COMMENTS OF THE UTILITY AIR REGULATORY GROUP
on the
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY'S
RESPONSE TO CLEAN AIR ACT SECTION 126(b)
PETITIONS FROM DELAWARE AND MARYLAND

83 Fed. Reg. 26,666 (June 8, 2018); Docket ID No. EPA-HQ-OAR-2018-0295

July 23, 2018

The Utility Air Regulatory Group ("UARG") submits the following comments on EPA's "Response to Clean Air Act Section 126(b) Petitions from Delaware and Maryland; Notice of Proposed Action on Petitions" ("Proposed Action"). 83 Fed. Reg. 26,666 (June 8, 2018). For the reasons described in the Proposed Action, and as discussed in these comments, UARG supports EPA's proposal to deny the petitions filed by Delaware and Maryland under section 126 of the Clean Air Act ("CAA"). EPA should make final its proposed denial of the petitions.

UARG has a substantial interest in this proceeding and its outcome. UARG is a not-for-profit association of individual electric generating companies and national trade associations. UARG participates on behalf of certain of its members collectively in CAA administrative proceedings that affect electric generators and in litigation arising from those proceedings. The majority of electric energy in the United States is generated by individual members of UARG or members of UARG's trade association members. Members of UARG own many of the electricity-generating units ("EGUs") that Maryland and Delaware's petitions target for additional, direct federal regulation of ozone-season nitrogen oxide ("NOx") emissions from EGUs under section 126.[1] In addition, UARG and UARG members have participated

[1] The Proposed Action addresses five section 126 petitions submitted to EPA in 2016: four petitions submitted by Delaware, each targeting an individual power plant for additional emission control requirements; and a petition submitted by Maryland targeting 36 EGUs, located in five states (Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia), for additional emission control requirements. UARG member FirstEnergy Corp. owns the Harrison Power

extensively in EPA administrative proceedings under or related to section 126 and in federal court litigation arising from those proceedings or otherwise related to section 126.[2] Furthermore, over the last two decades, members of UARG—including UARG members that own EGUs targeted by the section 126 petitions at issue here—have been subject to, and have complied with, a series of increasingly stringent ozone-season NOx emission reduction requirements imposed on EGUs, and on their owners and operators, to address concerns regarding interstate transport with respect to attainment and maintenance of the ozone national ambient air quality standards ("NAAQS") in downwind states such as Maryland and Delaware.[3] Over this period,

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Station's three units in West Virginia (*see* https://www.firstenergycorp.com/about/generation_system.html#harrison), which are the subject of one of the Delaware petitions and are also among the subjects of the Maryland petition. As detailed in this footnote, UARG members hold ownership interests in a total of 18 of the 36 EGUs that the Maryland petition targets for additional emission control regulation under section 126. UARG member Duke Energy owns East Bend Station unit 2 in Kentucky (*see* https://www.duke-energy.com/our-company/about-us/power-plants/east-bend-station) and Gibson Station units 3 and 5 in Indiana (*see* https://www.duke-energy.com/our-company/about-us/power-plants/gibson-station). UARG member Ohio Valley Electric Corporation owns Kyger Creek Generating Station's five units in Ohio (*see* https://ovec.com/Kyger.php) and owns Clifty Creek Generating Station's three units in Indiana through its wholly-owned subsidiary Indiana-Kentucky Electric Corporation (*see* https://ovec.com/Clifty.php). UARG member FirstEnergy Corp. owns—in addition to the three units at the Harrison Power Station in West Virginia—the Bruce Mansfield Plant's unit 1 in Pennsylvania (*see* https://www.firstenergycorp.com/content/dam/corporate/generationmap/files/Bruce%20Mansfield%20Plant%20Facts.pdf) and Pleasants Power Station's two units in West Virginia (*see* https://www.firstenergycorp.com/content/dam/corporate/generationmap/files/Pleasants%20Facts.pdf). UARG member Tennessee Valley Authority owns Paradise Fossil Plant's unit 3 in Kentucky (*see* https://www.tva.gov/Energy/Our-Power-System/Coal/Paradise-Fossil-Plant). Documentation of UARG members' ownership of units targeted by the Delaware and Maryland petitions for regulation by EPA under section 126 is in the Attachment to these comments.

[2] *See, e.g.*, 65 Fed. Reg. 2674 (Jan. 18, 2000); *Appalachian Power Co. v. EPA*, 249 F.3d 1032 (D.C. Cir. 2001) (per curiam).

[3] *See* 63 Fed. Reg. 57,356 (Oct. 27, 1998) (promulgating the NOx SIP Call rule); 70 Fed. Reg. 25,162 (May 12, 2005) (promulgating the Clean Air Interstate Rule ("CAIR")); 71 Fed. Reg. 25,328 (Apr. 28, 2006) (promulgating CAIR federal implementation plans ("FIPs")); 76 Fed. Reg. 48,208 (Aug. 8, 2011) (promulgating the Cross-State Air Pollution Rule ("CSAPR")); 81 Fed. Reg. 74,504 (Oct. 26, 2016) (promulgating the CSAPR Update rule).

these UARG members, and other owners and operators of EGUs in the eastern half of the United States (including many members of UARG's trade association members), have achieved—at very substantial cost—dramatic reductions in EGUs' ozone-season NOx and year-round NOx emissions.[4] For all these reasons, UARG and UARG members have a strong, direct interest in supporting EPA's proposed denial of the section 126 petitions at issue in this proceeding.

I. Background

A. The Section 126 Petitions Addressed in the Proposed Action

The Proposed Action addresses five petitions filed with EPA in 2016 under CAA section 126. Maryland, though its Department of the Environment, filed a petition under section 126 in November 2016, alleging significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS in Maryland purportedly due to NOx emissions from 36 EGUs located in five states: Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia.[5]

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[4] *See, e.g.*, https://www3.epa.gov/airmarkets/progress/reports/emissions_reductions.html. These emission reductions include very recent additional ozone-season NOx emission reductions in response to EPA's latest ozone-season EGU NOx reduction regulation, the CSAPR Update. *See, e.g.*, 83 Fed. Reg. 33,730, 33,741 (July 17, 2018) (noting that "[p]reliminary data for the 2017 ozone season, which is the first CSAPR Update compliance period, indicate that power plant ozone season NOx emissions across the 22-state CSAPR Update region were reduced by 77,420 tons (or 21 percent) from 2016 to 2017") (footnote with citation omitted).

[5] As EPA explains in the Proposed Action, although certain passages in the Maryland petition allege that the remedy proposed in the petition would influence area designations in Maryland and other, nearby states under the 2015 ozone NAAQS, the petition requests a finding only with respect to the 2008 ozone NAAQS. 83 Fed. Reg. at 26,673. The Maryland petition's cover letter to EPA requests a finding only with respect to the 2008 NAAQS and does not mention the 2015 NAAQS. *Id*. Moreover, the petition is entitled, "Petition to the United States Environmental Protection Agency Pursuant to Section 126 of the Clean Air Act for Abatement of Emissions from 36 Coal-Fired Electric Generating Units at 19 Plants in Five States that Significantly Contribute to Nonattainment of, and Interfere with Maintenance of, the 2008 Ozone National Ambient Air Quality Standard in the State of Maryland"—making no reference to the 2015 ozone NAAQS. *See id.* at 26,672 n.19. And the petition concludes by stating, again with no mention of the 2015 NAAQS, that "EPA should grant Maryland's petition and quickly issue a finding that the 36 EGUs are significantly contributing to nonattainment and interfering with maintenance of the 2008 ozone NAAQS in the State." Because Maryland requested that EPA

Delaware, through its Department of Natural Resources and Environmental Control, filed four petitions under section 126 between July and November 2016, each alleging significant contribution to nonattainment and interference with maintenance of the 2008 and 2015 ozone NAAQS in Delaware purportedly due to NOx emissions from an individual source. The four sources targeted by the Delaware petitions are the Harrison Power Station ("Harrison") in West Virginia and the Homer City Generating Station ("Homer City"), the Brunner Island Steam Generating Station ("Brunner Island"), and the Conemaugh Generating Station ("Conemaugh"), all in Pennsylvania.

B. Relevant Statutory Language and Interpretation

The first sentence of section 126(b) of the CAA provides that "[a]ny State . . . may petition the [EPA] Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the prohibition" of CAA section 110(a)(2)(D)(i).[6] Section 110(a)(2)(D)(i)(I) of the CAA, in turn, provides that a state implementation plan ("SIP") for implementing NAAQS must "contain adequate provisions . . . prohibiting . . . any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will . . . contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any [NAAQS]." The second sentence of section 126(b) states that "[w]ithin 60 days after receipt of any petition under this subsection and

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make a finding under section 126 for the 2008 NAAQS only, EPA did not evaluate Maryland's petition with respect to the 2015 NAAQS. *Id*. UARG agrees that it is clear that that petition requests a finding solely under the 2008 NAAQS and therefore that there is no need for EPA to evaluate that petition with respect to the 2015 NAAQS.

[6] The text of section 126(b) refers to CAA section 110(a)(2)(D)(ii), but federal courts of appeals have held that that reference is a scrivener's error and that Congress intended section 126(b) to refer instead to section 110(a)(2)(D)(i). *GenOn Rema, LLC v. EPA*, 722 F.3d 513, 517 n.3 (3d Cir. 2013); *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1040-44 (D.C. Cir. 2001) (per curiam); *see* 83 Fed. Reg. at 26,667 n.3.

after public hearing, the Administrator shall make such a finding [*i.e.*, a finding as described in the first sentence of section 126(b)] or deny the petition." Because section 126 actions of the Administrator are subject to section 307(d) of the CAA, *see* CAA § 307(d)(1)(N), EPA may extend section 126(b)'s 60-day deadline for action pursuant to its authority under CAA § 307(d)(10), and EPA did so with respect to the Maryland petition and each of the Delaware petitions, *see* 83 Fed. Reg. at 26,672, 26,674.

As EPA describes in the Proposed Action, the Agency has used the same basic four-step analytical framework in its previous assessments of interstate transport of ozone and ozone precursors, including the assessment underlying EPA's 2016 CSAPR Update for the 2008 ozone NAAQS. That framework includes the following steps:

> (1) Identifying downwind air quality problems relative to the ozone NAAQS. . . .[;]
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> (2) determining which upwind states are linked to these identified downwind air quality problems . . ..[;][7]
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> (3) for states linked to downwind air quality problems, identifying upwind emissions on a statewide basis that will significantly contribute to nonattainment or interfere with maintenance of a standard. . . .[;] [and]
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> (4) for states that are found to have emissions that significantly contribute to nonattainment or interfere with maintenance of the NAAQS downwind, implementing the necessary emissions reductions within the state.

Id. at 26,668. Consistent with this framework, EPA reasonably interprets the relevant statutory language as making it appropriate for the Agency to consider whether cost-effective emission reductions are available at a particular emission source when it determines whether to make a finding requested under section 126(b) with respect to that source:

[7] As EPA notes in the Proposed Action, "[i]n the EPA's most recent rulemakings, the EPA identified [linked] upwind states to be those modeled to contribute at or above a threshold equivalent to one percent of the applicable NAAQS." 83 Fed. Reg. at 26,668.

> EPA's decision whether to grant or deny a CAA section 126(b) petition regarding both the 2008 8-hour ozone and 2015 ozone NAAQS depends on: (1) Whether there is a downwind air quality problem in the petitioning state (*i.e.*, step one of the four-step framework); (2) whether the upwind state where the source subject to the petition is located is linked to the downwind air quality problem (*i.e.*, step two); and, (3) if such a linkage exists, whether there are additional highly cost-effective controls achievable at the source(s) named in the CAA section 126(b) petition (*i.e.*, step three).

Id. at 26,675 (footnote omitted). Step 4 of EPA's framework—*i.e.*, implementation of emission reduction requirements in an upwind state that is found, after application of steps 1, 2, and 3, to contribute significantly to nonattainment or interfere with maintenance of the NAAQS in one or more downwind states—is, by definition, not reached unless the upwind state is found to have such downwind impacts in the first three steps. *Id*. at 26,675 n.35. For reasons explained in the Proposed Action and discussed below, EPA properly did not reach step 4 in its analysis of any of the five petitions that the Proposed Action addresses.

C. EPA's Proposed Action

In the Proposed Action, "EPA proposes to deny all five petitions because Delaware and Maryland have not met their burden to demonstrate that the sources emit or would emit in violation of the CAA's 'good neighbor' provision[8] (*i.e.*, the petitions have not demonstrated that the sources will significantly contribute to nonattainment or interfere with maintenance of the 2008 or 2015 ozone NAAQS in the petitioning states)."[9] *Id.* at 26,666. EPA also proposes to find that, based on its own independent technical analysis, "the identified sources do not currently emit and are not expected to emit pollution in violation of the good neighbor provision for either the 2008 or 2015 ozone NAAQS." *Id.*

[8] CAA section 110(a)(2)(D)(i)(I) is sometimes called the "good neighbor" provision.

[9] As discussed below (and explained more fully in the Proposed Action), EPA "identified several elements of the states' analysis that are considered insufficient to support the states' conclusions." 83 Fed. Reg. at 26,667.

II. The CAA Provides EPA with Broad Discretion To Deny a Petition Under Section 126(b).

The Act provides EPA broad discretion to decline to make a finding requested in a section 126(b) petition and, thus, to deny the petition. As EPA notes in the Proposed Action, under CAA section 126(b), the section 126 petitioner must satisfy the obligation to provide a compelling technical analysis that clearly establishes the basis for the specific finding it requests. *See id*. at 26,674 ("The petitioner . . . bears the burden of establishing, as an initial matter, a technical basis for the specific finding requested."). Failure by the petitioner to satisfy that obligation provides ample grounds for denying the petition. *See id*. This is consistent with EPA's longstanding approach to evaluating section 126 petitions. *Id*. And, although EPA may choose to conduct an independent technical analysis with respect to the issues raised in the petition, it is under no obligation to do so. *Id.*

The express language of section 126(b) is instructive regarding EPA's discretion to deny a section 126 petition. Section 126(b) provides that "the Administrator shall make such a finding [as requested by the petition] *or deny the petition*" (emphasis added). Thus, for example, if the Administrator determines in his judgment that the petition fails to present an adequate basis on which to make an affirmative finding that a source "emits or would emit . . . in violation of the prohibition of" section 110(a)(2)(D)(i)(I), then the Administrator "*shall* . . . *deny* the petition" (emphasis added). In other words, the Administrator in that circumstance is fully authorized under the statute to deny the petition. Although the Administrator could, in his discretion, choose to undertake a separate analysis to determine whether an adequate basis exists—independently from any information, analyses, or arguments presented in the section 126 petition itself—on which he might make an affirmative finding, section 126(b) does not obligate or direct the Administrator to conduct such an analysis. Of course, if the Administrator *does* decide in his

discretion to undertake any additional analysis, he may rely on that analysis as a basis on which to determine that adequate grounds do *not* exist for making an affirmative finding in response to the petition.

As described below, EPA lawfully and reasonably proposes to conclude, based on the inadequacy of the data and analysis provided by Maryland and Delaware in their petitions and based further on the results of EPA's own analyses, that denial of each of the five petitions is warranted.

III. EPA Properly Proposes To Exercise Its Discretion by Declining To Make an Affirmative Finding in Response to Each of the Petitions Filed by Maryland and Delaware; Accordingly, Denial of the Petitions Is Necessary and Appropriate.

EPA reasonably and properly proposes to find that Maryland and Delaware each failed to meet its burden of providing in their petitions an analysis adequate to demonstrate that the identified sources emit or would emit in violation of the prohibition of section 110(a)(2)(D)(i)(I).

As EPA explains in the Proposed Action, consistent with the four-step framework discussed above,

> EPA interprets the phrase "emits or would emit" in the context of acting on Delaware's and Maryland's petitions regarding the 2008 and 2015 ozone NAAQS to mean that a source may "emit" in violation of the good neighbor provision if, based on current emissions levels, the upwind state contributes to downwind air quality problems (*i.e.,* steps one and two), and the source may be further controlled through implementation of highly cost-effective controls (*i.e.*, step 3). Similarly, a source "would emit" in violation of the good neighbor provision if, based on reasonably anticipated future emissions levels (accounting for existing conditions), the upwind state contributes to downwind air quality problems (*i.e.*, steps one and two) and the source could be further controlled through implementation of highly cost-effective controls (*i.e.*, step 3).

Id. at 26,675. EPA's interpretation is consistent with the statutory language and with EPA's prior practice. In addition, EPA correctly notes that "if the EPA or a state has already adopted provisions that eliminate the significant contribution to nonattainment or interference with maintenance of the NAAQS in downwind states, then there simply is no violation of the CAA

section 110(a)(2)(D)(i)(I) prohibition, and hence no grounds to grant a section 126(b) petition." *Id*. at 26,675-76. In other words, EPA explains, "requiring additional reductions would result in eliminating emissions that do not contribute significantly to nonattainment or interfere with maintenance of the NAAQS, an action beyond the scope of the prohibition in CAA section 110(a)(2)(D)(i)(I) and therefore beyond the scope of the EPA's authority to make the requested finding under CAA section 126(b)." *Id*. at 26,676 (citing the prohibition against requiring over-control, as articulated in *EPA v. EME Homer City Generation, L.P.*, 134 S. Ct. 1584, 1604 n.18, 1608-09 (2014)). Where the requirements of section 110(a)(2)(D)(i)(I) have been addressed by a SIP or a FIP, a section 126 petitioner must, at a minimum, produce relevant new information in order to make an affirmative showing. *See id*.

Applying these standards, EPA conducted a thorough review of each of the five petitions submitted by Maryland and Delaware and concluded that "material elements of the analysis provided in [those] petitions are technically deficient" and, therefore, EPA "proposes to deny the petitions, in part, on the basis that the conclusions that the petitions draw are not supported by the petitions' technical assessments." *Id*.

Based on its consideration of the circumstances germane to the petitions, EPA elected to conduct an independent analysis to determine whether an adequate basis exists to provide relief as requested in the petitions. One of the primary circumstances that led EPA to conduct an independent analysis was the fact that "the petitions from both states were submitted before the implementation of the emissions budgets promulgated in the CSAPR Update," which addresses interstate transport with respect to the 2008 ozone NAAQS for each of the upwind states in

which the petition-targeted EGUs are located. *Id.* at 26,668, 26,679; s*ee id*. at 26,674-75.[10] In the CSAPR Update, EPA determined that the emissions from the five states in which are located the 36 EGUs identified by Maryland's petition were linked to an air quality receptor located in Harford County, Maryland, that EPA at that time projected to have difficulty maintaining the 2008 ozone NAAQS in 2017.[11] *See id*. at 26,670 (citing 81 Fed. Reg. at 74,538-39); *id.* at 26,678. The CSAPR Update did not link emissions from any upwind states (including Pennsylvania and West Virginia, where the sources identified in Delaware's petitions are located) to ozone air quality problems at any Delaware receptors because EPA's CSAPR Update modeling did not project any 2008 ozone NAAQS nonattainment or maintenance problems at any Delaware monitors. *Id*. In addition, EPA issued a memorandum in October 2017 that "provide[s] supplemental information to states and the [EPA] Regional offices as they develop or review [SIPs] that address section 110(a)(2)(D)(i)(I) of the Clean Air Act . . . as it pertains to the

[10] As EPA notes in the Proposed Action, EPA stated in promulgating the CSAPR Update that, at that time, the Agency could not determine definitively that the ozone-season NOx emission budgets imposed by that rule for 21 of the 22 states subject to the rule (*i.e.*, all of the 22 states except Tennessee) necessarily constitute a full remedy for interstate transport with respect to the 2008 ozone NAAQS. *See id.* at 26,670 & n.6; 81 Fed. Reg. at 74,521 & n.84. EPA recently published a proposed rule in which it "proposes a determination that, based on additional information and analysis, the CSAPR Update fully addresses" interstate transport obligations for 20 of those 21 states with respect to the 2008 ozone NAAQS. 83 Fed. Reg. 31,915 (July 10, 2018). The 21st state—Kentucky—is addressed in a separate EPA rule, in which EPA approved Kentucky's 2018 interstate transport SIP as demonstrating that that state's CSAPR Update ozone-season NOx emission budget, together with other existing control requirements, fully resolves any significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS in other states. 83 Fed. Reg. 33,730 (July 17, 2018).

[11] In the Proposed Action, EPA says that the CSAPR Update modeling projected that this Harford County monitor "was expected to have nonattainment and maintenance problems for the 2008 NAAQS." 83 Fed. Reg. at 26,678. In the CSAPR Update, however, EPA listed the Harford monitor as a "maintenance-only" downwind receptor. *See* 81 Fed. Reg. at 74,533 Table V.D–2; *see also id.* at 74,538-39 Table V.E–3.

2008 ozone [NAAQS]."[12] Attachment A to that memorandum provides updated modeling data, including EPA-projected ozone design values for 2023 for air quality monitors throughout the 48 contiguous states. This updated modeling projects that no monitoring sites, outside of California, will have nonattainment or maintenance problems with respect to the 2008 ozone NAAQS in 2023 and projects that no monitoring sites in Delaware will have nonattainment or maintenance problems with respect to either the 2008 or the 2015 ozone NAAQS in 2023.[13]

Specific issues relating to the petitions' inadequacy and the outcome of EPA's independent analysis are discussed below, in subsections A and B, respectively.

A. The Analyses in the Petitions Are Inadequate To Support the Findings that Maryland and Delaware Requested.

EPA reasonably and properly proposes to conclude that Maryland and Delaware both failed to meet their burden of providing an analysis in their respective petitions that demonstrates EPA should make the requested findings. Thus, each of the petitions is insufficient to support a section 126(b) finding.

1. Maryland's Petition

Maryland alleges in its petition that all of the 36 EGUs identified therein are operating their post-combustion NOx emission control equipment in a less-than-optimal manner. *See id*. at 26,677. Maryland seeks to support this allegation by comparing each EGU's lowest NOx

[12] This EPA memorandum (entitled "Supplemental Information on the Interstate Transport State Implementation Plan Submissions for the 2008 Ozone National Ambient Air Quality Standards under Clean Air Act Section 110(a)(2)(D)(i)(I))") and associated data are available at https://www.epa.gov/airmarkets/october-2017-memo-and-supplemental-information-interstate-transport-sips-2008-ozone-naaqs.

[13] *See* 83 Fed. Reg. at 26,678 & n.45. In addition, with respect to the 2015 ozone NAAQS, the Proposed Action explains that 2023 "is the last year of ozone season data that will be considered in order to determine whether downwind nonattainment areas classified as moderate [for the 2015 ozone NAAQS] have attained th[at] standard by the relevant 2024 attainment date" for those nonattainment areas. *Id*. at 26,678 (citing EPA's October 2017 memorandum).

emission rate between 2005 and 2008 to that EGU's NOx emission rate from the 2015 and 2016 ozone seasons. *Id*. Based on this comparison, Maryland asserts these EGUs are emitting in violation of section 110(a)(2)(D)(i)(I) in light of the absence of short-term emission limits that, according to Maryland, would require optimizing their post-combustion controls. *Id*.

As EPA explains in the Proposed Action, however, the premise of Maryland's petition is the unrealistic and unfounded assumption that the lowest observed NOx emission rate at a unit can be consistently achieved at that unit on a continuing basis, and this unsupported assumption represents a critical technical weakness that undermines Maryland's petition. *See id*. EPA states that "in the CSAPR Update, the EPA determined that the third lowest fleet-wide average coal-fired EGU NOx rate for EGUs with operating SCRs [selective catalytic reduction post-combustion NOx emission controls] is most representative of ongoing, achievable emission rates." *Id*. As EPA explains, Maryland's reliance on an EGU's lowest historical NOx emission rate would overestimate potential emission reductions and understate the costs of optimizing controls and restarting idled units. *Id*.

2. Delaware's Petitions

As EPA explains, two primary factors make it clear that each of Delaware's petitions is inadequate. First, Delaware failed to demonstrate that an air quality problem with respect to the 2008 ozone NAAQS exists in the state currently or is expected to exist in the future. As noted above, EPA's modeling for the CSAPR Update did not identify any receptors in Delaware as having a nonattainment or maintenance problem with respect to the 2008 ozone NAAQS. *Id.* at 26,670. Delaware presented contribution modeling that purported to show that: (i) emissions from each of the sources identified in Delaware's petitions were modeled to contribute more than one percent of the 2008 ozone NAAQS to Delaware locations on particular days during the 2011

ozone season;[14] and (ii) if the 2015 ozone NAAQS had been in effect, more exceedances of that more stringent NAAQS would have occurred. *See id*. at 26,670-71, 26,676-77. But, for reasons EPA explains, these individual model-projected exceedances do not demonstrate a nonattainment or maintenance problem. For example, as EPA explains, "[o]zone NAAQS violations [with respect to both the 2008 and the 2015 NAAQS] are determined based on the fourth-highest daily maximum ozone concentration, averaged across 3 consecutive years" and therefore "individual exceedances at monitors do not by themselves indicate that a state is not attaining or maintaining the NAAQS." *Id*. at 26,676.

Furthermore, each of Delaware's petitions relies on air quality modeling based on outdated emission data from 2011, which are unrepresentative of current and future NOx emissions and are uninformative with respect to current and reasonably expected downwind-state ozone concentrations and upwind-state contributions. *See id*. (observing that "2011 emissions are generally higher than, and therefore not representative of, current or future projected emissions levels at these EGUs and in the rest of the region"). This deficiency alone shows the inadequacy of the petitions' analyses. As EPA notes in the Proposed Action, if EPA were "to act based on non-representative information solely because it was provided in a petition, that result could be an arbitrary and unreasonable decision by the EPA, and could . . . impose controls or emissions limitations that are not appropriately tailored to the nature of the problem at the time of the EPA's final action or at the time when such controls or limitations would actually be implemented"—thereby creating the prospect of unlawful over-control. *Id*. at 26,677 (citing *EME Homer City,* 134 S. Ct. at 1608-09).

[14] *Id.* at 26,670; *see also id.* at 26,671-72 (describing Delaware's proffered modeling results with respect to each source named in Delaware's petitions).

B. EPA's Own Analysis Confirms that No Basis Exists for an Affirmative Finding in Response to the Petitions and, Therefore, that Denial of the Petitions Is Warranted.

EPA's independent analysis, based on the four-step analytical framework described above and discussed in the Proposed Action, confirms that no basis exists for an affirmative finding under CAA section 126(b) with respect to any of the five petitions addressed in the Proposed Action.

1. EPA's Analysis of Maryland's Petition

As noted above, EPA's modeling conducted for the CSAPR Update linked each of the five states in which EGUs identified in Maryland's petition are located to a projected maintenance receptor in Harford County, Maryland, with respect to the 2008 ozone NAAQS. *Id*. at 26,678. Under step three of EPA's framework, therefore, EPA considered whether highly cost-effective NOx emission reductions not already in effect are available from the 36 EGUs that Maryland's petition identifies.

Of those 36 EGUs, 32 are equipped with SCRs,[15] and each of the states in which those units are located is included in the ozone-season NOx program established by the CSAPR Update, which subjects all of those EGUs to statewide ozone-season NOx emission allowance budgets. *Id*. at 26,679. EPA reasonably proposes to determine, based on its analysis for the CSAPR Update, that all highly cost-effective emission reductions have already been implemented through those budgets. *Id*. In addition, recent data indicate that these EGUs are consistently operating their SCRs throughout the ozone season. *Id*.

Likewise, EPA reasonably proposes to determine that all highly cost-effective emission reductions have been implemented through the CSAPR Update for the four EGUs identified in

[15] *See id.* at 26,679 n.46 (listing these EGUs).

the Maryland petition that are equipped with selective non-catalytic reduction ("SNCR") post-combustion NOx emission control equipment.[16] *Id*. at 26,680. As EPA notes in the Proposed Action, the Agency determined in the CSAPR Update that requiring EGUs to turn on idled SNCR equipment[17] was not highly cost-effective because the cost-per-ton threshold that would include turning on idled SNCR equipment would yield few tons of emission reductions (and, concomitantly, little ozone air quality improvement) beyond those resulting from use of the lower cost-per-ton threshold that EPA selected as the basis for the CSAPR Update emission budgets. *Id*. Maryland failed to provide new information that refutes EPA's determination regarding SNCR. *Id*.

2. EPA's Analysis of Delaware's Petitions

EPA begins its analysis of Delaware's petitions by examining the threshold questions of whether there is an ozone air quality problem in Delaware with respect to the 2008 or the 2015 ozone NAAQS and whether the states in which the sources identified in Delaware's petitions are located are linked to any such problem. EPA observes that the modeling conducted for the CSAPR Update did not link any states—including the two states (Pennsylvania and West Virginia) in which are located the sources identified in Delaware's petitions—to any air quality problem in Delaware with respect to the 2008 ozone NAAQS because no such problem was identified. *Id*. at 26,678. EPA also reviewed Delaware's 2014-2016 ozone design values ("DVs") and determined that no Delaware receptors violated the 2008 NAAQS during that period. *Id*. EPA also used the CSAPR Update modeling and 2014-2016 DVs to examine whether an air quality problem exists in Delaware with respect to the 2015 ozone NAAQS. The

[16] Two of these four EGUs are located at Cambria Cogen in Pennsylvania, and the other two are at Grant Town Power Plant in West Virginia. *See id.* at 26,680.

[17] As EPA notes, individual sources may choose to turn on idled SNCR equipment as a method of complying with the CSAPR Update. *Id*.

CSAPR Update modeling identified one Delaware receptor, located in Sussex County, that was projected to have a maximum 2017 DV above the 2015 ozone NAAQS, and 2014-2016 DVs indicate that two Delaware receptors may exceed that NAAQS based on monitor data from that historical three-year period. *Id*. However, EPA's most recent ozone air quality modeling, released in October 2017, identified no Delaware receptors projected to have nonattainment or maintenance problems with respect to the 2015 NAAQS in the relevant future analytic year (2023). *Id*.

Even though EPA identified no pertinent linkages with respect to either ozone NAAQS, EPA examined whether highly cost-effective NOx emission reductions not already in effect are available from the EGUs named in Delaware's petitions. Three of the four sources those petitions identify—Conemaugh, Harrison, and Homer City—are equipped with SCRs, and each of the states where these sources are located (*i.e.*, Pennsylvania and West Virginia) are included in the ozone-season NOx emission control program established by the CSAPR Update. *Id*. at 26,679. EPA reasonably proposes to determine, as it does in connection with the Maryland petition discussed above, that all highly cost-effective emission reductions have been implemented through the ozone-season NOx emission budgets imposed by the CSAPR Update. *Id*. And although the CSAPR Update addressed the 2008 ozone NAAQS, the evaluation of available cost-effective emission reductions that EPA conducted in the CSAPR Update rulemaking applies equally to the 2015 ozone NAAQS, for reasons EPA discusses. *See id*. Moreover, although Delaware's petitions allege that the named EGUs are not operating their SCRs continuously or efficiently, recent information reflecting implementation of the CSAPR Update during the 2017 ozone season indicates these EGUs are in fact operating their SCRs consistently throughout the ozone season. *Id*. In addition, the only source identified by

Delaware's petitions that does not have SCR equipment—Brunner Island—installed a natural gas pipeline connection before the 2017 ozone season and operated primarily by combusting natural gas during that ozone season. *Id*. at 26,680. This operational change greatly reduced Brunner Island's actual ozone-season NOx emissions (from 3,765 tons in 2016 to 877 tons in 2017) and its ozone-season NOx emission rate (from 0.370 lb/mmBtu in 2016 to 0.090 lb/mmBtu in 2017). *Id*. EPA expects that Brunner Island will, for economic reasons, continue to burn primarily natural gas during ozone seasons, for reasons the Agency explains in detail, *see id.* at 26,681, and "no additional feasible and highly cost-effective NOx emissions reductions available at Brunner Island have been identified," *id*. at 26,680.

In light of the deficiencies in and the technical and legal inadequacy of Maryland and Delaware's section 126 petitions, and based further on the results of EPA's independent analysis, EPA properly proposes to conclude that no basis exists for any action on those petitions other than denial of the petitions.

IV. Conclusion

For the foregoing reasons, and those stated in the Proposed Action, EPA should make final its proposed denial of the section 126 petitions filed by Maryland and Delaware.

Attachment

Duke Energy Facilities

Power Plants (/our-company/about-us/power-plants)

IN THIS SECTION

East Bend Station

Capacity: 648 megawatts
Location: Boone County, Kentucky
Commercial Date: 1981
Status: Operating

East Bend Station is a 648-megawatt, single turbine plant located near Rabbit Hash (Boone County), Ky. The plant's sulfur dioxide scrubber was upgraded in 2005.

Plant Happenings

Information included in recent neighbor updates, along with work and progress at the site.

DATE	TITLE

Power Plants (/our-company/about-us/power-plants)

IN THIS SECTION

Gibson Station

Capacity: 3,145 megawatts
Location: Gibson County, Indiana
Commercial Date: 1976
Status: Operating

Gibson Station is Duke Energy's largest power plant. It is a five-unit facility that was built between 1976 and 1982. Unit 5 is co-owned by Wabash Valley Power Association and Indiana Municipal Power Agency. All five units have sulfur dioxide scrubbers.

The plant site features a 160-acre natural wetland wildlife habitat and recreation area.

Plant Happenings

Information included in recent neighbor updates, along with work and progress at the site.

FirstEnergy Corp.
Facilities

Bruce Mansfield Plant

The plant is located in Shippingport, Pennsylvania, along the Ohio River, approximately 25 miles northwest of Pittsburgh. The site covers 473 acres.

Facts At A Glance

- Bruce Mansfield is FirstEnergy's largest coal-fired power plant.
- Three coal-fired units produce 2,490 megawatts (MW) of electricity.
- Unit 1, online in 1976, generates 830 MW; Unit 2, online in 1977, generates 830 MW; and Unit 3, online in 1980, generates 830 MW.
- At full capacity, the plant's generating units can produce 59-million kilowatt-hours of electricity daily.
- The plant uses more than seven million tons of coal annually.
- The Bruce Mansfield Plant employs approximately 350 people.
- The plant pays approximately $1.5 million annually in property taxes.

Environmental Measures

The Bruce Mansfield Plant is a recognized showplace for environmental technology. More than one out of every three dollars spent to build the $1.4 billion facility was spent on environmental protection.

One out of three employees operates pollution control equipment. Most recently, the plant was updated to comply with the U.S. Environmental Protection Agency's Mercury and Air Toxics Standards (MATS).

The plant is also equipped with full-scale air quality control systems designed to remove virtually all particulates and 95% of the sulfur dioxide from boiler flue gases.

Continued on back

Environmental Measures *(continued)*

Units 1 & 2 are equipped with massive ductwork "scrubber trains"– large enough for a tractor-trailer to pass through – located between the boilers and the 950-foot chimney. Scrubbers have been a part of the plant since its construction.

Unit 3 is equipped with a precipitator/absorber system – four electrostatic precipitators, four induced draft fans, five parallel absorber modules and a 600-foot chimney.

Units 1, 2 & 3 are equipped with Selective Catalytic Reduction (SCR) systems for removal of nitrogen oxides from the flue gases. The SCR is a large vessel that transforms nitrogen oxides into nitrogen – which becomes part of the ambient air – and water.

The air quality control systems require about 150,000 tons of lime per unit each year, or one ton of lime for every 11 tons of coal. As a result, more than 400,000 tons of sulfur dioxide are removed from plant emissions each year.

The coal and lime needs for the Bruce Mansfield Plant are handled through a docking facility located on the Ohio River, the largest such inland facility in the U.S.

Rail unloading capacity is available for coal and aqueous ammonia delivery, which is used in the SCR process.

At full capacity, each unit's air quality control system can produce up to four million gallons of scrubber slurry daily.

A separate pollution control system is used to dispose of this slurry. It includes a treatment and pumping facility at the plant site, seven miles of underground pipeline and a 1,300-acre disposal site, complete with the largest earth and rock fill embankment dam in the eastern U.S.

The plant uses more than 70 million gallons of water a day. Water from the Ohio River is returned in a condition that is equal to or better than when it was withdrawn.

Three 410-foot natural draft cooling towers reduce the temperature of approximately 310,000 gallons of water per minute by 27 degrees. A plume of water vapor leaves the top of the tower while cooled water collects at the base where it is mixed with water pumped from the Ohio River to make up for evaporation.

Reuse/Recycling Activities

Forced Oxidation Gypsum Plant

The scrubber system at the Bruce Mansfield Plant creates a byproduct called calcium sulfite, which is normally disposed of in a landfill. FirstEnergy developed a process that converts that byproduct into gypsum, which is then used in a nearby factory to produce drywall. Nearly half a million tons of gypsum is sent to the wallboard plant each year, which can be made into enough drywall for 70,000 new homes.

The recycling process is called Forced Oxidation Gypsum, or FOG. Launched in 1999, the FOG plant, a separate building on the Bruce Mansfield property, is the only one like it in the world. Once the calcium sulfite is transformed into gypsum, an enclosed conveyer belt transports it to a National Gypsum Company drywall production facility across the street.

The technology benefits FirstEnergy in two ways: the company generates additional revenue by selling the gypsum and it reduces disposal costs. National Gypsum benefits by buying a raw material at reduced costs and without shipping expenses. And, it benefits the environment by lowering the impact on landfills and reducing further need to mine gypsum from the earth.

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Produced by FirstEnergy's Communications & Marketing Department

Harrison Power Station

Harrison Power Station is located on 110 acres of a 1,400-acre site in Haywood, West Virginia, along the West Fork River.

Facts At A Glance

- Three coal-fired units produce a total of 1,984 MW of electricity.
- Unit 1 went online in 1972. Unit 2 went online in 1973. Unit 3 went online in 1974.
- At full capacity, the plant's generating units can produce over 47 million kilowatt-hours of electricity daily.
- The plant uses more than five million tons of coal annually.
- Harrison Power Station employs approximately 230 people.
- The plant pays approximately $5 million annually in property taxes.

Environmental Measures

Harrison Power Station is one of the largest and cleanest coal-fired generating facilities in the nation.

The plant has invested nearly $1 billion dollars on its environmental-control systems.

All three units are equipped with massive scrubber modules located between the boilers and the 1,000-foot chimney that remove more than 98 percent of the sulfur dioxide emissions. The scrubbers have been a part of the plant since 1995.

Continued on back

All three units are also equipped with Selective Catalytic Reduction (SCR) systems for removal of nitrogen oxides from the flue gases. The SCR transforms nitrogen oxides into nitrogen, which becomes part of the ambient air and water. These systems remove at least 90 percent of nitrogen oxide in the coal burned.

Two hyperbolic cooling towers reduce the temperature of approximately 300,000 gallons of water per minute. A plume of water vapor leaves the top of the tower while cooled water collects at the base where it is mixed with water pumped from the West Fork River to make up for evaporation.

Pleasants Power Station

Pleasants Power Station is located in Willow Island, West Virginia, along the Ohio River.

Facts At A Glance

- Two 650 megawatt (MW) coal-fired units produce 1,300 MW of electricity.
- Unit 1 went online in 1979. Unit 2 went online in 1980.
- At full capacity, the plant's generating units can produce more than 31 million kilowatt-hours of electricity daily.
- The plant uses more than 3.4 million tons of coal annually.
- Pleasants Power Station employs approximately 190 people.
- The plant pays approximately $5 million annually in property taxes.

Environmental Measures

The plant has invested nearly $650 million on its environmental-control systems.

The station is equipped with massive scrubber modules located between the boilers and the 640-foot chimney. This system removes 98 percent of the sulfur-dioxide emissions. The scrubbers were installed when the plant was built, but were upgraded in 2007.

Continued on back

The station is also equipped with Selective Catalytic Reduction (SCR) systems for removal of nitrogen oxides from the flue gases. The SCR transforms nitrogen oxides into nitrogen, which becomes part of the ambient air and water. These systems remove at least 90 percent of nitrogen oxide in the coal burned.

Two hyperbolic cooling towers reduce the temperature of approximately 277,000 gallons of water per minute. A plume of water vapor leaves the top of the tower while cooled water collects at the base where it is mixed with water pumped from the Ohio River to make up for evaporation.

Ohio Valley Electric Corporation Facilities

Clifty Creek Generating Station

Built in the early 1950's, Clifty Creek is situated on 820 acres along the Ohio River in Jefferson County, Indiana. All six of its generating units are rated at 217.26 megawatts (MW), for a total capacity of 1,303.56 MW – enough to power a city of one million people. When they began operation, the Clifty Creek Station, along with its twin, the Kyger Creek Station, were the largest power plants ever built by private industry.

The Clifty Creek Station was built to provide power to the Atomic Energy Commission's gaseous diffusion plant sited at Piketon, Ohio. The plant's electricity output helped power that facility until the supply agreement ended in 2003. Since then, power produced by Clifty Creek has been supplied to its sponsoring companies, according to their ownership share.

The plant holds records for efficiency and has an exemplary record for availability. During that first year of operation, Clifty Creek, with a heat rate (the measure of unit efficiency) of 9,143 BTUs per kilowatt-hour of generation, was the nation's second most efficient plant, behind only the Kyger Creek Station. For much of its life, the plant has experienced availability in excess of 90 percent. Clifty Creek continues to perform well as it ages, with availability hovering near 85 percent. 2015 will mark the plant's 60th anniversary.

Quick Facts about Clifty Creek

- Location: Madison, Indiana
- Capacity: 1,303.56 MW
- Stacks: 3 (2 dormant (Pre-FGD) as of May 2013)
  - Height - FGD: 982', Pre-FGD: 983'
  - Diameter - FGD: 80', Pre-FGD: 77' at base, 34' at top
  - Date Built - FGD: 2008, Pre-FGD: late 1970s
- Coal yard storage capacity: In excess of 1 million tons (approximately 83 days)
- Average daily coal use: 12,000 tons
- Boiler capacity: 52,000 gallons of water through 150 miles of boiler tubing per unit
- Main steam pressure: 2000 psi
- Main steam temperature: 1050°F
- Cooling water use: Cycles 1.4 billion gallons through the plant each day
- Number of employees: 351
- Annual payroll: Approximately $27 million
- Annual taxes (real estate, personal property): >$3 million

How We Generate Electricity

Coal arrives by barge and is stored in the plant's coal yard. The coal burned at Clifty Creek is from the Illinois Coal Basin. Conveyor belts carry the coal from the yard into the plant where pulverizers grind the coal into a fine, talcum powder-like consistency. The powdered coal is injected into the boilers where it burns at high temperatures turning water circulating in the boilers into steam.

The steam is then directed into the turbines where it turns blades (much like wind turning a windmill). The spinning turbine drives a generator that produces electricity.

Because electricity cannot be stored, it is generated the instant a customer needs it. The generators produce electricity at 15,500 volts. Transformers outside the plant step up the voltage to 345,000 volts so that it can be transmitted efficiently to customers.

If you would like to read about Clifty Creek's Emission Controls click here .

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OVEC/IKEC News Releases

- News Release 3-25-13 Clifty Creek FGD
- News Release 8-17-12 FERC Order 1000 Extension Filing
- News Release 10-28-11 Kyger Creek FGD
- News Release 12-15-10 Clifty Creek Scrubbers

Kyger Creek Generating Station

Built in the early 1950's, Kyger Creek is situated on 1,775 acres along the Ohio River in Gallia County, Ohio. All five of its generating units are rated at 217 megawatts (MW), for a total capacity of 1,086.3 MW – enough to power a city of one million people. When they began operation, the Kyger Creek Station, along with its twin, the Clifty Creek Station, were the largest power plants ever built by private industry.

The Kyger Creek Station was built to provide power to the Atomic Energy Commission's gaseous diffusion plant sited at Piketon, Ohio. The plant's electricity output helped power that facility until the supply agreement ended in 2003. Since then, power produced by Kyger Creek has been supplied to its sponsoring companies, according to their ownership share.

The plant holds records for efficiency and has an exemplary record for availability. During that first year of operation, Kyger Creek, with a heat rate (the measure of unit efficiency) of 9,110 BTUs per kilowatt-hour of generation, was the nation's most efficient plant. For much of its life, the plant has experienced availability in excess of 90 percent. Kyger Creek continues to perform well as it ages, with availability hovering near 85 percent. Kyger Creek will celebrate its 60th anniversary in 2015.

Quick Facts about Kyger Creek

- Location: Cheshire, Ohio
- Capacity: 1,086.3 MW
- Stacks: 2 (1 dormant (Pre-FGD) as of January 2012)
    - Height - FGD: 838', Pre-FGD: 1000'
- Coal yard storage capacity: In excess of 600,000 tons (approximately 63 days)
- Average daily coal use: 9,500 tons
- Boiler capacity: 52,000 gallons of water through 150 miles of boiler tubing per unit
- Main steam pressure: 2000 psi
- Main steam temperature: 1050°F
- Cooling water use: Cycles 1.1 billion gallons through the plant each day
- Number of employees: 306
- Annual payroll: Approximately $24 million
- Annual taxes (real estate, personal property): >$2 million

How We Generate Electricity

Coal arrives by barge and is stored in the plant's coal yard. The coal burned at Kyger Creek Station is from eastern sources throughout West Virginia, Ohio, and Kentucky. Conveyor belts carry the coal from the yard into the plant where pulverizers grind the coal into a fine, talcum powder-like consistency. The powdered coal is injected into the boilers where it burns at high temperatures turning water circulating in the boilers into steam.

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Tennessee Valley Authority Facilities

Tennessee Valley Authority

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Paradise Fossil Plant

TVA's Paradise Fossil Plant is located in western Kentucky on the Green River near the village of Paradise. The plant has three units and three large natural-draft cooling towers. Paradise is TVA's only coal-fired plant with cooling towers, which are more usually are seen at nuclear plants.

Units 1 and 2 went on-line in 1963, each with a generation capacity of 704 megawatts. At the time, they were the largest operating units in the world. A third unit became operational in 1970, with a capacity of 1,150 MW. In 1985, a barge-unloading facility was added so that coal could be delivered by barge as well as by train and truck.

The plant produces more than 14 billion kilowatt hours of electricity each year, enough to supply more than 950,000 homes.

Paradise units 1 and 2 were retired in 2017. Unit 3 will continue operation. TVA is invested approximately $1 billion to build a gas-fired plant that to replace Paradise units 1 and 2. The new combined cycle plant was opened in April of 2017.

Toxics Release Inventory

TVA is required to report annually to the Environmental Protection Agency on the amounts of chemicals released by its fossil-fuel plants. Check here for the latest data on Paradise.

Emissions Data

TVA monitors other emissions at its fossil plants, including sulfur dioxide, nitrogen oxide, carbon dioxide and mercury. Check here for the latest data on Paradise.

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