ORAL ARGUMENT SCHEDULED FOR SEPTEMBER 20, 2019

Case No. 19-1019 (and consolidated cases)

United States Court of Appeals for the District of Columbia Circuit

STATE OF NEW YORK, ET AL.,

Petitioners,

v.

ENVIRONMENTAL PROTECTION AGENCY, ET AL.,

Respondents.

ON PETITION FOR REVIEW OF FINAL ACTION BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
83 Fed. Reg. 65,878 (Dec. 21, 2018)

REPLY PROOF BRIEF FOR STATE PETITIONERS

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GLOSSARY

Act	Clean Air Act
AG Comments	Comments of the Attorneys General of the States of New York, Connecticut, Maryland, and New Jersey and the Corporation Counsel of the City of New York on the Proposed Close Out Rule, EPA-HQ-OAR-2018-0225-0318 (Aug. 31, 2018)
Close-Out Rule, or Rule	Determination Regarding Good Neighbor Obligations for the 2008 Ozone National Ambient Air Quality Standard, 83 Fed. Reg. 65,878 (Dec. 21, 2018)
Update	Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS, 81 Fed. Reg. 74,504 (Oct. 26, 2016)
Connecticut Comments	Comments of the Connecticut Department of Energy & Environmental Protection on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0312 (Aug. 31, 2018)
Delaware Comments	Comments of the Delaware Department of Natural Resources & Environmental Control on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0097 (Aug. 31, 2018)
Earthjustice Comments	Comments of Earthjustice, *et al.*, on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0319 (Aug. 31, 2018)
EPA	United States Environmental Protection Agency
Good Neighbor Provision	42 U.S.C. § 7410(a)(2)(D)(i)(I)

JA	Joint Appendix
lb/mmBtu	pounds per million British thermal units
Maryland Comments	Comments of the Maryland Department of the Environment on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0093 (Aug. 31, 2018
Modeling Guidance	Modeling Guidance for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze, (Draft, Dec. 2014), EPA-HQ-OAR-2018-0225-0417
New York Comments	Comments of the New York State Department of Environmental Conservation on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0094 (Aug. 31, 2018)
OTC Comments	Comments of the Ozone Transport Commission on the Proposed Close-Out Rule, EPA-HQ-OAR-2018-0225-0316 (undated)
OTC, or Transport Commission	Ozone Transport Commission
RTC	EPA, Response To Comment Document, EPA-HQ-OAR-2018-0225-0243 (undated)
Transport Region	The Ozone Transport Region created pursuant to 42 U.S.C. § 7511c(a), which currently includes Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, part

	of northern Virginia, and the District of Columbia
2008 ozone standard	The national ambient air quality standards for ozone promulgated by EPA in 2008
2015 ozone standard	The national ambient air quality standards for ozone promulgated by EPA in 2015

PRELIMINARY STATEMENT AND SUMMARY OF ARGUMENT

For years, state petitioners have been unable to meet federal ozone standards because of pollution blown into our States from upwind States. Despite undisputed evidence of continued air quality violations through the 2021 attainment deadline, EPA refused to require any further upwind emission reductions in the rulemaking under review.

EPA argues that it had no obligation to regulate upwind emissions before 2021 because the relevant statutory deadlines apply only to downwind States. But this Court rejected that argument in *North Carolina v. EPA*, 531 F.3d 896 (D.C. Cir.), *amended in part on reh'g*, 550 F.3d 1176 (D.C. Cir. 2008), holding that the Good Neighbor Provision requires upwind States to reduce excess emissions in time for downwind States to satisfy federal standards.

EPA also arbitrarily and capriciously declined to require upwind sources to adopt available and feasible measures to reduce emissions before 2021, including use of already-installed equipment. EPA rejected these measures on the unsupported ground that they will not fully remedy upwind pollution before 2021, but the fact that a remedy provides a partial solution is no basis to reject it altogether—particularly when

EPA adopted the opposite approach in the 2016 Update, mandating incremental, short-term reductions in conjunction with a further inquiry into longer-term solutions. And there is no basis for EPA's related assertion that short-term controls will impede the consideration or adoption of long-term controls; a phased approach addressing immediate and future harms is a familiar feature of emissions regulations and a feasible approach to addressing ozone.

Finally, EPA's projection that air quality problems might be resolved years after the 2021 deadline rests on speculation about private actors' voluntary behavior. EPA acted unreasonably and contrary to the Act in presuming such actors will reduce emissions without federal requirements. EPA also contravened its guidance in dismissing contrary modeling calling into question its overly optimistic projections.

This Court should order EPA to reduce upwind States' emissions by the 2020 ozone season, the only meaningful remedy for EPA's failure to provide downwind States relief consistent with the 2021 deadline.

STATUTES AND REGULATIONS

Relevant statutes, etc. are in the addendum hereto and the addendum to State Petitioners' Opening Brief.

ARGUMENT

POINT I

EPA Unlawfully Disregarded the 2021 Attainment Deadline

A. *North Carolina* Held That the Good Neighbor Provision Unambiguously Requires Upwind Emission Reductions by Downwind Attainment Deadlines.

In the Close-Out Rule, EPA declined to require further upwind emission reductions before the upcoming 2021 attainment deadline[1] for serious nonattainment areas to meet the 2008 ozone standard, or even to conduct modeling or analysis relevant to that deadline. That conduct violates the Good Neighbor Provision, which requires upwind States to eliminate excess emissions "consistent with" Title I of the Act, including the statutory deadlines for downwind States to meet clean air standards. *See* 42 U.S.C. § 7410(a)(2)(D)(i). Interpreting that language, this Court in *North Carolina* set aside a prior good-neighbor rule because EPA failed to require upwind States to reduce their significant contributions to downwind attainment problems by the next deadline.

[1] References to 2021 air quality refer to ozone levels in the 2018-2020 ozone seasons, which determine 2021 attainment status.

EPA's defense of the Close-Out Rule simply recycles arguments that *North Carolina* already rejected. In *North Carolina*, as here, EPA Br. 16-17, EPA argued that the "consistent with" language did not "mandate any particular time frame" for upwind emission reductions. 531 F.3d at 911. This Court disagreed, holding that the "relevant language," viewed "in the context of the whole" Act, imposes a "statutory mandate" to align upwind emission reductions with downwind States' deadlines. *Id.* at 912.

Disregarding that holding, EPA argues that it may look beyond the 2021 deadline because of purported ambiguity in the phrase "consistent with." EPA Br. 17-18. EPA cites three cases addressing that phrase, EPA Br. 18, but those cases prove only that "consistent with" does not impose the same obligation in every statutory context. In *this* context, however, the Court has already held that requiring downwind States to meet attainment deadlines "without the elimination of upwind states' significant contribution to downwind nonattainment," would improperly "forc[e] downwind areas to make greater reductions than the [Good Neighbor Provision] requires." *North Carolina*, 531 F.3d at 912. In allocating responsibility between contributing upwind States and

nonattaining downwind States, the Act—through the Good Neighbor Provision—unambiguously requires upwind States to fulfill their obligations before downwind areas must demonstrate attainment. Otherwise, downwind States would face unwarranted regulatory burdens and prolonged risks to public health in no way "consistent with" the Act's deadline-driven process for attaining clean air.

EPA wrongly argues, EPA Br. 20-21, that it has flexibility in timing upwind States' good-neighbor obligations because this Court in *North Carolina* directed EPA to decide "what date, whether 2015 or earlier, is as expeditious as practicable" to implement a replacement. 531 F.3d at 930. The *North Carolina* Court was unequivocal that EPA had unlawfully failed to eliminate excess upwind emissions by the still-pending 2010 attainment deadline. *Id.* at 911-12. In declining to resolve the outside time limit for EPA to act, the Court was not recognizing agency discretion to ignore deadlines, but crafting a remedy accounting for circumstances where EPA had to "redo its analysis from the ground up." *Id.* at 929-30.

EPA is also mistaken, EPA Br. 18-19, that it may defer upwind emission reductions because a separate provision, 42 U.S.C. § 7511(a)(5), allows it, upon a nonattaining State's application, to extend attainment

deadlines by up to two years. EPA has not extended the 2021 deadline, and has thus failed to eliminate excess upwind emissions "consistent with" that unaltered deadline. Nor is it relevant, EPA Br. 19, that downwind States cannot always timely attain. The Good Neighbor Provision seeks to ensure upwind States' emissions do not exacerbate downwind States' often-formidable attainment challenges.[2] *See North Carolina*, 531 F.3d at 912.

Finally, EPA asserts that so long as it "considers" an upcoming attainment deadline, it may rely on "feasibility" concerns to delay upwind emission reductions beyond that date. EPA Br. 20-21. But EPA concedes that, under *North Carolina*, it cannot disregard attainment deadlines "based solely on reasons of feasibility." EPA Br. 20 (quoting *North Carolina*, 531 F.3d at 911). Moreover, this Court has held that attainment deadlines "leave no room for technological or economic infeasibility." *Sierra Club v. EPA*, 294 F.3d 155, 161 (D.C. Cir. 2002) (quotation marks and alterations omitted); *accord NRDC v. EPA*, 777

[2] Regardless of any timing differences for eliminating upwind emissions that interfere with downwind maintenance (as opposed to nonattainment) of the ozone standard, *see* EPA Br. 20, downwind States are—and will be in 2021—in nonattainment.

F.3d 456, 468 (D.C. Cir. 2014). While EPA argues *Sierra Club* recognized a duty to require only "reasonably available" reductions by the deadline, EPA Br. 25, the Court held that feasibility considerations cannot justify a complete failure to address emissions by an impending attainment deadline. 294 F.3d at 161-63.

B. EPA's Interpretation of the Good Neighbor Provision Is Unreasonable.

Even if the Act were ambiguous, the Close-Out Rule is not a reasonable interpretation of the Good Neighbor Provision. EPA asserts that it is enough to "consider" the 2021 attainment deadline. EPA Br. 21. But EPA performed no modeling of air quality or emissions for that deadline, the first step in EPA's past consideration of good-neighbor issues.[3]

Moreover, while purporting to rely on "feasibility" concerns to reject any analysis relevant to 2021 attainment, EPA admits that some additional upwind emission reductions are available immediately

[3] EPA does not dispute that it skipped the first two steps of its process, reaching a conclusion about "available emission reductions" that was not considered until step three in prior rules. 83 Fed. Reg. at 65,884/1.

through, *inter alia*, further use of already-installed controls. See *infra* at Point II.B. No conceivable reading of the Good Neighbor Provision permits upwind States that undisputedly contribute to downwind nonattainment by the next statutory deadline, to under-utilize widely installed and available controls that are far cheaper than controls required in downwind States.

EPA's unsupported speculation about potential over-control of upwind sources, EPA Br. 22-23, makes little sense. Given undisputed evidence of continued downwind ozone problems linked to upwind emissions through 2021,[4] EPA's theoretical concern about over-control merely guarantees violation of its "statutory obligation to avoid '*under-control*.'" *See EPA v. EME Homer City Generation, L.P.*, 572 U.S. 489, 523 (2014) (emphasis added). And to the extent EPA was concerned about over-control after 2021, EPA should have modeled multiple years,

[4] EPA's Update modeling projected continuing nonattainment and maintenance problems after that rule's implementation. The Ozone Transport Commission's more recent modeling, in the record here, shows continued problems through the periods relevant to the 2021 deadline. *See* OTC Comments 17, JA-___. EPA declined to conduct new modeling for 2021 after proposing the Close-Out, 83 Fed. Reg. 65,878, 65,912/1 (Dec. 21, 2018), and has not disputed the Commission's pre-2023 results.

reflecting the times different reduction strategies become available; EPA could opt against imposing additional future-year reductions that modeling shows to be no longer necessary. Instead, EPA unreasonably relied on speculative concerns about over-control in future years to avoid its obligation to reduce emissions now.

POINT II

EPA ARBITRARILY AND CAPRICIOUSLY IGNORED ADDITIONAL EMISSION REDUCTIONS AVAILABLE BY THE 2021 DEADLINE

EPA also acted arbitrarily and capriciously in failing to require available short-term upwind emission reductions before 2021, when undisputed record evidence shows continued attainment problems. *See* OTC Comments 17, JA-____; States' Br. 34-41.

A. EPA Arbitrarily Declined to Require Emission Reductions Because of Uncertainty about Providing a Complete Remedy.

EPA dismisses further short-term emission reductions by pointing to its long overdue duty to provide a full remedy for upwind States' good-neighbor obligations. EPA Br. 29 (further reductions "would be insufficient to ensure the Agency could fully resolve upwind Good

Neighbor obligations"); EPA Br. 48 (further reductions would not "feasibly address upwind Good Neighbor obligations by 2020"). But a purported inability to provide a full remedy is no basis for providing no remedy at all. *See Massachusetts v. EPA*, 549 U.S. 497, 524 (2007) (agencies "do not generally resolve massive problems in one fell swoop"). EPA identifies no practical conflict preventing it from mandating greater use of short-term controls now, while working towards a more complete future remedy requiring longer-term measures.

EPA lacks any record basis to dismiss additional upwind emission reductions available before 2021 as "minimal," "negligible," or not "meaningful." EPA Br. 9, 14, 30, 35-43, 46-51. EPA conducted no analysis of the extent of air quality problems or the effect of additional upwind emission reductions before 2021. EPA relies only on unsupported speculation for its assertion that requiring emission reductions through concededly available controls would not meaningfully ameliorate, or completely resolve, at least some downwind ozone problems. Likewise, EPA relies on unsupported speculation to assert, EPA Br. 46, that it could not reduce any upwind State's emissions below the 1% significance threshold.

EPA's reliance on an all-or-nothing rationale is at the same time an unexplained and unreasonable change in policy. *See FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). In the 2016 Update, EPA acknowledged that it was implementing a partial remedy to provide the relief available before the 2018 attainment deadline. EPA defended the Update to this Court as a "step-wise," "incremental approach to addressing Good Neighbor reductions." *See* Br. for Resp. EPA at 34-35, *Wisconsin v. EPA*, No. 16-1406 (D.C. Cir.), ECF No. 1713362. While defending the decision to "proceed[] incrementally" in 2016 as a reasonable judgment, EPA Br. 1, EPA inexplicably asserts now that because it purportedly cannot completely eliminate excess upwind emissions before 2021, it need take no action at all.[5]

EPA also attempts to justify its failure to require short-term reductions by asserting a preference for a control method—installation of

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[5] EPA rejects a partial remedy (EPA Br. 48) on the basis that an "amount of emissions reductions" that is too small to "feasibly address upwind Good Neighbor obligations" is an amount that does not "significantly contribute" to downwind nonattainment. That interpretation is irreconcilable with the Update, where EPA mandated emission reductions that resolved only 1 of 22 upwind States' obligations. 81 Fed. Reg. 74,504, 74,508/3 n.19 (Oct. 26, 2016).

new catalytic equipment—not available before 2021. EPA Br. 49. But EPA ultimately rejected that method too. EPA Br. 36. In any event, deciding to consider long-term measures is no justification for completely disregarding short-term measures needed to address ongoing air quality problems. EPA fails to explain why it could not have required use of short-term controls now, while also evaluating longer-term measures.

Nor does EPA explain why it could not have conducted modeling for both 2021 and a future year. *See* EPA Br. 33. Even accepting EPA's timeline of six months for step-one modeling, EPA Br. 74 n.21, EPA had 20 months between promulgating the Update and proposing the Close-Out Rule. Under the same time constraints, the Transport Commission conducted modeling (on an EPA-approved platform) relevant to *three* years: 2017, 2020 and 2023. *See* OTC Comments 15-17, JA-___-____. Even if EPA needed additional time to model multiple years, it acted arbitrarily in declining to first model a year relevant to the 2021 attainment deadline. Because locations not attaining by 2021 would not have another potential deadline before 2027, *see* 83 Fed. Reg. at 65,892/2, EPA would have had ample time for subsequent modeling and analysis of longer-term solutions.

B. Upwind Emission Reductions Are Available Before 2021.

1. Emission Reductions Are Available from Further Use of Already-Installed Controls.

EPA has failed to meaningfully contest—and in some cases concedes—that additional short-term upwind reductions are available from greater use of already-installed equipment.

a. Emission Reductions Are Available from Selective Catalytic Reduction Equipment.

As EPA acknowledges, EPA Br. 37, it identified in the Update sources that "did not appear to be fully optimiz[ing]" their existing catalytic controls, as evidenced by "emission rates above 0.10 lb/mmBtu." As EPA further acknowledges, EPA Br. 40, those "higher-emitting units" were still emitting at average rates of 0.120 lb/mmBtu in 2017 and 0.121 lb/mmBtu in 2018, 20% higher than the EPA-identified "achievable . . . emission rate," 81 Fed. Reg. at 74,543/3, and nearly 40% higher than the recently measured fleet average, *infra* at 14-15. EPA thus could have mandated additional ozone reductions by tightening upwind States' emissions budgets to account for further use of catalytic controls.

Indeed, EPA admits that the Update has only "generally succeeded in optimizing catalytic controls at covered units," EPA Br. 43, and does not dispute that *specific* additional reductions are available at identifiable, higher-emitting units. States' Br. 35-41. EPA lacks any record basis for speculating, EPA Br. 40, that unspecified barriers might hinder some of these units from achieving the rate EPA previously deemed attainable.

EPA also fails to sufficiently justify its decision not to tighten emissions budgets given newer data demonstrating that sources with catalytic controls can broadly achieve emission rates lower than 0.10 lb/mmBtu. In the Update, EPA used 2009-2015 data to calculate the 0.10 lb/mmBtu average fleetwide ozone-season emission rate. 83 Fed. Reg. 65,897/1. Even though many sources had achieved rates below 0.065 lb/mmBtu, Earthjustice Comments 20-23, JA___-___, EPA used the 0.10 figure as a target when setting emission budgets. Post-Update data demonstrated that sources could easily achieve far lower rates than EPA had assumed: units achieved an average rate nationwide of 0.088 lb/mmBtu in 2017, 83 Fed. Reg. at 65,898/3, and units in the Update region achieved a 2018 rate of 0.086 lb/mmBtu, *id*. at 65,898 n.94.

EPA was obligated to account for this new data by, for example, updating the calculation used in 2016 to justify a 0.10 lb/mmBtu rate.[6] Had EPA done so, it would have identified a lower target rate and tightened emission budgets accordingly.

b. Emission Reductions Are Available from Non-Catalytic Equipment.

EPA concedes, EPA Br. 46-48, that additional emission reductions are immediately available from full operation of already-installed selective non-catalytic equipment. Nonetheless, EPA dismissed further use of these controls on the incorrect bases that they would not provide meaningful emission reductions,[7] and that the Update had conclusively rejected this control strategy as not cost-effective. EPA Br. 31, 46-47.

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[6] Petitioners are not arguing, *see* EPA Br. 38-39, that EPA had to set emissions budgets assuming a 0.086 lb/mmBtu rate.

[7] In addition to the arguments above, see *supra* Point II.A, EPA's focus on an undefined set of "meaningful," multi-source reductions ignores its mandate to control "any source" significantly contributing to nonattainment or interfering with maintenance. 42 U.S.C. § 7410(a)(2)(D)(i). Indeed, addressing interstate pollution transport often requires multifaceted approaches where reductions from particular sources or source groups may be modest.

In the Update, EPA compared different controls available by 2017 to find the level that "maximized" "the ratio of emission reductions to marginal cost." 81 Fed. Reg. at 74,550/1. EPA determined measures available at or below $1,400/ton were most cost-effective "relative to other near-term control strategies" then available. 83 Fed. Reg. at 65,893/3, 65,908/3; *see also* 81 Fed. Reg. at 74,508/1-2, 74,550/1-2. Now that those earlier, cheaper control methods have not fully resolved air quality issues, it is unsurprising that remaining controls produce fewer reductions and entail higher marginal costs. *See* EPA Br. 32. But when attainment problems remain, that is no reason to forego those controls.[8] EPA has never provided any basis to determine that more fully operating non-catalytic reduction equipment is categorically not cost-effective

[8] Amicus Institute for Policy Integrity explains that "a more expensive technology would be cost-effective if the cheaper one does not lead to attainment of the goal." Institute Br. 10. The import of that position, which EPA distorts, EPA Br. 49-51, is that because reductions based on one cost threshold ($1,400/ton) did not meet the statutory goal of eliminating excess upwind emissions, EPA at a minimum needed to impose further reductions based on the next most expensive technology (using already-installed non-catalytic controls, at $3,400/ton). EPA lacks any principled basis for rejecting a $3,400/ton remedy in preference for a less cost-effective $5,000/ton future remedy that EPA *has also declined to impose*.

when, as here, cheaper options are insufficient. *See* 81 Fed. Reg. at 74,522/3, 74,553/3.

EPA's reliance on an obsolete cost comparison is also unjustifiable given the cost considerations that remain relevant. First, as EPA concedes, EPA Br. 32 n.9, operating non-catalytic equipment produces net benefits. Second, downwind States have adopted measures that are substantially more stringent and costly than operating installed non-catalytic controls (which reduce emissions at $3,400/ton). AG Comments 19-20, JA-___-____ (detailing $5,000-$44,000/ton downwind State controls). EPA contends that one example of costly controls used by downwind States is an inappropriate comparator, EPA Br. 34, but does not rebut Petitioners' broader demonstration that sources in downwind States must, *inter alia*, regularly operate controls at costs at and above the $5,000/ton cost of operating reasonably available control technology. *See, e.g.*, AG Comments 19-20, JA-___-____.

2. EPA Arbitrarily Ignored Reductions Available by 2020 from Short-Term Emission Limits.

Contrary to EPA's position, EPA Br. 43-46, the record demonstrates that upwind emission reductions are available before 2021 through

imposing short-term limits on sources' emissions. EPA dismisses evidence of increased emissions on the high-electric-demand days that lead to peak ozone concentrations—the main focus of short-term rates—as "generally" the product of additional units coming online and increased operation at other units. EPA Br. 44. But the data show that a significant number of the sources EPA examined had higher emission rates during periods of high-demand, showing that they turn off ("cycle") their controls during at least some of these days.[9] *See* Discussion of Short-Term Limits, EPA-HQ-OAR-2018-0225-0396, at 1-2, 4-6 tbls. 1-3, JA-___-___, ___-___. Imposing source-specific, achievable short-term emission rates would ensure that sources operate controls every day of the ozone season, including the high-demand days when air quality is typically the

[9] Preliminary 2018 emissions data confirm that many sources in the upwind States that EPA did not analyze, see *infra* at 19, had particularly high emissions on New York's peak ozone days or the immediately preceding days. *Compare* EPA, Air Markets Program Data, Customized Data Queries, Cross-State Air Pollution NOx Annual Program, https://ampd.epa.gov/ampd/ (daily ozone season emissions data for specified units) *with* NYSDEC, 2018 Ozone Exceedances in New York State (Sept. 6, 2018), https://www.dec.ny.gov/docs/air_pdf/2018o3ecx.pdf (high emissions on May 1-2, 2018 at Harrison 3 Plant in West Virginia; August 3, 2018 at East Bend 2 in Kentucky; June 27, 2018 at Elmer Smith 2 in Kentucky).

worst. New York Comments Detailed Comments 2, JA-____; *see also* Maryland Comments 5-8, JA-___-____.

Moreover, EPA's finding that the sources it examined, overall, had lower average rates on high-demand days, EPA Br. 43-44, is of little relevance given that EPA looked at plants in six eastern states, rather than at upwind sources throughout the Update region. And EPA's limited analysis suggests that cycling behavior—which short-term limits would prevent—occurs primarily in upwind States. Discussion of Short-Term Limits 6 tbl. 3, JA-____.

EPA contends that daily limits at individual units might limit compliance flexibility or interfere with emissions trading, EPA Br. 45, but downwind States' experience refutes that position. Sources in New York, New Jersey, Connecticut, Maryland, and Delaware have long been subject to shorter-term emission limits,[10] without detriment to participation in trading programs. EPA gives no concrete explanation why it cannot use the same combination of approaches here.

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[10] *See, e.g.*, 6 N.Y.C.R.R. § 227-2.6(b)(3); N.J.A.C. § 7:27-19.15; 7 Del. Admin. Code § 1112-3.2.4; R.C.S.A. § 22a-174-22e(d)(2).

POINT III

EPA'S RELIANCE ON FLAWED MODELING WAS ARBITRARY AND CAPRICIOUS

In projecting that no ozone attainment problems would remain by 2023, EPA incorporated unreasonable and unlawful assumptions in its modeling, violated its own guidance by dismissing available contrary information, and failed to account for its model's limitations. *See Sierra Club v. Costle*, 657 F.2d 298, 334 (D.C. Cir. 1981).

A. EPA's 2023 Modeling Relies on Unreasonable and Unenforceable Assumptions.

EPA admits that its 2023 projections assumed power plants would voluntarily reduce emissions 10 percent below what federally enforceable emission limitations require. EPA Br. 61. This assumption is unreasonable on its face. EPA does not dispute that, when it issued the Close-Out Rule, half of Update-region power plants equipped with catalytic controls were not meeting EPA's 0.10 lb/mmBtu target, let alone engaging in voluntary reductions to push emission rates lower. *See* New York Comments, Attachment 1-2, JA-___.

EPA also is wrong to claim, EPA Br. 60-61, that because sources, on average, have emitted below the Update's emission budgets, its

assumptions about future emissions are realistic. *See Chem. Mfrs. Ass'n v. EPA*, 28 F.3d 1259, 1265-66 (D.C. Cir. 1994) (rejecting agency's "speculative factual assertion"). Rather, current over-compliance just means that a large bank of emission allowances has built up, and sources will be able to cheaply purchase allowances instead of fully operating their controls.

EPA mischaracterizes its modeling as having additionally assumed only "known" changes in the power sector and "on-the-books reductions" required by state and federal law. EPA Br. 60-61. In fact, EPA has assumed future actions, such as plant retirements and switches from coal to gas, that have merely been proposed and are not certain to occur.

These unrealistic assumptions about private actors' future voluntary conduct also violate the requirement that state implementation plans—and federal plans EPA promulgates in their place—must contain "enforceable emissions limitations." 42 U.S.C. § 7410(a)(2)(A); *see also id.* at §§ 7410(a)(2)(C) & 7502(c)(6). Under these provisions, emission reductions that are unenforceable, even if reasonably anticipated, can have no role when upwind States demonstrate how they will meet the Good Neighbor Provision, or when

downwind States demonstrate how they will attain the standard. Indeed, EPA may redesignate an area as in attainment only when "permanent and enforceable reductions in emissions" assure continued attainment. *Id.* § 7407(d)(3)(E)(iii).

While EPA argues that these statutory provisions apply only *after* EPA finds an air quality problem, EPA Br. 62, the downwind areas here already have been designated as in nonattainment. The purpose of EPA's modeling is to assess whether a level of regulation is sufficient to remedy excess pollution by a future year, not to assume reductions that EPA has declined to mandate.

EPA's modeling is not akin to initial attainment demonstrations based on actual measured air quality, where enforceability is irrelevant. *See* EPA Br. 62. The more apt comparison is to the rigorous demonstration a downwind State must make to show it will come into attainment by a future year. That showing requires enforceable limits and control measures, *see* 42 U.S.C. §§ 7410(a)(2)(A) & 7502(c)(6), so that

the predicates necessary to reach attainment are assured, not merely assumed.[11]

Despite relying on private actors' voluntary emission reductions, EPA admits that it excluded as "speculative" the impact of its own proposed deregulatory actions. EPA Br. 66. EPA cannot have it both ways: if the Court accepts EPA's speculation about how third parties' voluntary behavior may abate air quality problems, the Court must fault as arbitrary EPA's failure to account for its own proposals' likely countervailing effects. *See* AG Comments 24-25, JA-__-__; Earthjustice Comments 31-32, JA-__-__.

B. EPA Failed to Account for the Limits of Its Model, Contrary to Its Guidance.

In addition to using flawed inputs, EPA failed to follow guidance directing it to act conservatively, and to use a "weight of evidence" assessment—incorporating observed air quality and "additional" available models—to verify a close attainment result. *See* Modeling

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[11] Given the overarching requirement that future attainment demonstrations be based on enforceable requirements, EPA's claim to have rejected at a different step of the analysis New York's 2008 implementation plan is irrelevant. EPA Br. 64 n.18.

Guidance 179-181, JA-__-___. EPA admits that it relied exclusively on results from one model, according no weight to results from another EPA-approved modeling platform, submitted by the Transport Commission, that proved more reliable. EPA Br. 69-70.

EPA claims it acted consistently with its guidance because the "alternative" model[12] here "might" be less reliable. *Id.* 70 & 71. But EPA discounted straightforward evidence that its model—unlike the Transport Commission's model—tended to under-predict ozone levels at the most problematic downwind monitors. *Compare* Connecticut Comments 4, Tbl. 2, JA-__ (EPA model significantly under-projected ozone at Westport, Connecticut), *with* OTC Comments 15, Tbl. 2, JA-__ (OTC model was accurate). While EPA claims that conditions in 2017 were especially conducive to ozone formation, EPA Br. 68-69, even EPA's maximum projections underestimated concentrations at several downwind monitors, some by more than 3 parts per billion. *See* Earthjustice Comments 6, Tbl. 2, JA-___ (maximum projections

[12] Labeling the model "alternative," rather than "additional," is a semantic difference of no import under EPA's guidance.

underestimated ozone at eight monitors). Given the admittedly small margins by which even EPA's average design values predicted attainment in 2023,[13] 83 Fed. Reg. at 65,917, Table III.C-1, had EPA given the other model any weight, it could not have reached the same optimistic conclusions.

EPA instead unreasonably dismissed the Transport Commission's more reliable modeling, reasoning that the two models performed "fairly consistent[ly]" at "nearly" all sites. 83 Fed. Reg. at 65,918. But two sites where the models showed large discrepancies were the critical Westport and Susan Wagner monitors, where the Transport Commission's modeling showed nonattainment in 2023.

EPA rejected those "anomalous" results as not "spatially consistent" with results at surrounding monitors. *Id.* at 65,919; *see* EPA Br. 70-71. But EPA's guidance explains that certain monitoring locations are "stiff"—i.e., relatively unresponsive to emission controls—even as

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[13] EPA urges the Court to focus on its model's average design values, EPA Br. 72-73, but the maximum values—which EPA uses to identify maintenance receptors—will typically determine under EPA's approach whether upwind States have remaining good-neighbor obligations. 81 Fed. Reg. at 74,531/3.

surrounding locations experience widespread reductions. Modeling Guidance at 183, JA-___. EPA irrationally attributed high ozone projections at those two critical sites to model error, rather than the obvious explanation of stiffness, given that those receptors historically (1) have measured consistently higher ozone levels than nearby monitors, and (2) have been slower to show improvements. *See* EPA, Ozone Design Values, 2017 Report, tbl.1b, cells 298-V & W compared with cells 295 & 296-V & W, *available at* https:www.epa.gov/air-trends/air-quality-design-values, JA-___ (no 2017 ozone decline at Westport, despite substantial reductions in nearby Fairfield).

Nor can EPA discount the Commission's results because those monitors are near the coast, and because EPA prefers modeling that uses a tool to limit the influence of "over-water" areas. EPA Br. 72. Modeling by EPA and the Transport Commission using that tool significantly under-predicted measured 2017 ozone concentrations, whereas the Transport Commission's standard modeling proved more reliable. *Compare* 83 Fed. Reg. at 65,920, *with* OTC Comments 15, Tbl. 2, JA-__. It was irrational for EPA to give no weight to the most accurate

demonstrated predictor of the two monitors most critical to the New York area's attainment status.

POINT IV

AN IMMEDIATE REMEDY IS NECESSARY TO RECTIFY EPA'S FAILURE TO PROVIDE TIMELY RELIEF

Petitioning States have repeatedly explained that EPA must provide emission reductions by the 2020 ozone season—the last period used to measure 2021 attainment. States' Br. 21-22, 49; States' Mot. for Expedition 1-3 (Mar. 4, 2019), ECF No. 1775911. In a footnote, EPA claims it cannot meet that timeframe, EPA Br. 74 n.21, and asks the Court to grant supplemental briefing (that would cause further delay) if it rules for petitioners. EPA cannot preserve that undeveloped argument by footnote. *Doe v. Exxon Mobil Corp.*, 654 F.3d 11, 50 n.37 (D.C. Cir. 2011). In any event, the argument is unpersuasive. EPA could require immediate upwind emission reductions, using only existing data and acting within the existing good-neighbor framework, by reducing upwind emissions budgets to reflect greater use of installed controls. See *supra* Point II.B.1. EPA would not have to "redo its analysis from the ground up." *See North Carolina*, 531 F.3d at 929-930. EPA could also swiftly and

easily mandate short-term emission limits. And while implementing those measures might not fully satisfy EPA's obligations, EPA must provide at least that partial remedy before 2021.

CONCLUSION

The Close-Out Rule should be vacated and remanded to EPA to promulgate a replacement effective by the 2020 ozone season.

Dated: July 11, 2019

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMIT

The undersigned attorney hereby certifies:

1. This document complies with the type-volume limitations of Fed. R. App. P. 32(a)(7)(B)(i) and this Court's order dated April 1, 2019 (Doc. No. 1780502). According to the word processing system used in this office, this document, exclusive of the sections excluded by Fed. R. App. P. 32(f) and Circuit Rule 32(e)(1), contains 4,997 words and that when combined with the word count of the reply brief of the other petitioners, the total does not exceed 9,000 words.

2. This document complies with the typeface requirements of Fed. R. App. P. 32(a)(5) and the type-style requirements of Fed. R. App. P. 32(a)(6) because this document has been prepared in a proportionally spaced typeface in 14-point Century Schoolbook.

Dated: July 11, 2019

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CERTIFICATE OF SERVICE

I hereby certify that on this 11th day of July, 2019, the foregoing Reply Proof Brief for State Petitioners was electronically filed with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit through the Court's CM/ECF system, which effected service upon counsel of record through the Court's system.

Dated: July 11, 2019

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STATUTORY AND REGULATORY ADDENDUM

ADDENDUM CONTENTS

Compilation of Codes, Rules and Regulations of the State of New York Currentness
Title 6. Department of Environmental Conservation
Chapter III. Air Resources
Subchapter A. Prevention and Control of Air Contamination and Air Pollution
Part 227. Stationary Combustion Installations
Subpart 227-2. Reasonably Available Control Technology (Ract) for Oxides of Nitrogen (NOx) (Refs & Annos)

6 NYCRR 227-2.6

Section 227-2.6. Testing, monitoring, and reporting requirements

(a) The owner or operator of each emission source must verify NO_x emissions by performing the applicable testing or monitoring procedure detailed below:

(1) For any very large boiler, NO_x emissions must be measured with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.

(2) For any large boiler, NO_x emissions must be:

(i) measured in accordance with emission test requirements described in subdivision (c) of this section; or

(ii) monitored with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.

(3) For any mid-size boiler, NO_x emissions must be:

(i) measured in accordance with the emission test requirements described in subdivision (c) of this section; or

(ii) monitored with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.

(4) For any combined cycle combustion turbine having a maximum heat input rate greater than 250 million Btu per hour, NO_x emissions must be measured with a CEMS as described in subdivision (b) of this section.

(5) For any simple cycle, regenerative combustion turbine and any combined cycle combustion turbine having a maximum heat input rate of 250 million Btu per hour or less, NO_x emissions must be:

(i) measured in accordance with the emission test requirements described in subdivision (c) of this section; or

(ii) monitored with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.

(6) For any stationary internal combustion engine, NO_x emissions must be:

(i) measured in accordance with the emission test requirements as described in subdivision (c) of this section; or

(ii) monitored with a CEMS as described in subdivision (b) of this section or with an equivalent monitoring system approved by the department.

(7) For any emission source subject to section 227-2.4(g) of this Subpart, NO_x emissions must be measured pursuant to a testing, monitoring, and reporting protocol that the department has determined is consistent with the applicable requirements for emission sources regulated under this Subpart that have comparable heat input ratings.

(b) CEMS requirements.

(1) The owner or operator of an emission source that monitors NO_x emissions with a CEMS or equivalent monitoring system must submit for department approval:

(i) a CEMS plan as part of its application for a permit or permit modification if a CEMS has already been installed, or if a CEMS is in the process of being procured or installed;

(ii) a CEMS plan at least 180 days prior to equipment installation. The department will notify the owner or operator of the acceptability of the plan, at least 60 days prior to equipment installation if it is not covered under subparagraph (i) of this paragraph; or

(iii) a proposed plan for a monitoring system that is equivalent to a CEMS.

(2) The owner or operator of an emission source that monitors NO_x emissions with a CEMS must submit for department approval a CEMS certification protocol at least 60 days prior to compliance testing. The certification protocol must include the location of and specifications for each instrument or device, as well as procedures for calibration, operation, data evaluation, and data reporting.

(3) The owner or operator of an emission source that monitors NO_x emissions with a CEMS must install, calibrate, maintain, and operate a CEMS for measuring NO_x at locations approved in the CEMS certification protocol under paragraph (2) of this subdivision, and must record the output of each such system. The following procedures and

test methods must be used for determining compliance with the relevant NO_x emission limit under section 227-2.4 of this Subpart:

(i) With the exception of emission sources subject to paragraph (a)(4) of this section, the owner or operator of an emission source must:

(*a*) calculate all 24-hour daily heat input-weighted average NO_x emission rates from block hourly arithmetic emission rate averages calculated by the CEMS and expressed in terms of pounds of NO_x per million Btu;

(*b*) demonstrate compliance with the appropriate emission limit under section 227-2.4 of this Subpart by using a CEMS for measuring NO_x and calculating a 24-hour daily heat input-weighted average NO_x emission rate. Facilities that are subject to 40 CFR part 75 will calculate their NO_x emission rate using part 75 monitoring requirements. Facilities that are not subject to 40 CFR part 75 may calculate their NO_x emission rate using either 40 CFR part 60, Appendix A, method 19 or 40 CFR part 75. A 30-day rolling heat input-weighted average emission rate may be used to demonstrate compliance with the appropriate emission limit under section 227-2.4 of this Subpart from October 1st to April 30th for emission sources other than combustion turbines; and

(*c*) determine the 24-hour daily heat input-weighted average NO_x emission rate based on the heat input-weighted average of the block hourly arithmetic average emission rates during each 24-hour daily period from 12:00 AM to 12:00 AM the following day using CEMS data. The block hourly heat input-weighted average emission rate must be calculated for each one-hour period starting with the period 12:00 AM to 1:00 AM and continuing through until the last period 11:00 PM to 12:00 AM; or, starting with the period 12:00 PM to 1:00 PM and continuing through the last period 11:00 AM to 12:00 PM. The 30-day rolling heat input-weighted average must be the average of the 24-hour daily heat input-weighted NO_x emission rate.

(ii) The owner or operator of an emission source subject to paragraph (a)(4) of this section must calculate:

(*a*) block hourly arithmetic average emission rates using data points generated by CEMS and expressed in terms of parts per million on a dry volume basis, corrected to 15 percent oxygen; and

(*b*) block hourly arithmetic average emission rates for the periods starting 12:00 AM to 1:00 AM, 1:00 AM to 2:00 AM, and so on.

(iii) At a minimum, valid CEMS data must be obtained for 90 percent of the operating hours in each calendar quarter that the subject facility is operating.

(iv) All valid CEMS data must be used in calculating emission rates even if the minimum data requirements of subparagraph (iii) of this paragraph are not met.

(v) The procedures under 40 CFR part 60, appendix B, Performance Specification 2; and any additional criteria specified by the department must be followed for the installation, evaluation, and operation of the CEMS.

(vi) Along with any specific additional data requirements mandated by the department for a particular emission source, annual recertifications, quarterly accuracy, and daily calibration drift tests must be performed in accordance with 40 CFR part 60, appendix F or 40 CFR part 75, as applicable.

(vii) When NO_x emissions data are not obtained because of CEMS downtime, emission data shall be obtained by using the 90th percentile value of all CEMS NO_x emission data collected over the last 180 days. Alternatively the owner or operator of a facility subject to part 75 may use 40 CFR part 75 data substitution procedures for periods when no valid CEMS data is available.

(4) CEMS recordkeeping and reporting requirements.

(i) The owner or operator of an emission source must notify the department of the planned initial start-up date of any new CEMS.

(ii) Protocols, reports, summaries, schedules, and any other information required to be submitted to the department under provisions of this Subpart must be sent (in either hardcopy or electronically) as follows:

(*a*) one copy to the Division of Air Resources, New York State Department of Environmental Conservation, 625 Broadway, Albany, NY 12233; and

(*b*) one copy to the regional air pollution control engineer at the appropriate regional office of the department.

(iii) Emissions, monitoring, and operating parameter records or measurements required by this Subpart, quarterly and annual summaries, and any additional parameters required by the department must be maintained for at least five years and made available to the department upon request.

(iv) Following each calendar quarter, the owner or operator must tabulate and summarize applicable emissions, monitoring, and operating parameter measurements recorded during the preceding three months (including but not limited to type and amount of fuel burned on a daily basis, heat content of the fuel, total heating value of the fuel consumed on a daily basis, the actual NO_x emission rate, the allowable NO_x emission rate, and the summation of the emission sources included in a system averaging plan). These records must be submitted to the department within 30 days following the end of each calendar quarter in a format acceptable to the department and must include:

(*a*) the average NO_x emission rates as specified under paragraph (3) of this subdivision. (With the exception of emission sources subject to paragraph (a)(4) of this section, emission sources are to record and tabulate block hourly average emission rates, but do not need to included the block hourly average emission rates in the quarterly summaries);

(*b*) identification of the operating hours when NO_x emissions data are not included in the calculation of the average emission rate and the reasons for not including that data; and

(*c*) the results of accuracy assessments as required by 40 CFR part 60, appendix F and any additional data quality information required by the department.

(v) The owner or operator of an emission source must submit the initial compliance test data, the performance evaluation of the CEMS found in 40 CFR part 60, appendix B, and the maximum heat input capacity.

(c) Emission test requirements. The owner or operator of an emission source required to conduct an emission test under subdivision (a) of this section must:

(1) submit a compliance test protocol to the department for approval at least 30 days prior to emission testing. The conditions of the testing and the locations of the sampling devices must be acceptable to the department; and

(2) follow the procedures set forth in Part 202 of this Title and use the following procedures set forth in 40 CFR part 60, appendix A, or any other method acceptable to the department and the administrator for determining compliance with the appropriate NO_x limit in section 227-2.4 of this Subpart:

(i) for large and mid-size boilers, use method 7, 7E, or 19 from 40 CFR part 60, appendix A;

(ii) for simple cycle combustion turbines or regenerative combustion turbines, use method 20 from 40 CFR part 60, appendix A;

(iii) for combined cycle combustion turbines, use method 7, 7E, 19 or 20 from 40 CFR part 60, appendix A;

(iv) for stationary internal combustion engines, use method 7, 7E, or 19 from 40 CFR part 60, appendix A;

(3) submit a compliance test report containing the results of the emission test to the department for approval no later than 60 days after completion of the emission test.

Credits

Sec. filed Jan. 19, 1994; amds. filed: Feb. 3, 1999; Jan. 26, 2000; June 19, 2001; Jan. 12, 2004 eff. 30 days after filing; amds. filed June 8, 2010 eff. July 8, 2010; amds. filed June 25, 2010 eff. July 25, 2010.

Current with amendments included in the New York State Register, Volume XLI, Issue 28 dated July 10, 2019. Court rules under Title 22 may be more current.

6 NYCRR 227-2.6, 6 NY ADC 227-2.6

End of Document

New Jersey Administrative Code
Title 7. Department of Environmental Protection
Chapter 27. Air Pollution Control (Refs & Annos)
Subchapter 19. Control and Prohibition of Air Pollution from Oxides of Nitrogen (Refs & Annos)

N.J.A.C. 7:27–19.15

7:27–19.15 Procedures and deadlines for demonstrating compliance

Currentness

(a) Except as set forth in (d) and (e) below, the owner or operator of equipment or a source operation subject to an emission limit under this subchapter shall demonstrate compliance with the emission limit as follows:

1. If a continuous emissions monitoring system has been installed on the equipment or source operation, or if any other provision of this subchapter requires emissions from the equipment or source operation to be monitored by a continuous emissions monitoring system under N.J.A.C. 7:27–19.18, the owner or operator shall calculate the average NO_x emission rate using the data from such a system for the NO_x concentration in the flue gas and either the flue gas flow rate or the fuel flow rate. To calculate the emission rate using the NO_x concentration and fuel flow rate, the owner or operator shall use the conversion procedure set forth in the Acid Rain regulations at 40 CFR 75, Appendix F, or an alternative procedure that the Department determines will yield the same result. Compliance with the limit shall be based upon the average of emissions:

i. Between May 1 and September 30, over each calendar day; and

ii. From October 1 through April 30 of the following year, over the 30–day period ending on each such day; or

2. If no continuous emissions monitoring system has been or is required to be installed on the equipment or source operation, compliance with the limit shall be based upon the average of three one-hour tests, each performed over a consecutive 60–minute period specified by the Department, and performed in compliance with N.J.A.C. 7:27–19.17. Any NO_x testing conducted pursuant to this section shall be conducted concurrently with CO testing. The applicable NO_x emission limits in this subchapter will not be considered to have been met unless the concurrent CO testing demonstrates compliance with the CO limit in N.J.A.C. 7:27–16.8, 16.9, 16.10, 16.11, or the permit limit for CO, whichever is more stringent, is also met.

(b) Except as set forth in (d) and (e) below, for any equipment or source operation subject to this subchapter that was in operation before January 1, 1995, the owner or operator shall demonstrate compliance with this subchapter in accordance with (a)1 or 2 above by May 31, 1996, and thereafter at the frequency set forth in the permit for such equipment or source operation, except that the owner or operator of any facility, equipment or source operation that is subject to a NO_x emissions limit under this subchapter as set forth at N.J.A.C. 7:27-19.5(d), 19.7(h), or 19.8(e), and that is in operation before November 7, 2005 shall demonstrate compliance with this subchapter in accordance with (a)1 or 2 above by March 7, 2008. Test results that demonstrate compliance with a new requirement within the five years preceding November 7,

2005 shall be accepted by the Department as satisfying this test requirement, if the testing and test report were reviewed by the Department and found satisfactory.

(c) Except as set forth in (d) and (e) below, for any equipment or source operation subject to this subchapter which commences operations or is altered after January 1, 1995, the owner or operator shall demonstrate compliance with this subchapter in accordance with (a)1 or 2 above within 180 days from the date on which the source commences operation, and thereafter at the frequency set forth in the permit for such equipment or source operation.

(d) For any equipment or source operation at an asphalt pavement production plant subject to a NO_x emissions limit at N.J.A.C. 7:27-19.9(a), the owner or operator shall demonstrate compliance with this subchapter in accordance with (a)2 above, within 365 days from the date at N.J.A.C. 7:27-19.9(f)1 or 2, and thereafter at the frequency set forth in the permit for such equipment or source operation.

(e) The owner or operator of any glass manufacturing furnace identified at N.J.A.C. 7:27-19.2(b)6 through 9 shall demonstrate compliance with the emission limit at N.J.A.C. 7:27-19.10(a), (b) or (f)2, as applicable, as follows:

1. Within 180 days after the first date after May 19, 2009 on which rebricking of the furnace is completed, and thereafter at the frequency set forth in the permit for such glass manufacturing furnace, the owner or operator shall demonstrate compliance in accordance with (e)2 or 3 below, whichever is applicable.

2. If a continuous emissions monitoring system has not been installed on the glass manufacturing furnace the owner or operator shall:

i. Determine the average pounds of NO_x emitted per hour by averaging three one-hour tests in accordance with (a)2 above;

ii. Determine the average tons of glass removed per hour during the same time period as the three one-hour tests in (e)2i above;

iii. Divide the average pounds of NO_x emitted per hour determined in (e)2i by the average tons of glass removed per hour determined in (e)2ii. The quotient is pounds of NO_x emitted per of ton glass removed;

iv. Compare the quotient to the emission limit specified at N.J.A.C. 7:27-19.10(a), (b) or (f)2, as applicable; and

v. Comply with the CO testing requirements at (a)2 above.

3. If a continuous emissions monitoring system has been installed on the glass manufacturing furnace, on a daily basis the owner or operator shall:

i. Determine the average pounds of NO_x emitted per day in accordance with (a)1i or ii above, as applicable;

ii. Determine the tons of glass removed per day during the same day as in (e)3i above;

iii. Divide the average pounds of NO_x emitted per day determined in (e)3i by the tons of glass removed per day determined in (e)3ii. The quotient is pounds of NO_x emitted per ton of glass removed; and

iv. Compare the quotient to the emission limit at N.J.A.C. 7:27-19.10(a), (b) or (f)2, as applicable.

(d) An exceedance of any applicable NO_x emission limit set forth in this subchapter, determined through testing or monitoring performed pursuant to (a), (b), or (c) above or otherwise, is a violation of this subchapter.

(f) An exceedance of any applicable NO_x emission limit set forth in this subchapter, determined through testing or monitoring performed pursuant to (a) through (e) above or otherwise, is a violation of this subchapter.

Credits

Amended by R.1995 d.214, effective April 17, 1995 (operative May 23, 1995); R.2005 d.343, effective October 17, 2005 (operative November 7, 2005); R.2009 d.137, effective April 20, 2009 (operative May 19, 2009).

EXECUTIVE ORDER NO. 66(1978) EXPIRATION DATE

<Chapter 27, Air Pollution Control, is exempt from expiration under Executive Order No. 66 (1978) and N.J.S.A. 52:14B–5.1 pursuant to 42 U.S.C. §§ 7401 et seq.>

Current through amendments included in the New Jersey Register, Volume 51, Issue 13, dated July 1, 2019.

N.J.A.C. 7:27–19.15, NJ ADC 7:27–19.15

End of Document

West's Delaware Administrative Code
Title 7. Natural Resources and Environmental Control
Division 1000. Division of Air Quality
Subdivision 1100. Air Quality Management Section
Chapter 1112. Control of Nitrogen Oxides Emissions

7 Del. Admin. Code 1112-3.0
Alternatively cited as DE ADC 7 1000 1112

1112-3.0. Standards.

Currentness

3.1 Except as set forth in 5.0 and 6.0 of this regulation, after May 31, 1995, no owner or operator of a major NO_x emitting source subject to the provisions of this regulation shall cause to be discharged into the atmosphere any emission of nitrogen oxides without using reasonably available control technology.

3.2 Maximum allowable emission rates of nitrogen oxides from fuel burning equipment with a rated heat input capacity of 100 MMBTU/hour or greater shall be established as follows:

3.2.1 Existing fuel burning equipment shall be presumed to meet the definition of reasonably available control technology if the owner or operator demonstrates to the satisfaction of the Department that the emission levels in Table 3-1 of this regulation can be met.

TABLE 3-1 Pounds NO_x Per Million BTU Heat Input

	Firing Type		
Fuel Type	**Face * and Tangential**	**Cyclone**	**Stokers**
Gas Only	0.20	N/A	N/A
Oil or Gas or Both	0.25	0.43	N/A
Coal (Dry Bottom)	0.38	N/A	0.40

* Includes wall, opposed, and vertical firing methods.

3.2.2 If the owner or operator does not make the demonstration described in 3.2.1 of this regulation, RACT shall be installed with the goal of achieving the presumptive emission limits as set forth in Table 3-1 of this regulation. RACT for this category of equipment will consist of combustion modification technology including either:

3.2.2.1 low NOx burner technology with low excess air and including Over Fire Air if technically feasible; or

3.2.2.2 flue gas recirculation with low excess air. If actual achievable emission levels following installation of such combustion modification technology are greater than the presumptive emission limits in Table 3-1 of this regulation, these actual emission levels will become RACT for those sources.

3.2.3 If the owner or operator does not comply with 3.2.1 or 3.2.2 of this regulation, alternative NO_x control technology and emission limitation proposals shall be required and approved by the Department in accordance with 5.0 of this regulation.

3.2.4 Compliance with the emission levels as determined above is based upon 24 hour rolling averaging period as follows:

3.2.4.1 For fuel burning equipment with a rated heat input of 250 MMBTU/hr or greater Continuous Emission Monitoring Systems (CEMS) approved by the Department will be used.

3.2.4.2 For fuel burning equipment with a rated heat input of 150 MMBTU/hr or greater but less than 250 MMBTU/hr compliance will be based on:

3.2.4.2.1 a CEMS approved by the Department; or

3.2.4.2.2 at the sources' request, an enhanced monitoring program approved by the Department. This enhanced monitoring program will identify and correlate various operating parameters with NO_x emission levels through source testing. These parameters will be used as surrogates to monitor NO_x emissions. Periodic source testing will be required to verify the validity of these surrogate parameters.

3.2.4.3 For fuel burning equipment with a rated heat input of 100 MMBTU/hr or greater but less that 150 MMBTU/hr compliance will be based on either 3.2.4.2.1 or 3.2.4.2.2 of this regulation or at the source's request by a periodic source testing program approved by the Department.

3.3 Maximum emission rates for nitrogen oxides from fuel burning equipment with a rated heat input capacity of less than 100 MMBTU/hr shall be as follows:

3.3.1 50 MMBTU/hr or greater: Shall not exceed those achieved by installation of either low excess air and low NO_x burner technology or flue gas recirculation technology, or equivalent NO_x control technology proposals approved by the Department in accordance with 5.0 of this regulation.

3.3.2 Less than 50 MMBTU/hr: Shall not exceed those achieved through an annual tune up performed by qualified personnel. The owner or operator shall maintain a log of the tune ups performed on each unit.

Regulations of Connecticut State Agencies
Title 22a. Environmental Protection
Department of Energy and Environmental Protection (4)
Abatement of Air Pollution (1) (Refs & Annos)

Regs. Conn. State Agencies § 22a-174-22e

Sec. 22a-174-22e. Control of nitrogen oxides emissions from fuel-burning equipment at major stationary sources of nitrogen oxides

Currentness

(a) **Definitions.** For the purposes of this section, the following definitions apply. Any term not defined shall be as defined in section 22a-174-1 of the Regulations of Connecticut State Agencies:

(1) "Affected unit" means a fossil-fuel fired:

(A) Stationary source that serves a generator with a nameplate capacity of 15 MW or more; or

(B) Boiler or indirect heat exchanger with a maximum heat input capacity of 250 MMBtu/hr or more.

(2) "Boiler serving an electric generating unit" or "boiler serving an EGU" means a steam generating unit used for generating electricity.

(3) "Combined cycle combustion turbine" means an internal combustion engine fueled by liquid or gaseous fuel, in which blades are driven by combustion gases to generate mechanical energy in the form of a rotating shaft that drives an electric generator which recovers heat from the turbine exhaust gases to generate steam that drives a steam turbine which drives an additional electric generator.

(4) "Combined heat and power system" means a steam-generating unit that simultaneously produces both electric power and useful thermal energy from the same primary energy source.

(5) "Combustion turbine" means an internal combustion engine fueled by liquid or gaseous fuel, in which blades are driven by combustion gases to generate mechanical energy in the form of a rotating shaft that drives an electric generator or other industrial equipment.

(6) "Cyclone boiler" means a boiler that combusts fuel in a horizontal water-cooled cylinder before releasing the combustion gases into the boiler.

(7) "Daily block average" means the arithmetic mean of all hourly emission concentrations or rates recorded when an emission unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight).

(8) "Digester gas" means a mixture of primarily methane and carbon dioxide produced by a bacterial degradation of organic matter under anaerobic conditions and used as a fuel.

(9) "Duct burner" means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a combined cycle combustion turbine, to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

(10) "Electric generating unit" or "EGU" means a combustion or steam generating source used for generating electricity that delivers all or part of its power to the electric power distribution grid for commercial sale.

(11) "Electricity supplier" means "electric supplier" as defined in section 16-1(a)(24) of the Connecticut General Statutes, and "municipal electric utility" as defined in section 7-233b(8) of the Connecticut General Statutes.

(12) "Emergency" means an unforeseeable condition that is beyond the control of the owner or operator of an emergency engine that:

(A) Results in an interruption of electrical power from the electricity supplier to the premises;

(B) Results in a deviation of voltage from the electricity supplier to the premises of three percent (3%) above or five percent (5%) below standard voltage in accordance with section 16-11-115 of the RCSA;

(C) Requires an interruption of electrical power from the electricity supplier to the premises enabling the owner or operator to perform emergency repairs;

(D) Requires operation of the emergency engine to minimize damage from fire, flood, or any other catastrophic event, natural or man-made; or

(E) Requires operation of the emergency engine under an agreement with the New England region system operator during the period of time the New England region system operator is implementing voltage reductions or involuntary load interruptions within the Connecticut load zone in accordance with Action 6 of the ISO New England Operating Procedure No. 4 - Action During a Capacity Deficiency, effective June 24, 2015, or subsequent revisions thereto.

(13) "Emergency engine" means a stationary reciprocating engine or a combustion turbine that is used as a means of providing mechanical or electrical power only during the following periods:

(A) Emergencies;

(B) Testing;

(C) Scheduled maintenance;

(D) When the facility owner or operator interrupts power to the facility to perform construction, maintenance or repair of the power distribution system for the facility or portion of the facility; or

(E) When the electricity supplier makes a scheduled interruption of power to the facility so that the electricity supplier may perform construction, maintenance or repair of the primary power distribution system for the facility.

With the exception of a reciprocating engine or combustion turbine operated pursuant to subparagraph (E) of subdivision (12) of subsection (a) of this section, "emergency engine" does not include a reciprocating engine or combustion turbine for which the owner or operator is a party to any other agreement to sell electrical power from such reciprocating engine or combustion turbine to an electricity supplier, or otherwise receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.

(14) "Existing emission unit" means a source for which construction commenced prior to the effective date of this section.

(15) "Force majeure" means an event caused by circumstances beyond the control of the owner or operator of the emission unit subject to the event, its contractors, or any entity controlled by the emission unit subject to the event that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the owner or operator of the emission unit subject to the event.

(16) "Gas" or "gaseous fuel" means natural gas, propane, or any other fuel that is in the gaseous state under standard conditions, except for landfill gas or digester gas.

(17) "Industrial/commercial/institutional boiler" or "ICI boiler" means an indirect heat exchanger that heats water to supply heat to an industrial, commercial, or institutional operation.

(18) "Landfill gas" means a mixture of primarily methane and carbon dioxide produced by bacterial degradation of organic matter in a landfill and used as a fuel.

(19) "Non-ozone season" means the period beginning October 1 of a calendar year and ending on April 30 of the following calendar year, inclusive.

(20) "Other oil" means a fuel that is liquid at standard conditions and is not residual oil.

(21) "Ozone forecast" means the eight-hour ozone forecast issued as an air quality index one or more days in advance by the commissioner and posted on the Department's website or otherwise provided by the Department for the regulated community.

(22) "Ozone season" means the period beginning May 1 of a calendar year and ending on September 30 of the same year, inclusive.

(23) "Phase 1" means the first implementation phase of this section, beginning June 1, 2018 and ending May 31, 2023.

(24) "Phase 2" means the second implementation phase of this section, beginning June 1, 2023 and continuing thereafter.

(25) "Reciprocating engine" means an internal combustion engine in which a rotating crankshaft is driven by reciprocating motion of piston or pistons.

(26) "Relative accuracy test audit" or "RATA" means the CEMS performance test procedure conducted pursuant to 40 CFR 60 or 40 CFR 75.

(27) "RCSA" means Regulations of Connecticut State Agencies.

(28) "Simple cycle combustion turbine" means a combustion turbine that does not recover heat from its exhaust gases.

(29) "Temporary unit" means any gaseous or liquid fuel fired unit that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers or platforms. A unit is not a "temporary unit" if any one of the following conditions exists:

(A) The unit is attached to a foundation;

(B) The unit or a replacement remains at the location within the facility and performs the same or similar function for more than 12 consecutive months, provided a temporary unit that replaces a temporary unit at a location and performs the same or similar function will be included in calculating such consecutive time period;

(C) The unit is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least two years and operates at that facility for at least three months of the year; or

(D) The unit is moved from one location to another within the facility, but continues to perform the same or similar function and serve the same electricity, steam or hot water system in an attempt to circumvent the residence time specification of this definition.

emission unit for the remainder of that day. An owner or operator of an emission unit may rely on an ozone forecast of "moderate" or lower obtained after 3 p.m. on the preceding day. Subsequent changes to the ozone forecast after 3 p.m. that forecast ozone levels of "moderate to unhealthy for sensitive groups" or greater shall not obligate the owner or operator to refrain from operation of the emission unit at the facility on the following day. Emission units that may operate pursuant to this exemption include the following:

(A) Fuel-burning equipment that is the subject of or used for research and development; or

(B) Compression-ignition reciprocating engines used exclusively for training personnel in the operation and maintenance of such engines aboard submarines.

(8) The requirements of subsections (d)(3), (i), (*l*), and (m) of this section shall not apply to a boiler that operates to supply steam used for the startup of a nuclear reactor or to supply hot water, heat or steam for the protection of facility systems when reactor-heated steam is not available at an electric generating facility licensed under 10 CFR 50.

(9) The requirements of this section shall not apply to non-road engines, as defined in 40 CFR 1068.30 or 40 CFR 89.2.

(10) With the exception of a reciprocating engine or combustion turbine operated pursuant to subparagraph (E) of subdivision (12) of subsection (a) of this section, the exemptions provided in subdivision (3) or (4) of this subsection are not available for a reciprocating engine or combustion turbine for which the owner or operator is party to an agreement to sell electrical power from such reciprocating engine or combustion turbine to an electricity supplier or an owner or operator who otherwise receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.

(11) For an emission unit subject to this section pursuant to subsection (b)(2)(A) of this section, if the owner or operator requests from the commissioner and is granted an enforceable limitation on daily NOx emissions to a level below the applicable daily NOx threshold in RCSA section 22a-174-22f(e)(2), the emission unit is no longer subject to this section. Such an enforceable limitation shall be issued in an order or a modification to an existing permit.

(d) **Emissions limitations.**

(1) The owner or operator of an emission unit shall not cause or allow an emission unit to exceed the applicable emissions limitations specified in this subsection unless such owner or operator undertakes one of the following actions:

(A) Implements an alternative compliance mechanism as provided in subsection (g) of this section;

(B) Operates under a case-by-case RACT determination as provided in subsection (h) of this section; or

(C) Ceases operation as provided in subsection (f) of this section.

(2) **Boilers serving EGUs.**

(A) For Phase 1, the following emissions limitations, based on a daily block average for an emission unit with a NOx CEM system, or as determined by NOx emission testing pursuant to subsection (*l*) of this section for an emission unit without a NOx CEM system, apply to the owner or operator of a boiler serving an EGU:

	Gas-fired (lb/ MMBtu)	Residual oil-fired (lb/MMBtu)	Other oil-fired (lb/ MMBtu)	Coal-fired (lb/ MMBtu)
Cyclone boiler	0.30	0.43	0.43	***
Other boiler	0.20	0.25	0.20	0.28

(B) For Phase 1, the following ozone season and non-ozone season emissions limitations apply to the owner or operator of a boiler serving an EGU that is also an affected unit. The averaging period for the ozone season limit is May 1 through September 30, and the averaging period for the non-ozone season limit is October 1 through April 30:

	Gas-fired (lb/ MMBtu)	Residual oil-fired (lb/MMBtu)	Other oil-fired (lb/MMBtu)	Coal-fired (lb/ MMBtu)
Ozone season limit (5 month average)	0.10	0.20	0.10	0.15
Non-ozone season limit (7 month average)	0.15	0.15	0.15	0.15

(C) For Phase 2, the following emissions limitations, based on a daily block average for an emission unit with a NOx CEM system, or as determined by NOx emission testing pursuant to subsection (*l*) of this section for an emission unit without a NOx CEM system, apply to the owner or operator of a boiler serving an EGU:

	Gas-fired (lb/ MMBtu)	Residual oil-fired (lb/MMBtu)	Other oil-fired (lb/MMBtu)	Coal-fired (lb/ MMBtu)
Boiler serving an EGU	0.10	0.20	0.10	0.12

(D) For Phase 2, the following non-ozone season emissions limitation applies to the owner or operator of a boiler serving an EGU that is also an affected unit. The averaging period for the non-ozone season limit is October 1 through April 30:

	Gas-fired (lb/MMBtu)	Residual oil-fired (lb/MMBtu)	Other oil-fired (lb/MMBtu)	Coal-fired (lb/MMBtu)
Non-ozone season limit (7 month average)	0.15	0.15	0.15	0.15

(3) **ICI Boilers.**

(A) For Phase 1, the following emissions limitations, based on a daily block average for an emission unit with a NOx CEM system, or as determined by NOx emission testing pursuant to subsection (*l*) of this section for an emission unit without a NOx CEM system, apply to the owner or operator of an ICI boiler:

	Gas-fired (lb/MMBtu)	Residual oil-fired (lb/MMBtu)	Other oil-fired (lb/MMBtu)
Boilers with a maximum rated capacity greater than or equal to 5 MMBtu/hr	0.20	0.25	0.20

(B) For Phase 1, the following ozone season and non-ozone season emissions limitations apply to the owner or operator of an ICI boiler that is also an affected unit. The averaging period for the ozone season limit is May 1 through September 30, and the averaging period for the non-ozone season limit is October 1 through April 30:

	Gas-fired (lb/MMBtu)	Residual oil-fired (lb/MMBtu)	Other oil-fired (lb/MMBtu)
Ozone season limit (5 month average)	0.10	0.20	0.15
Non-ozone season limit (7 month average)	0.15	0.15	0.15

(C) For Phase 2, the following emissions limitations, based on a daily block average for an emission unit with a NOx CEM system, or as determined by NOx emission testing pursuant to subsection (*l*) of this section for an emission unit without a NOx CEM system, apply to the owner or operator of an ICI boiler: