinental Gas Pipe Line Corp.*, 904 F. Supp. 526, 530 (W.D. Va. 1995) (“It is well-established that the NAAQS are not an ‘emission standard or limitation’ as defined by the Act.”). Thus, promulgation of the 2010 1-hour SO₂ NAAQS did not, in and of itself, mandate the emission limits to avoid a violation of the 2010 1-hour SO₂ NAAQS.

In some prior orders identified in the Petition, the EPA has explained that states have discretion to interpret a “broad, sweeping **state-derived** general SIP provision [to] not mandate. . . SO₂ emission limits” to protect the 2010 1-hour SO₂ NAAQS. *2014 Homer City Order* at 15–16 (emphasis added); *see also In the Matter of TransAlta Centralia Generation, LLC*, Order on Permit No. SW98-8-R3 at 7 (April 28, 2011) (*2011 TransAlta Order*) (“[T]he SIP applicable requirement at issue in [the petition] is not derived from any federal requirement...”); *In the Matter of Hercules, Inc.*, Order on Petition IV-2003-1 at 8 (November 10, 2004) (*2008 Hercules Order*) (noting that the Georgia rule at issue in the petition was “a state rule that is not derived from any federal requirement”). Further, the EPA has explained that states can incorporate these broad, sweeping state-derived provisions into title V permits without specific emission limits and standards. *2014 Homer City Order* at 15–16; *see also 2011 TransAlta Order* at 7; *2008 Hercules Order* at 8.

The NCDEQ’s Response

In response to public comments filed by the Petitioner on the Roxboro Draft Permit, the NCDEQ stated:

[The NCDEQ] is aware of the 1-hour ambient SO₂ standard, [Sierra Club’s] modeling effort, and [the NCDEQ’s] requirements under the Data Requirements Rule. In response to the previously mentioned submitted modeling and according to the procedures in the Data Requirements Rule, [the NCDEQ] has established and begun operating a local SO₂ monitor.

RTC at 1.

Overview of Permit Terms

The Final Permit relies on NC 0501 as the authority for the 0.547 lb/MMBtu SO₂ emission limit for Units 1, 2, 3, and 4 at the Roxboro. Final Permit at 11, permit condition 2.1(A)(2)(b).

EPA's Analysis

For the reasons explained below, the EPA finds that the Petitioner has demonstrated that the title V permit and permit record are unclear regarding when and how NC 0401 and NC 0501 would require an emission limit in Roxboro's title V permit to ensure that the 2010 1-hour SO₂ NAAQS is not violated. In particular, for the reasons stated below, the RTC is insufficient to explain whether NC 0401 and NC 0501 require a more stringent SO₂ emission limit in Roxboro's title V permit.

As stated above, the promulgation of the 2010 1-hour SO₂ NAAQS did not, in and of itself, mandate the emission limits to avoid a violation of the 2010 1-hour SO₂ NAAQS. The Petitioner does not claim that the promulgation of the 2010 1-hour SO₂ NAAQS itself requires additional emission limits; rather, the Petitioner relies on NC 0401 and NC 0501 to support its claim that the Roxboro permit must contain emission limits to ensure the 2010 1-hour SO₂ NAAQS is not violated.

As the Petitioner has correctly asserted, NC 0401 and NC 0501 are not broad, sweeping, **state-derived** general prohibitions on air pollution like those addressed in the EPA's *2014 Homer City Order*. See *2014 Homer City Order* at 15–16; see also *2011 TransAlta Order* at 7; *2008 Hercules Order* at 8. In this case, NC 0401 and NC 0501 are not state-derived regulations because both NC 0401 and NC 0501 concern an underlying federal CAA requirement, to prevent violations of the NAAQS.¹² Further, NC 0501 specifically requires permits to contain a condition requiring controls more stringent than those in the applicable emission standards when required to protect a NAAQS. In addition, NC 0401 and NC 0501 are not broad, sweeping general prohibitions on air pollution such as those at issue in the *2014 Homer City Order*, *2011*

¹² The EPA notes that although NC 0401 and NC 0501 concern an underlying federal requirement, the Petitioners are incorrect that they are analogous to the New Hampshire regulations that the EPA addressed in the *2015 Schiller Order*. The Petitioners are also incorrect that the EPA's determination in the *2015 Schiller Order* is dispositive of the Administrator's determination concerning the claims in this Petition. In contrast to what the Petitioner's stated in the Petition, the EPA actually granted the petitioner's claim in the *2015 Schiller Order* because New Hampshire did not explain in the permit record how the New Hampshire regulation applied to the Schiller facility. *2015 Schiller Order* at 9. Further, a key factor in the EPA's grant in the *2015 Schiller Order* was that New Hampshire had incorrectly explained in its RTC that it was premature to address interstate transport obligations for the 2010 1-hour SO₂ NAAQS, like those referenced in the New Hampshire regulation at issue. *Id.* at 10. The EPA has consistently interpreted the statutory requirement to address interstate transport as imposing duties on states that are independent of the designations (or lack thereof) of areas in downwind states. *Id.* In addition, the EPA notes that the Petitioner has incorrectly interpreted the *2015 Schiller Order* in two key instances: (1) the EPA did *not* "flatly reject" New Hampshire's arguments that "establishing the numerical limits necessary to prevent NAAQS violations through the Title V permitting process was 'premature,'" Petition at 15; and (2) the EPA did *not* "specifically reject[]" NHDES's argument that, because there is a separate, parallel area designation process, NHDES did not need to translate an applicable requirement prohibiting NAAQS violations into numerical emission limits in a Title V permit renewal context." *Id.*

TransAlta Order, and *2008 Hercules Order* because NC 0401 and NC 0501 prohibit certain specific air pollution emissions (those that would exceed or contribute to a violation of the NAAQS) rather than containing a more general prohibition on air pollution.¹³

As the Petitioner noted, NC 0401 prohibits any facility or source of air pollution from causing violations of any NAAQS or contributing to such violation, and North Carolina has previously used NC 0501 to set emission limits to ensure that the NAAQS is not violated. However, there is no information in the permit record, including the RTC responding to comments on this issue, explaining the scope and timing of the applicability of NC 0401 and NC 0501 with respect to the 2010 1-hour SO₂ NAAQS.

In regards to NC 0401, the permit record does not mention NC 0401 at all, and thus leaving unaddressed the issue raised by the Petitioner regarding when and how NC 0401 applies in the context of the 2010 1-hour SO₂ NAAQS to Roxboro, including how compliance with NC 0401 is demonstrated.

In regards to NC 0501, the permit record does not adequately explain when NC 0501 will apply in the context of the 2010 1-hour SO₂ NAAQS and how the NCDEQ will determine if a more stringent SO₂ emissions limit is needed in the Roxboro permit to prevent violations of the 2010

¹³ In contrast to NC 0401 and NC 0501, the regulations addressed in the *2014 Homer City Order*, *2011 TransAlta Order*, and *2008 Hercules Order* contained broad, sweeping state-derived language.

No person may permit air pollution as that term is defined in the act.

...

Air pollution - The presence in the outdoor atmosphere of any form of contaminant, including, but not limited to, the discharging from stacks, chimneys, openings, buildings, structures, open fires, vehicles, processes or any other source of any smoke, soot, fly ash, dust, cinders, dirt, noxious or obnoxious acids, fumes, oxides, gases, vapors, odors, toxic, hazardous or radioactive substances, waste or other matter in a place, manner or concentration inimical or which may be inimical to public health, safety or welfare or which is or may be injurious to human, plant or animal life or to property or which unreasonably interferes with the comfortable enjoyment of life or property.

2014 Homer City Order at 12, 15–16 (quoting 25 Pa Code 121.7 and 25 Pa Code 121.1).

Emissions detrimental to persons or property. No person shall cause or permit the emission of any air contaminant from any source if it is detrimental to the health, safety, or welfare of any person, or causes damage to property or business.

2011 TransAlta at 7 (quoting Washington Air Code 173-400-040(5)).

No person owning, leasing or controlling the operation of any air contaminant sources shall willfully, negligently or through failure to provide necessary equipment or facilities or to take necessary precautions, cause, permit, or allow the emission from said air contamination source or sources of such quantities of air contaminants as will cause, or tend to cause, by themselves or in conjunction with other air contaminants a condition of air pollution in quantities or characteristics or of a duration which is injurious or which unreasonably interferes with the enjoyment of life or use of property in such area of the State as is affected thereby. Complying with any of the other sections of these rules and regulations or any subdivisions thereof, shall in no way exempt a person from this provision.

2008 Hercules Order at 8 (quoting Georgia Air Quality Control Rule 391-3-1-.02(2)(a)(1)).

1-hour SO₂ NAAQS. While the NCDEQ does explain in its RTC that, according to the procedures in the DDR, it has established and begun operating a local SO₂ monitor at Roxboro, this statement is not sufficient to explain when and how the NCDEQ will apply NC 0501 in the context of the 2010 1-hour SO₂ NAAQS. As the Petitioner noted, the Roxboro permit currently contains an SO₂ limit of 0.547 lb/MMBtu established under NC 0501 as a result of a modeling analysis from May 16, 2007. However, the permit record does not explain if this limit is adequate to satisfy the requirements of NC 0501 in regards to the 2010 1-hour SO₂ NAAQS, or, alternatively, why NC 0501 does not require a more stringent SO₂ emissions limit to protect the 2010 1-hour SO₂ NAAQS at this time.

For the reasons stated above, the EPA finds that the RTC and the permit record as a whole are inadequate for the EPA to sufficiently evaluate the Petitioner's substantive claim that more stringent SO₂ limits must be included in the Roxboro title V permit to comply with NC 0401 and NC 0501 in the context of the 2010 1-hour SO₂ NAAQS. The EPA therefore grants the Petitioner's request for an objection on Sub-claim A. However, the EPA is not resolving the separate Sub-claim B that the permit must include a compliance schedule for violating NC 0501 because it is unclear whether NC 0401 and NC 0501 require that Roxboro's title V permit include a more stringent SO₂ emission limit to ensure that the 2010 SO₂ NAAQS are not exceeded. If, in responding to this grant, the NCDEQ determines and explains on the record that NC 0401 and NC 0501 do not require a more stringent SO₂ emission limit to be included in the title V permit, a compliance schedule would not be necessary. On the other hand, if the NCDEQ determines that Roxboro is not in compliance with NC 0501, then the NCDEQ should determine if the permit must be amended to include a schedule of compliance in accordance with 40 C.F.R. § 70.5 (c)(3) and (c)(8).

For the foregoing reasons, the EPA grants the Petitioner's request for an objection on this claim.

Direction to the NCDEQ:

In responding to this Order, the NCDEQ should provide an adequate response to explain whether NC 0401 and NC 0501 require emission limits in the 2016 Roxboro permit to ensure the 2010 1-hour SO₂ NAAQS is not violated. Specifically, the NCDEQ should explain what NC 0401 requires and when and how NC 0501 would require an emission limit in Roxboro's title V permit to ensure that the 2010 1-hour SO₂ NAAQS is not violated.¹⁴ Specifically, the NCDEQ should

¹⁴ The EPA notes that on March 18, 2014, North Carolina submitted its infrastructure SIP (I-SIP) for the 2010 1-hour SO₂ NAAQS to meet the requirements that a state submit a plan, which provides for the implementation, maintenance, and enforcement of the NAAQS. This I-SIP submittal specifically listed "15A N.C.A.C. 2D.0500 'Emission Control Standards'" to meet the requirements of CAA § 110(a)(2)(C). *See* North Carolina Certification For Clean Air Act Section 110(a)(1) and (2) Infrastructure State Implementation Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standards, at 4 (March 18, 2014).

The EPA also notes that on April 19, 2016, North Carolina provided an updated designations recommendation to the EPA for Brunswick County for the 2010 1-hour SO₂ NAAQS, which explained that it added an SO₂ emission limit of 453.6 pounds per hour (lb/hr) in 2016 to the CPI Southport title V permit to assure compliance with the 2010 1-hour SO₂ NAAQS. *See* Letter from Donald R. van der Vaart, Secretary, NCDEQ, to Heather McTeer Toney, Regional Administrator, Region 4, EPA, *Updated 2010 1-Hour Sulfur Dioxide Boundary Recommendation for Brunswick County* (April 19, 2016); CPI USA North Carolina – Southport Plant Title V Permit, Permit No.

explain when a “more stringent control is required” by NC 0501 and how it makes this determination. The NCDEQ should explain the relationship between NC 0401 and NC 0501 and explain how the agency addresses these regulations in light of North Carolina’s obligations to implement, maintain, and enforce the 2010 1-hour SO₂ NAAQS.

V. CONCLUSION

For the reasons set forth above and pursuant to CAA § 505(b)(2), and 40 C.F.R. § 70.8(d), I hereby grant the Petition as to the claims described herein.

Dated: JUN 30 2017



E. Scott Pruitt,
Administrator.

05884T20 at 5 (April 18, 2016). The EPA notes that the CPI Southport title V permit cites NC 0501 as the authority for the 453.6 lb/hr SO₂ limit. *See id.*