

**MEMORANDUM FOR ECOS
CONCERNING
CLEAN AIR ACT 111(d) ISSUES**

February 22, 2014

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Memorandum For ECOS Concerning Clean Air Act 111(d) Issues

In May 2013 the American College of Environmental Lawyers (ACOEL) entered into a Memorandum of Understanding with the Environmental Council of the States (ECOS) to facilitate a relationship pursuant to which members of ACOEL will provide assistance on issues of interest to ECOS. This memorandum is in response to ECOS' request for a review of the history and background of section 111(d) of the Act.

As part of his June 25, 2013 Climate Action Plan announcement, the President directed EPA to use existing Clean Air Act authority to develop greenhouse gas emissions (GHG) standards for new and existing power plants. EPA has announced that it plans to move forward under section 111 of the Act for both new and existing sources. EPA has used section 111(d) to address existing sources in the rulemakings summarized in part I.B. ECOS' members have an interest in how section 111(d) works, its history, the states' role in implementing section 111(d) guidelines, and how section 111(d) might be used by EPA to address existing sources of GHG emissions.

The memorandum is intended to serve as background and context, and does not attempt to address policy issues, e.g. what actions EPA or the States should undertake pursuant to section 111(d). It also does not analyze the "system-based" approach that EPA has indicated that it is contemplating for regulation of greenhouse gases from the power plant sector.¹ Nor does it attempt to address other issues not identified by ECOS that might be the subject of further discussion. The undersigned authors are a diverse group of ACOEL members from academia, private law firms, and public interest groups. This memorandum is the product of a team effort and does not necessarily reflect the views of any individual attorney.

I. HISTORY, REGULATIONS AND GUIDANCE

A. Overview of the History of Section 111(d)

Section 111(d) was introduced in the 1970 Clean Air Act ("CAA" or "Act"). It originally provided (in relevant part) that:

The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by section 110 under which each State shall submit to the Administrator a plan which (A) establishes emission standards for any existing source for any air

¹ See Overview Presentation of Clean Air Act Section 111, available at <http://www2.epa.gov/carbon-pollution-standards/what-epa-doing>.

pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 108(a) or 112(b)(1)(A) but (ii) to which a standard of performance under subsection [111(b)] would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such emission standards.²

Section 111(d) remained largely unchanged for two decades except for amendments adopted in 1977 that replaced the term “emission standards” with “standards of performance” and allowed states to consider the remaining useful lives of sources in applying standards of performance.³ From 1970 to 1990, EPA interpreted section 111(d) to authorize the regulation of air pollutants that were not regulated as either (a) criteria pollutants regulated under the national ambient air quality standards (“NAAQS”) program under section 108, or (b) hazardous air pollutants (“HAPs”) regulated under section 112.

In the 1990 Amendments to the Clean Air Act, Congress deleted section 112(b)(1)(A), the provision which section 111(d) had referenced, and revised the cross-reference in section 111(d) to section 112. The House of Representatives and the Senate each passed different amendments to section 111(d)(1). The House language appeared in section 108 of the 1990 Amendments, entitled “Miscellaneous Guidance.”⁴ The Senate provision appeared in section 302, under the heading “Conforming Amendments.”⁵

The conference committee failed to reconcile the House and Senate amendments, and the final Public Law adopted by Congress, signed by President George H.W. Bush and printed in the Statutes at Large contained *both* provisions.

Specifically:

- The **House Amendment**, found in the Statutes at Large under section 108, “Miscellaneous Guidance,” stated that, “Section 111(d)(1)(A)(i) of [the Act] is amended by striking “or 112(b)(1)(A)” and inserting “or emitted from a source category which is regulated under section 112.”⁶
- The **Senate Amendment**, located 107 pages later in the Statutes at Large under the “Conforming Amendments” section immediately following the changes to section 112, stated

² Clean Air Amendments of 1970, Pub. L. No. 91-604, § 4(a), 84 Stat. 1676, 1684.

³ See Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 109(b)(1), 91 Stat. 685, 699.

⁴ Clean Air Act Amendments, Pub. L. No. 101-549, § 108(g), 104 Stat. 2399, 2467 (1990).

⁵ *Id.* § 302(a), at 2574.

⁶ *Id.* § 108(g), at 2467.

that, “Section 111(d)(1) of [the Act] is amended by striking “112(b)(1)(A)” and inserting in lieu thereof “112(b).”⁷

There is little legislative history of these two amendments and much disagreement about what that “history” means. Some cite a footnote in the committee print of the law, which states that “[t]he amendments . . . appear to be duplicative; both, in different language, change the reference to section 112.”⁸ Others disagree with that assessment. EPA discussed the legislative history in the Clean Air Mercury Rule in 2005, and that discussion may provide a useful reference.⁹

The codification in the U.S. Code contains only the House version of the two amendments but the Statutes at Large includes both, and it is well-settled that the Statutes at Large governs, not the U.S. Code.¹⁰ There is disagreement among attorneys concerning how these two amendments should be interpreted, or whether one or the other should prevail.

EPA’s interpretation of the differing amendments was raised in litigation but the court resolved the case without reaching the question.¹¹ A number of states participated in that litigation both as petitioners and as respondent intervenors. The respondent intervenor states supported EPA’s interpretation, arguing that “EPA developed a reasoned way to reconcile the conflicting language and the Court should defer to EPA’s interpretation.”¹² The state petitioners

⁷ *Id.* § 302(a), at 2574.

⁸ CAA § 111(d)(1), *reprinted in* 1 COMM. ON ENV’T & PUBLIC WORKS, A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1990 at 46 n.1 (1993). The same footnote in the most recent committee print (2004) states that “[t]he amendments . . . appear to be duplicative or conflicting; both, in different language, change the reference to section 112.” CAA § 111(d)(1), *reprinted in* 1 COMM. ON ENV’T & PUBLIC WORKS, A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1990 at 47 n.1 (1993), *available at* <http://www.epw.senate.gov/envlaws/cleanair.pdf>.

⁹ EPA, Revision of December 2000 Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units and the Removal of Coal- and Oil-Fired Electric Utility Steam Generating Units from the Section 112(c) List; Final Rule, 70 Fed. Reg. 15,994, 16,030-32 (Mar. 29, 2005).

¹⁰ 1 U.S.C. § 112 (“The United States Statutes at Large shall be legal evidence of laws . . . in all the courts of the United States, the several States, and the Territories and insular possessions of the United States.”); *see also id.* § 204(a) (“The matter set forth in the edition of the Code of Laws of the United States current at any time shall . . . establish prima facie the laws of the United States”); *Stephan v. United States*, 319 U.S. 423, 426 (1943) (*per curiam*) (“[T]he Code establishes ‘prima facie’ the laws of the United States. But the very meaning of ‘prima facie’ is that the Code cannot prevail over the Statutes at Large when the two are inconsistent.”). In certain cases Congress adopts the Code itself, which does make the Code authoritative, but Congress has not done so with Title 42. *See* U.S. House of Representatives, Office of Law Revision Counsel, *available at* <http://uscode.house.gov/about/info.shtml> (containing list of U.S. Code titles that have been enacted into positive law).

¹¹ *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008), *cert. dismissed*, 555 U.S. 1162 (2009), *and cert. denied*, 555 U.S. 1169 (2009).

¹² Final Joint Brief of State Respondent-Intervenors, Industry Respondent-Intervenors, and State Amicus at 25, *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008) (No. 05-1097). The respondent-intervenor states included North Dakota, Alabama, Indiana, Nebraska, South Dakota, and Wyoming. The West Virginia Department of Environmental Protection also signed the brief as an amicus.

in the case disagreed with EPA's interpretation, arguing that the amendments maintained the prohibition on regulating under 111(d) pollutants regulated under section 112.¹³

More recently, some attorneys have argued that the amendments preclude EPA from regulating carbon dioxide emissions from existing EGUs under section 111(d).¹⁴ Others have defended EPA's authority to do so.¹⁵ It appears likely that this issue will be litigated. This paper does not reprise or take a position on those arguments except to note that under the familiar *Chevron* test, a party seeking to overturn EPA's interpretation of the amendments would need to demonstrate that the meaning of the amendments was not ambiguous or that EPA's interpretation allowing regulation of non-hazardous air pollutants under section 111(d) was not reasonable.¹⁶

¹³ Final Brief of Government Petitioners at 27-28, *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008) (No. 05-1097). The Government Petitioners included the states of New Jersey, California, Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, Michigan Department of Environmental Quality, Minnesota, New Hampshire, New Mexico, New York, Pennsylvania Department of Environmental Protection, Rhode Island, Vermont, and Wisconsin.

¹⁴ See, e.g., Dawn Reeves, *Bush Counsel Says EPA Lacks Power To Set GHG NSPS at Existing Plants*, Inside EPA Clean Energy Report, (Dec. 13, 2012) (quoting former George H.W. Bush White House Counsel C. Boyden Gray as saying "111(d) explicitly cannot apply to source categories regulated under 112"); Roger Martella, E&ETV On Point Interview (Mar. 20, 2013), available at <http://www.eenews.net/tv/videos/1656/transcript> (quoting former EPA General Counsel as saying "if you look at . . . section 111(d) . . . what it says is you can apply . . . these standards to existing sources, unless those sources are subject to . . . section 112"); William J. Haun, *The Clean Air Act as an Obstacle to the Environmental Protection Agency's Anticipated Attempt To Regulate Greenhouse Gas Emissions from Existing Power Plants*, Federalist Society Paper, at 5 (March 2013), available at <http://www.fed-soc.org/publications/detail/the-clean-air-act-as-an-obstacle-to-the-environmental-protection-agencys-anticipated-attempt-to-regulate-greenhouse-gas-emissions-from-existing-power-plants> ("In amending Section 111(d) in the Clean Air Act Amendments of 1990, Congress unambiguously provided that the subsection could not be used to set standards for industries that are also regulated under the Clean Air Act's Section 112 air toxics program.").

¹⁵ See, e.g., Natural Resources Defense Council, R: 12-11-A, *Closing the Power Plant Carbon Pollution Loophole: Smart Ways the Clean Air Act Can Clean Up America's Biggest Climate Polluters*, at 83 n.25 (March 2013), available at www.nrdc.org/air/pollution-standards/files/pollution-standards-report.pdf ("If the pollutant is covered by a national ambient air quality standard (NAAQS) set under Section 109, then existing sources are controlled through state implementation plan (SIPs) under Section 110. If the pollutant is a hazardous air pollutant, then existing sources are controlled under section 112. Because carbon dioxide and other greenhouse gases are neither NAAQS pollutants nor hazardous air pollutants, the existing source requirements of Section 111(d) apply."); Institute for Policy Integrity, *Petition for Rulemakings and Call for Information under Section 115, Title VI, Section 111, and Title II of the Clean Air Act to Regulate Greenhouse Gas Emissions*, at 23 (Feb. 19, 2013), available at <http://articles.law360.s3.amazonaws.com/0416000/416356/Policy%20Integrity%20Omnibus%20GHG%20Petition%20under%20CAA.pdf> ("Section 111(d) stipulates that EPA shall guide states on issuing performance standards for existing sources of pollutants not regulated under Section 108 . . . or 112 . . . and that would otherwise be regulated under Section 111 if they were emitted by new sources. . . . Greenhouse gases are not currently regulated under Sections 108 or 112.").

¹⁶ See *Chevron, U.S.A., Inc. v. NRDC, Inc.*, 467 U.S. 837, 843 (1984); see also *City of Arlington v. FCC*, 133 S. Ct. 1863, 1868 (2013) (holding that *Chevron* deference applies to an agency's permissible interpretation about the scope of its own authority).

B. Overview of History of Use of Section 111(d) by EPA.

Since 1977, EPA has promulgated emission guidelines under section 111(d) of the Clean Air Act seven times.¹⁷ On six other occasions, EPA has promulgated rules that implement section 129 of the Clean Air Act. Section 129 directs EPA to establish section 111(d) guidelines and also emission limitations and other requirements applicable to existing solid waste incineration units. The following is a brief overview of each of the instances in which EPA has promulgated such emission guidelines.

1. Section 111(d) Guidelines Promulgated in Conjunction with Section 129 of the Clean Air Act

Six of the thirteen times that EPA promulgated emission guidelines under section 111(d) it has done so in conjunction with the implementation of section 129 of the Act. Congress adopted section 129 as part of the 1990 Clean Air Act Amendments to compel the Agency to regulate new and existing solid waste incinerator units under section 111. Section 129 requires EPA to establish guidelines under section 111(d) and section 129 together with emission limitations and other requirements under section 129 applicable to existing solid waste incineration units. Section 129 sets forth several specific requirements applicable to both new and existing solid waste incineration units (which are to be included in the guidelines for existing units), and commands EPA to set emission limits for certain pollutants (e.g., mercury) the emissions of which from source categories regulated under section 112 currently cannot be regulated under section 111(d).

Each of the following proceedings to set section 111(d) guidelines was mandated by and carried out in compliance with Clean Air Act Section 129.

- **Subpart Cb** (large municipal waste combustors constructed on or before September 20, 1994) - §§ 60.30b-60.39b
 - 56 Fed. Reg. 5514 (Feb. 11, 1991) (establishing Subpart Ca); withdrawn and superseded by 60 Fed. Reg. 65,387 (Dec. 19, 1995) (establishing Subpart Cb); amendments published at 62 Fed. Reg. 45,116 (Aug. 25, 1997), 62 Fed. Reg. 45,124 (Aug. 25, 1997), 66 Fed. Reg. 36,473 (July 12, 2001), 66 Fed. Reg. 57,824 (Nov. 16, 2001), and 71 Fed. Reg. 27,324 (May 10, 2006)
 - State plans were due within 12 months, with source compliance deadline 12 months after EPA approval of state plan (with option to extend deadline to three years in certain circumstances, provided the state plan includes measurable and enforceable incremental steps of progress as well as a date-certain closure agreement)

¹⁷ Although EPA's regulations provide that emission guidelines are to be promulgated in Subpart C of Part 60, 40 C.F.R. § 60.22(c), the Agency has in one of those instances promulgated emission guidelines elsewhere in Part 60, and in three instances never codified them at all under Part 60.

- Contains requirements for operating practices, and operator training and certification, performance testing, and reporting and recordkeeping
- Allows states to create a NO_x trading or averaging program
- **Subpart Ce** (hospital/medical/infectious waste incinerators) - §§ 60.30e-60.39e
 - 62 Fed. Reg. 48,348 (Sept. 15, 1997); amendments published at 74 Fed. Reg. 51,368 (Oct. 6, 2009) and 76 Fed. Reg. 18,407 (Apr. 4, 2011)
 - State plans were due within 12 months, with source compliance deadline 12 months after EPA approval of state plan (with option to extend deadline to three years in certain circumstances, provided the state plan includes measurable and enforceable incremental steps of progress)
 - Subcategorized by size and date of construction or modification
 - Stipulates that source modifications made solely to comply with emission guideline do not constitute a modification or reconstruction subjecting a source to new source performance standards under section 111(b)
 - Contains requirements for operator training and qualification, equipment inspection, performance testing, monitoring, and reporting and recordkeeping,
 - Requires waste management planning as a pollution prevention measure
- **Subpart BBBB** (small municipal waste combustion units constructed on or before August 30, 1999) - §§ 60.1500-60.1940
 - 65 Fed. Reg. 76,738 (Dec. 6, 2000)
 - State plans were due within 12 months, with state ability to set source compliance deadline no later than 3 years after EPA approval of state plan (with incremental requirements if compliance date is longer than 1 year)
 - Subcategorized by plant capacity and type; exemption for smaller combustors and certain types of facilities
 - Stipulates that source modifications made solely to comply with emission guideline do not constitute a modification or reconstruction subjecting a source to new source performance standards under section 111(b)
 - State plans not only had to be as protective as the Model Rule, but also had to include the other components of the Model Rule, such as operator training and certification, operating practice, monitoring, recordkeeping, and reporting

- **Subpart DDDD** (commercial and industrial solid waste incineration units that commenced construction on or before November 30, 1999) - §§ 60.2500-60.2875
 - 65 Fed. Reg. 75,338 (Dec. 1, 2000); amendments published at 70 Fed. Reg. 55,568 (Sept. 22, 2005), 76 Fed. Reg. 15,704 (Mar. 21, 2011), and 78 Fed. Reg. 9,112 (Feb. 7, 2013)
 - State plans were due within 12 months, with state ability to set source compliance deadline no later than 3 years after EPA approval of state plan (with incremental requirements if compliance date is longer than 1 year)
 - Subcategorized by type; exemption for certain types of facilities
 - Stipulates that source modifications made solely to comply with emission guideline do not constitute a modification or reconstruction subjecting a source to new source performance standards under section 111(b)
 - State plans not only had to be as protective as the Model Rule, but also had to include the other components of the Model Rule, such as operator training and qualification, performance testing, monitoring, recordkeeping, and reporting
 - Requires waste management planning to reduce or eliminate toxic emissions from incinerated waste

- **Subpart FFFF** (other solid waste incineration units that commenced construction on or before December 9, 2004) - §§ 60.2980-60.3078
 - 70 Fed. Reg. 74,870 (Dec. 16, 2005); amendment published at 71 Fed. Reg. 67,802 (Nov. 24, 2006)
 - State plans were due within 12 months, with state ability to set source compliance deadline no later than 3 years after EPA approval of state plan
 - Subcategorized by type; exemption for certain facilities that meet conditions
 - Stipulates that source modifications made solely to comply with emission guideline do not constitute a modification or reconstruction subjecting a source to new source performance standards under section 111(b)
 - State plans not only had to be as protective as the Model Rule, but also had to include the other components of the Model Rule, such as operator training and qualification, performance testing, monitoring, recordkeeping, and reporting
 - Requires waste management planning to reduce or eliminate toxic emissions from incinerated waste

- **Subpart MMMM** (existing sewage sludge incineration units) - §§ 60.5000-60.5250
 - 76 Fed. Reg. 15,372 (Mar. 21, 2011)
 - State plans were due within 12 months, with state ability to set source compliance deadline no later than 3 years after EPA approval of state plan (with incremental requirements if compliance date is longer than 1 year)
 - Subcategorized by plant type; exemption for certain types of facilities
 - Stipulates that source modifications made solely to comply with emission guideline do not constitute a modification or reconstruction subjecting a source to new source performance standards under section 111(b)
 - State plans not only had to be as protective as the Model Rule, but also had to include the other components of the Model Rule, such as operator training and qualification, performance testing, monitoring, and recordkeeping and reporting

2. Other Instances In Which EPA Promulgated Section 111(d) Guidelines

EPA set section 111(d) guidelines in seven other instances. As noted below, the emission guidelines were codified in four instances (although one of those four actions was subsequently vacated by the D.C. Circuit and another was withdrawn and superseded by subsequent rulemaking action), and the guidelines were not codified in the remaining three instances.

a. Section 111(d) Guidelines That Were Codified

The following are the instances in which EPA has codified section 111(d) emission guidelines other than in conjunction with implementation of section 129 of the Act. The first three listed guidelines are currently in effect; the fourth was vacated by the D.C. Circuit.

- **Subpart Ca** (large municipal waste combustors) - 40 C.F.R. §§ 60.30a-60.39a
 - 56 Fed. Reg. 5514 (Feb. 11, 1991) withdrawn and superseded by 60 Fed. Reg. 65,387 (Dec. 19, 1995) (establishing Subpart Cb). Subpart Ca is included with the 111(d) guidelines, because although 129 was already law when the 1991 large municipal waste combustors guidelines were promulgated, the agency had to finalize the guidelines pursuant to a consent decree and subsequently revisit them to decide whether they were consistent with 129 (which EPA determined they were not). *See* 56 Fed. Reg. 5514, 5514 (Feb. 11, 1991); 60 Fed. Reg. 65,387, 65,388 (Dec. 19, 1995).

- **Subpart Cc** (municipal solid waste landfills) - §§ 60.30c-60.36c
 - 61 Fed. Reg. 9905 (Mar. 12, 1996); amendments published at 63 Fed. Reg. 32,743 (June 16, 1998), 64 Fed. Reg. 9258 (Feb. 24, 1999), and 65 Fed. Reg. 18,906 (Apr. 10, 2000)
 - State plans were due within 9 months, with source compliance deadline 30 months after certain emissions triggering event
 - Stipulates that source modifications made solely to comply with emission guidelines do not constitute a modification or reconstruction subjecting a source to new source performance standards under section 111(b)
 - Contains requirements for operational standards, monitoring, reporting, and recordkeeping

- **Subpart Cd** (sulfuric acid production units) - §§ 60.30d-60.32d
 - 42 Fed. Reg. 55,796 (Oct. 18, 1977) (promulgating Subpart C (Emission Guidelines and Compliance Times at §§ 60.30-60.34)); 56 Fed. Reg. 5514 (Feb. 11, 1991) (removing §§ 60.32-60.34 and moving guidelines to new Subpart Cb (Emission Guidelines and Compliance Times for Sulfuric Acid Production Units), creating §§ 60.30b-60.32b); 60 Fed. Reg. 65,387 (Dec. 19, 1995) (redesignating Subpart Cb as Cd, creating §§ 60.30d-60.32d)
 - State plans were due within 9 months, with source compliance deadline 17 months after state standard was effective

- **Subpart HHHH** (coal-fired electric utility steam generating units) – subsequently vacated by the D.C. Circuit
 - 70 Fed. Reg. 28,606 (May 18, 2005). After delisting electric generating units from Clean Air Act section 112(c), EPA promulgated the Clean Air Mercury Rule (CAMR). Relying on Clean Air Act sections 111(b) and (d), CAMR established a national mercury emissions cap for new and existing electric generating units based on application of control technology at individual units and allowed trading of emissions allowances among all units
 - CAMR was vacated by the U.S. Court of Appeals for the D.C. Circuit in *New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008).¹⁸ The court held that the initial delisting of coal- and oil-fired electric generating units from the list of sources whose emissions of hazardous air pollutants are regulated under Section 112

¹⁸ EPA subsequently promulgated the Mercury and Air Toxics Standards pursuant to section 112(d). *See* 77 Fed. Reg. 9304 (February 16, 2012).

was unlawful and that therefore EPA could not regulate mercury from those sources under Section 111

b. Section 111(d) Guidelines That Were Never Codified

Three sets of emission guidelines were adopted in the 1970's but never codified. Instead, these were referenced in final *Federal Register* notices as separate guideline documents obtainable at EPA. The three uncodified emission guidelines are the following:

- Phosphate Fertilizer Plants, Final Guideline Document Availability, 42 Fed. Reg. 12,022 (Mar. 1, 1977); Final Guideline Document: Control of Fluoride Emissions from Existing Phosphate Fertilizer Plants, March 1977, Doc. No. EPA-450/2-77-005
- Kraft Pulp Mills; Final Guideline Document; Availability, 44 Fed. Reg. 29,828 (May 22, 1979); Kraft Pulping, "Control of TRS [Total Reduced Sulfur] Emissions from Existing Mills," March 1979, Doc. No. EPA-450/2-78-003b
- Primary Aluminum Plants; Availability of Final Guideline Document, 45 Fed. Reg. 26,294 (Apr. 17, 1980); Primary Aluminum: Guidelines for Control of Fluoride Emissions from Existing Primary Aluminum Plants, December 1979, Doc. No. EPA-450/2-78-049b

C. Overview of Key Definitions in Section 111(a) and Their Application.

Section 111(a) defines seven different terms. Most of these definitions are either straightforward or not relevant to regulation of existing stationary sources. For example, Section 111(a) defines "stationary source," "new source," "existing source," and "modification." It also defines one term – "technological system of continuous emission reduction" – which is not used in Section 111(d). In fact, of the terms defined, only "existing source," "new source," and "standard of performance" specifically appear in Section 111(d).

1. Standard of Performance

Section 111(a)(1) provides:

"standard of performance" means a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.

This definition requires the level of emissions to secure the most reductions "achievable" and be based on a system that – considering cost, nonair health impacts and energy requirements – has been "adequately demonstrated."

2. Application of BSER in Section 111(d) Emission Guidelines

In its Section 111(d) emission guidelines, EPA has used or proposed standards of performance that take a variety of forms. The most common form is an emission-rate limit. For example, this is the approach EPA took in the Section 111(d) rules on phosphate fertilizer plants where Section 8.2 of the Phosphate Fertilizer Guideline sets out fluoride emission guidelines for six different categories and expresses the guidelines as “grams of fluoride (as F) per kilogram of P₂O₅ input to the process.”¹⁹ The emission guidelines for existing kraft pulp mills were set at different levels for different systems and were expressed as a parts per million (ppm) concentration of total reduced sulfur (TRS) on a 12-hour average, except for the smelt dissolving tank for which the guideline was expressed in terms of grams of TRS per kilogram of black liquor solids (dry weight).²⁰ The guidelines for sewage sludge incineration units include emission limits in terms of concentration, as well as visible emissions limitations.²¹ Section 8.1 of the Primary Aluminum Guideline states: “The recommended State fluoride emission guidelines in Section 8.3 are not expressed in terms of emission limitations, but are presented as recommended control technologies that will achieve certain average fluoride control efficiencies when applied as new retrofits to existing plants.”²² EPA allowed states to permit sources to use emission averaging in its 1995 Municipal Solid Waste Combustor emission guidelines.²³

Finally, in the Clean Air Mercury Rule, EPA determined that a cap and trade approach to limiting mercury pollution was the best system of emission reduction for existing coal-fired electric utility generating units.²⁴ The Clean Air Mercury Rule was vacated by the D.C. Circuit on other grounds and the court did not opine on the validity of the cap-and-trade program.²⁵

D. Overview of the Regulations and Guidance Under Section 111(d)(1).

In 1975, EPA promulgated regulations prescribed under Clean Air Act (“CAA”) § 111(d)(1) to “establish procedures” for states to follow in developing and submitting CAA § 111(d) plans.²⁶ Codified as Subpart B of 40 C.F.R. Part 60, §§ 60.20-60.29, “Adoption and

¹⁹ EPA, Final Guideline Document: Control of Fluoride Emissions from Existing Phosphate Fertilizer Plants, EPA-450/2-77-005, at 8-4 (Mar. 1977), *available at* <http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000UNFK.txt>.

²⁰ Kraft Pulp Mills; Final Guidelines Document; Availability, 44 Fed. Reg. 29,828, 29,829 (May 22, 1979).

²¹ 40 C.F.R. §§ 60.5165, 5170, tbls. 2, 3, 4.

²² EPA, Primary Aluminum Guidelines for Control of Fluoride Emissions from Existing Primary Plants, EPA-450/2-78-049b, at 8-1 (Dec. 1979), *available at* <http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=9100SG1P.txt>.

²³ Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources, 60 Fed. Reg. 65,387, 65,402, 65,418 (Dec. 19, 1995) (to be codified at 40 C.F.R. § 60.33b(d)(1)).

²⁴ Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28,606, 28,617 (May 18, 2005).

²⁵ *See New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008), *cert. dismissed*, 555 U.S. 1162 (2009), *and cert. denied*, 555 U.S. 1169 (2009).

²⁶ 40 Fed. Reg. 53,340, 53,340 (Nov. 17, 1975).

Submittal of State Plans for Designated Facilities,” those regulations read today much as they did when first adopted nearly 40 years ago, although there have been some amendments over the years.²⁷ For a full overview of revisions and amendments to 40 C.F.R. Part 60 Subpart B see Appendix A to this section. Section 111(d) plans apply to existing source/pollutant combinations that would be subject to a section 111(b) standard (for pollutants other than NAAQS and, in the view of some, “source categories,” and in the view of others, “pollutants,” regulated under section 112) but for the date of construction, reconstruction, or modification.

In its current form, Subpart B consists of the following regulations:

- 40 C.F.R. § 60.20 Applicability
- 40 C.F.R. § 60.21 Definitions
- 40 C.F.R. § 60.22 Publication of Guideline Documents, Emission Guidelines, and Final Compliance Times
- 40 C.F.R. § 60.23 Adoption and Submittal of State Plans; Public Hearings
- 40 C.F.R. § 60.24 Emission Standards and Compliance Schedules
- 40 C.F.R. § 60.25 Emission Inventories, Source Surveillance, Reports
- 40 C.F.R. § 60.26 Legal Authority
- 40 C.F.R. § 60.27 Actions by the Administrator
- 40 C.F.R. § 60.28 Plan Revisions by the State
- 40 C.F.R. § 60.29 Plan Revisions by the Administrator.

The core elements of these Subpart B regulations are set forth in 40 C.F.R. § 60.22, “Publication of guideline documents, emission guidelines, and final compliance times”; in 40 C.F.R. § 60.24, “Emission standards and compliance schedules”; and in 40 C.F.R. § 60.27,

²⁷ In conjunction with its promulgation of the Clean Air Mercury Rule (“CAMR”) in 2005, EPA amended Subpart B to accommodate the mercury allowance trading program that the Agency was then adopting. Among other things, the definition of “emission standard,” 40 C.F.R. § 60.21(f), was revised to mean a “legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, *establishing an allowance system*, or prescribing equipment specifications for control of air pollution emissions.” 70 Fed. Reg. 28,606, 28,649 (May 18, 2005) (emphasis added to show 2005 revision). Relatedly, EPA revised the first sentence of 40 C.F.R. § 60.24(b)(1) to provide that “[e]mission standards shall *either be based on an allowance system* or prescribe allowable rates of emissions except when it is clearly impracticable.” *Id.* (emphasis added to show 2005 revision). EPA also added to 40 C.F.R. § 60.21 a new paragraph (k), establishing a definition of “allowance system.” *Id.* In *New Jersey v. EPA*, 517 F.3d 574, 583 (D.C. Cir. 2008), the D.C. Circuit vacated CAMR because EPA had not properly removed power plants from the category of sources covered by Section 112 of the Clean Air Act. As an incident to that decision, the court also vacated the regulations that were “promulgated . . . for existing EGUs under section 111(d).” *Id.* However, the Code of Federal Regulations was not revised to reflect the vacatur until 2012. On February 16, 2012, at the same time it promulgated the Mercury and Air Toxics Standards (“MATS”) rule, EPA revised Subpart B to remove paragraph (k) of 40 C.F.R. § 60.21 (i.e., the definition of “allowance system” that CAMR added in 2005). 77 Fed. Reg. 9304, 9447 (Feb. 16, 2012). At the same time, EPA revised both 40 C.F.R. §§ 60.21(f) and 60.24(b)(1). *Id.* The revised versions of §§ 60.21(f) and 60.24(b) retain references to “allowance system.” *See id.* It appears that EPA may have “re-promulgated” these two references to “allowance system” in the Subpart B rules despite having deleted the definition of “allowance system” in § 60.21(k). There was no discussion of the re-promulgation in the MATS rule. In sum, the CAMR rulemaking, the D.C. Circuit’s decision in *New Jersey v. EPA*, and the MATS rulemaking do not definitively resolve the legal merits of the option of basing Subpart B plans on “allowance systems.”

“Actions by the Administrator.” The first section describes the contents of EPA’s “guideline document.”²⁸ The second section specifies what state plans must contain for them to be deemed “satisfactory” by EPA.²⁹ The third section addresses what EPA must do when a state submits or fails to submit a satisfactory plan.³⁰ The most important elements of these provisions are discussed below.

1. The “Guideline Document”

The “guideline document” is the basic mechanism EPA uses to assist the states in developing their section 111(d) plans for control of the designated facility/pollutant combination. Under 40 C.F.R. § 60.22(a), EPA must initiate the state standard-setting process for existing sources by publishing a “draft guideline document containing information pertinent to control of the designated pollutant [from] designated facilities.”³¹ This document establishes the environmental performance, compliance timing, and other requirements that state plans must meet to be approvable.

Emission guidelines for existing sources may be proposed concurrently with or following the proposal of standards of performance for new sources in that category.³² After EPA takes public comment on the draft guideline document, a “*final* guideline document will be published” in the Federal Register “upon or after *promulgation* of [final new source] standards of performance”³³ Paragraph (b) of 40 C.F.R. § 60.22 describes the categories of “information” EPA must provide “for the development of State plans, such as:

- (1) Information concerning known or suspected endangerment of public health or welfare caused, or contributed to, by the designated pollutant.
- (2) A description of systems of emission reduction which, in the judgment of the Administrator, have been adequately demonstrated.

²⁸ 40 C.F.R. § 60.22.

²⁹ *Id.* § 60.24. The term “satisfactory” is used in CAA § 111(d). 42 U.S.C. § 7411(d).

³⁰ 40 C.F.R. § 60.27.

³¹ The terms “designated pollutant” and “designated facility” are defined in paragraphs (a) and (b) of 40 C.F.R. § 60.21, respectively. A “designated pollutant” is “any air pollutant, the emissions of which are subject to a standard of performance for new stationary sources, but for which air quality criteria have not been issued and that is not included on a list published under section 108(a) or section 112(b)(1)(A) of the Act.” *Id.* § 60.21(a). A “designated facility” is “any existing facility . . . which emits a designated pollutant and which would be subject to a standard of performance for that pollutant if the existing facility were an affected facility” *Id.* § 60.21(b). EPA corrected the reference to section 112(b)(1)(A), which no longer exists, in CAMR, *see* 70 Fed. Reg. at 28,606, 28,649, a correction that was undone following CAMR’s vacatur, *see supra* note 11.

³² 40 C.F.R. § 60.22(a) specifies that EPA must publish the draft guideline document “[c]oncurrently upon or after proposal of standards of performance for the control of a designated pollutant from affected facilities.” “Affected facility” is defined to mean, “with reference to a stationary source, any apparatus to which a [NSPS] is applicable.” *Id.* § 60.2.

³³ *Id.* § 60.22(a) (emphases added).

(3) Information on the degree of emission reduction which is achievable with each system, together with information on the costs and environmental effects of applying each system to designated facilities.

(4) Incremental periods of time normally expected to be necessary for the design, installation, and startup of identified control systems.

(5) An emission guideline that reflects the application of the best system of emission reduction (considering the cost of such reduction) that has been adequately demonstrated for designated facilities, and the time within which compliance with emission standards of equivalent stringency can be achieved. The Administrator will specify different emission guidelines or compliance times or both for different sizes, types, and classes of designated facilities when costs of control, physical limitations, geographical location, or similar factors make subcategorization appropriate.

(6) Such other available information as the Administrator determines may contribute to the formulation of State plans.³⁴

2. The “Emission Guideline”

The heart of the aforementioned list of items of information that EPA must develop is paragraph (b)(5) of 40 C.F.R. § 60.22 – the “emission guideline”³⁵—reflecting “the application of the best system of emission reduction . . . that has been adequately demonstrated” for the emission sources in the relevant category, “and the time within which compliance with emission standards of equivalent stringency can be achieved,” which becomes the benchmark for state plans to achieve.³⁶ Paragraph (b)(5) also provides that, where the “costs of control,

³⁴ *Id.* § 60.22(b).

³⁵ In language paralleling that in paragraph (b)(5), the term “emission guideline” is separately defined in Subpart B to mean a “guideline set forth in subpart C of this part, or in a final guideline document published under § 60.22(a), which reflects the degree of emission reduction achievable through the application of the best system of emission reduction which (taking into account the cost of such reduction) the Administrator has determined has been adequately demonstrated for designated facilities.” 40 C.F.R. § 60.21(e). In promulgating this definition, EPA explained that it had decided to use the term “emission guideline,” in lieu of “emission limitation” (as the Agency had initially proposed), to dispel the concern of some commenters that EPA had “intended to mean a legally enforceable national emission standard” 40 Fed. Reg. at 53,341. EPA’s “emission guidelines,” the Agency explained, would “not be requirements enforceable against any source.” *Id.* at 53,343. Rather, “[I]ike the national ambient air quality standards prescribed under section 109 and the items [for state implementation plans] set forth in section 110(a)(2)(A)-(H) [of the CAA], they [would] only be criteria for judging the adequacy of State plans.” *Id.* At the same time, the statute plainly provides that the Administrator shall have the authority to prescribe a plan where a state fails to submit a satisfactory plan, and to enforce a plan should a state fail to enforce a plan’s provisions. 42 U.S.C. § 7411(d)(2).

³⁶ 40 C.F.R. § 60.22(b)(5). Note, however, that CAA § 111(d)(2)(A) does not state that State plans to be “equivalent to,” or “no less stringent than,” Subpart B guidelines; it requires that State plans to be “satisfactory;” these requirements reflect EPA’s 1975 interpretation of its statutory responsibility to review state plans and determine whether they are “satisfactory.”

physical limitations, geographical location, or similar factors make subcategorization appropriate,” EPA “will specify different emission guidelines or compliance times or both for different sizes, types, and classes of designated facilities”³⁷ This element of subparagraph (b)(5) is evidently derived from similar language in CAA § 111(b)(2), which states that EPA “may distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing” NSPS.³⁸ But whereas the Act authorizes EPA to “subcategorize” when establishing NSPS for new sources – but does not on its face *require* EPA to do so – EPA’s regulations implementing CAA § 111(d) mandate that the agency “*will specify* different emission guidelines [and] compliance times . . . [when the relevant] factors make subcategorization appropriate.”³⁹

3. Requirements for State Plans

Once EPA has published a final emission guideline,⁴⁰ states are afforded nine months in which to develop, adopt, and submit to EPA a “plan for the control of the designated pollutant to which the guideline document applies, unless EPA specifies otherwise.”⁴¹

A central question presented in the rulemaking proceeding adopting the 1975 regulations was whether EPA’s review authority encompassed the states’ establishment of emission standards to assess whether the state plans are equivalent to or more stringent than EPA’s emissions guidelines, as EPA had proposed, or whether the Agency’s review authority was limited to assessing state compliance with procedural requirements governing the adoption of state plans. The 1975 preamble explains:

(2) *Basis for approval or disapproval of State plans.* A number of industry comments questioned EPA’s authority to require, as a basis for approval of State plans, that the States establish emission

³⁷ 40 C.F.R. § 60.22(b)(5).

³⁸ 42 U.S.C. § 7411(b)(2).

³⁹ 40 C.F.R. § 60.22(b)(5) (emphasis added). As EPA explained in 1975, its “emission guidelines will reflect subcategorization within source categories where appropriate, [and] . . . [t]hus, [those] guidelines will in effect be tailored to what is reasonably achievable by particular classes of existing sources” 40 Fed. Reg. at 53,343. Thus, EPA noted, “while there may be only one standard of performance for new sources of designated pollutants, there may be several emission guidelines specified for designated facilities based on plant configuration, size, and other factors peculiar to existing facilities.” *Id.* at 53,341.

⁴⁰ Paragraph (c) of 40 C.F.R. § 60.22 provides that, after “consideration of [public] comments,” the “emission guidelines and compliance times referred to in paragraph (b)(5) . . . will be promulgated in subpart C of . . . [Part 60] with such modifications as may be appropriate.” 40 C.F.R. § 60.22(c). Although Subpart C of Part 60 does currently contain emission guidelines and compliance times for four existing source categories – “large municipal waste combustors” (Subpart Cb); “municipal solid waste landfills” (Subpart Cc); “sulfuric acid production units” (Subpart Cd); and “hospital/medical/infectious waste incinerators” (Subpart Ce) – EPA has as noted above in Section I.B. (despite the language of 40 C.F.R. § 60.22(c)), also promulgated emission guidelines for existing sources under sections 111(d) and 129 as separate subparts. *See, e.g.*, 40 C.F.R. Part 60, Subparts BBBB, DDDD, FFFF, MMMM.

⁴¹ *Id.* § 60.23(a)(1). Furthermore, EPA “may, whenever [it] determines necessary, extend the period for submission of any plan or plan revision or portion thereof.” *Id.* § 60.27(a).

standards that (except in cases of economic hardship) are equivalent to or more stringent than EPA's emission guidelines. In general, these comments argued that EPA has authority only to prescribe procedural requirements for adoption and submittal of State plans, leaving the States free to establish emission standards on any basis they deem necessary or appropriate.⁴²

The 1975 preamble contains an extensive discussion of this question and, after reviewing the statutory provisions, context and history, EPA reaffirmed its proposal, concluded its interpretation was legally correct and essential to the effective implementation of section 111(d), and explained that it would leave “a gaping loophole” if EPA’s review and approval of section 111(d) state plans was based solely on procedural criteria:

Against this background of Congressional firmness, the overriding purpose of which was to protect public health and welfare, it would make no sense to interpret section 111(d) as requiring the Administrator to base approval or disapproval of State plans solely on procedural criteria. Under that interpretation states could set extremely lenient standards -- even standards permitting greatly increased emissions -- so long as EPA's procedural requirements were met. Given that the pollutants in question are (or may be) harmful to public health and welfare, and that section 111(d) is the only provision of the Act requiring their control, it is difficult to believe that Congress meant to leave such a gaping loophole in a statutory scheme otherwise designed to force meaningful action.⁴³

While affirming that EPA would review the substance of state plans, EPA also noted that EPA’s guidelines would not themselves serve as emission standards directly applicable to sources: “EPA’s emission guidelines will not have the purpose or effect of national emission standards. As emphasized . . . they will not be requirements enforceable against any source . . . [and] will only be criteria for judging the adequacy of State plans.”⁴⁴ Rather, satisfactory state plans would establish the standards directly applicable to sources.

The timetable for the submittal of state plans was an issue considered in the rulemaking adopting this deadline. EPA received comments questioning whether nine months would be sufficient and, in retaining that timetable, the Agency explained that much of the work involved in plan development “can be begun when an emission guideline is proposed” and that states may already have the basic legal and technical infrastructure in place for carrying out section 111(d) plans.⁴⁵ EPA also said that “[s]ection 111(d) plans will be much less complex

⁴² 40 Fed. Reg. at 53,342.

⁴³ *Id.* at 53,343.

⁴⁴ *Id.*

⁴⁵ *Id.* at 53,345.

than the SIPs [submitted under section 110] and Congress [at the time] provided only nine months for SIP development.”⁴⁶ With certain exceptions, states are required, “prior to the adoption of any plan or revision thereof, [to] conduct one or more public hearings within the State on such plan or plan revision.”⁴⁷

Under 40 C.F.R. § 60.24, in order for a state plan to be approvable as “satisfactory” by EPA, each such plan “shall include emission standards” which “shall either be based on an allowance system or prescribe allowable rates of emissions except when it is clearly impracticable.”⁴⁸ The status of the phrase “allowance system” is, some argue, somewhat unclear as a result of the D.C. Circuit’s vacating CAMR.⁴⁹ The guidelines also address rules that EPA may promulgate under section 111(h), which permits EPA to issue a “design, equipment, work practice, or operational standard” if “it is not feasible to prescribe or enforce a standard of performance.”⁵⁰ The guidelines provide that in those cases where “equipment specifications are established, the plan [must], to the degree possible, set forth the emission reductions achievable by implementation of such specifications”⁵¹ Such a plan “may permit compliance by the use of equipment determined by the State to be equivalent to that prescribed.”⁵² The provisions of 40 C.F.R. § 60.24 further specify that “[e]mission standards shall apply to all designated facilities within the State.”⁵³

Two key (and interrelated) provisions of 40 C.F.R. § 60.24 are paragraphs (c) and (f). They concern the provision in CAA section 111(d)(1) for a state to vary the standards of performance to account for source-specific or source type-specific factors.⁵⁴ Such factors may include, “among other factors,” the “remaining useful life” of existing sources.⁵⁵ Paragraph (c) provides that, “[e]xcept as provided in paragraph (f) . . . , where the Administrator has determined that a designated pollutant may cause or contribute to endangerment of public health, [the] emission standards [set forth in a state-developed plan] shall be *no less stringent* than the corresponding emission guideline(s) specified in subpart C of this part”⁵⁶ Paragraph (c)

⁴⁶ *Id.*

⁴⁷ 40 C.F.R. § 60.23(c)(1). No hearing is required for a change to an increment of progress if it is not likely to cause the facility to not meet the final compliance date in the schedule. *Id.* § 60.23(c)(2). No hearing is required on an emission standard in effect prior to the effective date of Subpart B if it was adopted after public hearing and is at least as stringent as the guideline. *Id.* § 60.23(c)(3).

⁴⁸ *Id.* § 60.24(a), (b)(1).

⁴⁹ *See supra* note 11.

⁵⁰ 42 U.S.C. § 7411(h).

⁵¹ 40 C.F.R. § 60.24(b)(1).

⁵² *Id.*

⁵³ *Id.* § 60.24(b)(3).

⁵⁴ The relevant language was added to section 111(d) in the Clean Air Act Amendments of 1977, after EPA had promulgated its implementing regulations. *See* Pub. L. No. 95-95, § 109(b)(1), 91 Stat. 685, 699 (1977).

⁵⁵ 42 U.S.C. § 7411(d)(1).

⁵⁶ 40 C.F.R. § 60.24(c) (emphases added).

also provides that “final compliance shall be required as expeditiously as practicable but no later than the compliance times specified in subpart C of [Part 60].”⁵⁷

The “exception” to paragraph (c) of 40 C.F.R. § 60.24 – i.e., paragraph (f) – provides that, “[u]nless otherwise specified in the applicable subpart,” a state may in its own plan “on a case-by-case basis for particular designated facilities or classes of facilities, . . . provide for application of less stringent emissions standards or longer compliance schedules than those otherwise required by paragraph (c) . . . provided that the State demonstrates with respect to each such facility (or class of facilities)” the following:

- (1) Unreasonable cost of control resulting from plant age, location, or basic process design;
- (2) Physical impossibility of installing necessary control equipment; or
- (3) Other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable.⁵⁸

Setting aside the operation of 40 C.F.R. § 60.24(f), discussed further below, the emission standards adopted by a state must be at least as stringent as the relevant emission guideline published by EPA, unless, on a case-by-case basis, the state determines (and satisfactorily demonstrates to EPA) that a “less stringent” standard (or a “longer compliance schedule”) is needed for specifically identified facilities or classes of facilities.⁵⁹ In order to adopt a more relaxed standard for a source or class of sources, the state must be able to “demonstrate” to EPA, applying the criteria listed in paragraph (f)(1) through (f)(3), that a less stringent standard (or a longer compliance schedule) is warranted.⁶⁰ In the 1975 regulations EPA explained that “States will be free to set more lenient standards, subject to EPA review, as provided in §§ 60.24(d) and (f) in the case of welfare related pollutants and in cases of economic hardship.”⁶¹ EPA also noted in 1975 that emission guidelines would “reflect subcategorization within source categories where appropriate” and be “tailored to what is reasonably achievable by particular classes of existing sources.”⁶² EPA concluded that, “[i]n most if not all cases, the result is likely to be substantial variation in the degree of control required for particular sources, rather than identical standards for all sources.”⁶³

⁵⁷ *Id.*

⁵⁸ *Id.* § 60.24(f).

⁵⁹ *Id.*

⁶⁰ *Id.* Note that EPA provides for a separate variance procedure in 40 C.F.R. § 60.27(e)(2).

⁶¹ 40 Fed. Reg. 53,343.

⁶² *Id.*

⁶³ *Id.*

There are differing opinions as to the interaction between 40 C.F.R. § 60.24(c) and (f). One approach argues that the operation of the factors in paragraph (c) in state plans may be, as the regulations provide, limited by the initial language of § 60.24(f), “[u]nless otherwise specified in the applicable subpart.”⁶⁴ This position suggests that under EPA’s statutory responsibility to develop regulations implementing section 111(d) and to determine whether state plans are “satisfactory,” EPA may specify in an emission guideline that less stringent standards or a delayed compliance schedule would not be appropriate for a given category of sources or in certain circumstances. For example, EPA might make such a determination if its analysis showed that the range of compliance options available made such variances unnecessary because the cost of compliance would be similar for all sources. Under this approach, rather than simply disapprove such standards after a state had included them in its plan, EPA could use the guideline document to give States advance notice of its view that standards less stringent or with an extended compliance schedule than provided for under the emission guidelines would not be approved or would not be approved for certain classes of sources. For example, in the Clean Air Mercury Rule, which gave states flexibility in securing the required emission reductions and the ability to opt out of the cap-and-trade program, the state budgets – if adopted by states – were not adjustable as the framework of the standard provided states with flexibility to take into consideration the remaining useful life of sources and other relevant factors while securing the specified reductions in pollution. EPA’s authority to provide advance notice that variation from the standard will not be permitted in certain circumstances is, this approach contends, consistent with EPA’s 1975 interpretation that the statute authorized and obligated EPA to review the

⁶⁴ The proviso language “[u]nless otherwise specified in the applicable subpart” was not included in paragraph (f) when EPA first promulgated the Subpart B regulations in November 1975. *See* 40 Fed. Reg. at 53,347 (“(f) On a case-by-case basis for particular designated facilities, or classes of facilities, States may provide for the application of less stringent emission standards . . .”). EPA added this proviso language to paragraph (f) in 1995 in conjunction with its promulgation of emission guidelines for existing municipal waste combustors (“MWC”) units. *See* 60 Fed. Reg. 65,387, 65,414 (Dec. 19, 1995). The adoption of emission guidelines for existing MWC units resulted from the 1990 enactment of CAA § 129, which mandated MWC guidelines that “shall include . . . emissions limitations, notwithstanding any restriction in [CAA § 111(d)] regarding issuance of such limitations,” and required that state plans for existing MWC units “shall be at least as protective as the guidelines promulgated by the Administrator.” 42 U.S.C. § 7429(b)(1), (2) (emphasis added). Further, CAA § 129 mandates emission standards based on a maximum achievable control technology (“MACT”) standard similar to the regulation of hazardous air pollutants under CAA § 112. *See id.* §§ 7412(d)(2), 7429(b)(1), (a)(2). MACT is a more onerous standard than the BSER standard provided in CAA § 111(d).

The Federal Register preamble accompanying EPA’s MWC guidelines provides no discussion or explanation of the addition of the proviso language to paragraph (f). Given this regulatory history, it seems possible that this revision of paragraph (f) was meant only to take account of the situation occasioned specifically by enactment of CAA § 129 and that other emission guidelines would not incorporate the exceptions provided for under paragraph (f). If so, the proviso language in paragraph (f) would apply only to the MWC guidelines and not function as a general limitation on a state’s discretion to establish less stringent emission standards for specifically identified existing facilities or classes of facilities where the state demonstrates that the criteria of subparagraphs (f)(1) through (f)(3) are met. However, EPA amended the general implementing regulations to allow the agency to bypass 40 C.F.R. § 60.24(f) in “the applicable subpart”, applying to all 111(d) standards—not just in the emission guidelines for MWC. *See* 40 C.F.R. § 60.24(f). That language remains in effect.

substance of variances included in state plans, particularly those involving pollutants that endanger public health.⁶⁵

An alternative position argues that the language of § 60.24(f) must be read in a manner that avoids conflict with the provision in CAA § 111(d)(1), and that CAA § 111(d)(1)'s requirement that EPA's regulations enable States "in applying a standard of performance to any particular source . . . to take into consideration, among other factors, the remaining useful life of the existing source" precludes EPA from constraining the manner by which remaining useful life and other factors are accounted for in state plans. Those advocating this position point to EPA's statements during the initial promulgation of the 40 C.F.R. 60 Subpart B regulations. "States will have primary responsibility for developing and enforcing control plans under section 111(d)" and "will also have authority to grant variances in cases of economic hardship. . . ."⁶⁶ Those advocating this position also contend that the phrase "[u]nless otherwise specified in the applicable subpart" is not applicable to emission guidelines not promulgated to address municipal waste combustor ("MWC") units. 40 C.F.R. § 60.24(f).

Reflecting the principles of CAA § 116, Subpart B makes clear that a state has the option of adopting more stringent emission standards: "Nothing in this subpart shall be construed to preclude any State or political subdivision thereof from adopting or enforcing . . . emission standards more stringent than emission guidelines specified in subpart C of this part or in applicable guideline documents"⁶⁷

The regulations provide states additional flexibility for those pollutants that endanger public welfare but not public health.⁶⁸ This provision is not applicable to state plans for greenhouse gases because EPA determined that greenhouse gases endanger both public health and public welfare.⁶⁹

⁶⁵ 40 Fed. Reg. at 53,344 ("EPA review of [state] plans for their substantive adequacy is essential (particularly for health-related pollutants) to assure that meaningful controls will be imposed.").

⁶⁶ *Id.* at 53,343 (distinguishing between the role of states under section 111(d) as enacted in 1970 and their role under section 114 of the unenacted Senate bill). EPA explained that "assigning primary responsibility to the States in these areas is perfectly consistent with review of their plans on some substantive basis." *Id.*

⁶⁷ 40 C.F.R. § 60.24(g); *see also* 42 U.S.C. § 7416.

⁶⁸ 40 C.F.R. § 60.24(d).

⁶⁹ Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,496 (Dec. 15, 2009). Note, however, that some commenters read section 111 as requiring EPA to issue a section 111-specific endangerment finding, which the Agency has not yet done. EPA interprets section 111 as requiring only a rational basis for regulating pollutants emitted by a listed source category (when an endangerment finding has already been made for those pollutants), and, in any case, has stated that the rational basis propounded in its proposed new source performance standard qualifies as an endangerment finding under section 111(b)(1)(A). *See* Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 1430, 1452-53 (Jan. 8, 2014).

4. EPA Action

Finally, 40 C.F.R. § 60.27 addresses “Actions by the Administrator” following submission of a plan by a state or a state’s failure to submit such a plan within the prescribed period. First, paragraph (a) allows the Administrator to extend the deadline for plan submittal.⁷⁰ As noted above, the regulations provide that proposed rules must be submitted to EPA within nine months of the publication of emission guidelines unless EPA prescribes a different period in those guidelines.⁷¹

Paragraph (b) provides that after receiving a state’s proposed plan or plan revision, EPA must propose to approve or disapprove the submission and complete its determination within four months of the submission deadline.⁷² In order to determine whether the proposed plan is satisfactory, EPA considers whether the plan meets the requirements of Subpart B.⁷³

Where a state “fails to submit a plan within the time prescribed,” or EPA “disapproves [a] State plan . . . as unsatisfactory because the requirements of . . . subpart [B] have not been met,” EPA “will . . . promptly prepare and publish proposed regulations setting forth a plan” for the state.⁷⁴ Under paragraph (d), EPA must finalize and issue the replacement plan, “within six months after the date required for submission of a plan,” unless the state has in the meantime submitted a plan that EPA determines is approvable.⁷⁵

As a general matter, any plan EPA adopts for a state “will prescribe emission standards of the same stringency as the corresponding emission guideline(s) . . . [and] will require final compliance . . . as expeditiously as practicable but no later than the times specified in the guideline document.”⁷⁶ The regulations do allow the owner or operator of a covered source to apply to EPA for “the application of less stringent emission standards or longer compliance schedules. . . .”⁷⁷ In determining whether to provide such relief to an individual applicant, EPA must apply “the criteria specified in § 60.24(f).”⁷⁸

⁷⁰ 40 C.F.R. § 60.27(a).

⁷¹ *Id.* § 60.23(a)(1).

⁷² *Id.* § 60.27(b).

⁷³ *Id.* § 60.27(c)(3).

⁷⁴ *Id.* § 60.27(c)(1), (3).

⁷⁵ *Id.* § 60.27(d).

⁷⁶ *Id.* § 60.27(e)(1).

⁷⁷ *Id.* § 60.27(e)(2).

⁷⁸ *Id.*

In addition to delegating EPA the authority to adopt a plan for a state where the state fails to submit a satisfactory plan, the statute also delegates to EPA the authority to enforce the provisions of a plan if a state fails to do so.⁷⁹

II. EXPLANATION AND SUMMARY

This Section discusses how EPA develops Standards for existing versus new sources under Section 111 and significant judicial interpretations of key provisions in Section 111 relevant to section 111(d).

A. Development of Standards of Performance for New and Existing Sources

This section compares emission standards for new and existing sources under Section 111 of the Clean Air Act. Section 111 provides two mechanisms for EPA to establish “standards of performance” for stationary sources. First, EPA sets “new source performance standards” (“NSPS”) for “new” and “modified” stationary sources under CAA § 111(b).⁸⁰ Second, EPA establishes “emission guidelines” (“EGs”) for “existing sources” under CAA § 111(d).⁸¹ Although standards for new and existing sources differ in certain respects—principally in how the standards and guidelines are made applicable to sources—EPA’s approach to developing NSPS and EGs under Section 111 has traditionally been virtually identical.

1. Development of NSPS Under CAA § 111(b)

EPA promulgates standards of performance for new and modified sources under CAA § 111(b). Section 111 defines “standard of performance” as

a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.⁸²

This definitional standard is known as the “best system of emission reduction” (“BSER”) or “best demonstrated technology” (“BDT”).⁸³

⁷⁹ 42 U.S.C. § 7411(d)(2).

⁸⁰ *Id.* § 7411(b).

⁸¹ *Id.* § 7411(d).

⁸² *Id.* § 7411(a)(1).

⁸³ “The level of control prescribed by CAA section 111 historically has been referred to as ‘Best Demonstrated Technology’ or BDT. In order to better reflect that CAA section 111 was amended in 1990 to clarify that ‘best systems’ may or may not be ‘technology,’ the EPA is now using the term ‘best system of emission reduction’ or BSER in its rulemakings.” Standards of Performance for Petroleum Refineries; Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007, 77

As detailed below, in developing BSER and the corresponding performance standards for new and modified sources under Section 111(b), EPA undertakes a process whereby it: (1) identifies the source category or subcategories, defines the affected facilities, and selects the pollutants to be regulated; (2) conducts a review to identify and evaluate various applicable emission reduction systems; and (3) establishes the BSER and corresponding performance standard for the category of stationary sources.⁸⁴

Identifying Regulated Sources and Pollutants

In developing NSPS, EPA first determines which sources and what pollutants to regulate. The statute directs EPA to identify the categories of stationary sources that “cause[], or contribute significantly to, air pollution which may reasonably be anticipated to endanger public health and welfare” and to establish standards of performance for new sources in those categories.⁸⁵ The first step of the development of NSPS involves identifying the source category and any subcategories, defining the affected facilities, and selecting the pollutant(s) that will be subject to the applicable BSER and corresponding performance standard.⁸⁶

Systems of Emission Reduction Review

Next, EPA conducts a review of existing systems of emission reduction—sometimes referred to by EPA as a “technology review”⁸⁷—gathering information and data on emission reduction systems applicable to the source category and pollutant in question.⁸⁸ Using this information and data, EPA analyzes the amount of reductions that those systems would achieve if applied to the source category.⁸⁹ Although the emission reduction systems that EPA identifies and examines are typically technological controls—*e.g.*, baghouses or scrubbers—EPA

Fed. Reg. 56,422, 56,426 (Sept. 12, 2012) (citing 76 Fed. Reg. 52,738, 52,740 (Aug. 23, 2011); 76 Fed. Reg. 63,878, 63,879 (Oct. 14, 2011)). Accordingly, this section hereafter refers to the definitional standard only as the BSER.

⁸⁴ *See, e.g.*, Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, 76 Fed. Reg. 52,738, 52,740-41 (Aug. 23, 2011); Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44,354, 44,486 (July 30, 2008).

⁸⁵ 42 U.S.C. § 7411(b)(1).

⁸⁶ *See* Standards of Performance for New Stationary Sources; Municipal Waste Combustors, 54 Fed. Reg. 52,251, 52,253 (Dec. 20, 1989). Once a source category is listed, EPA is required to propose NSPS within a year and finalize them within a year after that. 42 U.S.C. § 7411(b)(1)(B).

⁸⁷ As noted above, Section 111 contemplates that the BSER may or may not consist of technological controls. *See supra* note 83. Accordingly, although EPA has referred to this review as a “technology review,” it is more accurately characterized as a review of potential systems of emission reduction.

⁸⁸ *See, e.g.*, 76 Fed. Reg. at 52,741.

⁸⁹ *See id.* (stating that EPA “identifies what emission reduction systems exist and how much they reduce air pollution in practice”).

may also consider non-technological means of reducing emissions.⁹⁰ The history of Section 111 indicates that Congress intended for the “system of emission reduction” analysis to go beyond “technological” systems when appropriate.⁹¹ In practice, however, EPA often focuses on technological controls.⁹²

During the review of systems of emission reduction EPA may perform inspections and tests on existing sources utilizing various emission reduction systems, and collect information and data within EPA and from other federal agencies, state and local regulatory agencies, industry stakeholders, and available technical literature.⁹³ EPA may also form working groups, task forces, or the like to assist the agency in the evaluation of emission reduction systems and development of the performance standard.⁹⁴ Other tools, such as computer modeling, may also be utilized by EPA in analyzing potential emission reduction systems.⁹⁵

In identifying and analyzing emission reduction systems applicable to a given source category and identified pollutants, EPA looks at “currently used, new and emerging control systems.”⁹⁶ That is, EPA is not limited to consideration of long-used control systems. Indeed, the Section 111 legislative history and case law indicate that the performance standards

⁹⁰ See Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units (“Proposed GHG NSPS”), EPA-HQ-OAR-2013-0495, at 172 (Sept. 20, 2013) (stating that the systems EPA considers are “generally, but not required to be always, a technological control”).

⁹¹ Under CAA § 111(a)(1), “standard of performance” was initially defined in terms of “the best system of emission reduction . . . adequately demonstrated,” which is how it is currently defined. Under the 1977 CAA Amendments, Congress amended the definition for new and modified sources only to refer to “the best *technological* system of *continuous* emission reduction”; the definition of a standard for existing sources referred to “the best system of continuous emission reduction.” Pub. L. No. 95-95, §109(c)(1)(A), 91 Stat. 685, 700 (1977). Congress repealed the 1977 amended definition of “standard of performance” in the 1990 CAA Amendments, thereby re-broadening the definition expressly to encompass non-technological reduction systems. Pub. L. No. 101-549, § 403(a), 104 Stat. 2399, 2631 (1990).

⁹² See Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 1430, 1463 (Jan. 8, 2014).

⁹³ See, e.g., Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills, 58 Fed. Reg. 33,790, 33,791 (June 21, 1993); Standards of Performance for New Stationary Sources; Rubber Tire Manufacturing Industry, 48 Fed. Reg. 2676, 2681 (Jan. 20, 1983); see also, e.g., *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 435 (D.C. Cir. 1973) (“The standards are based on information and data derived from (1) inspections and stack tests of existing facilities; (2) consultations with operators, designers, and state and local control officials; and (3) review of available literature on the subject.”); *Portland Cement Ass’n v. Ruckelshaus (Portland Cement I)*, 486 F.2d 375, 379 (D.C. Cir. 1973), *cert. denied*, 417 U.S. 921 (1974) (stating that the development of the NSPS was “based on stationary source testing conducted by [EPA] and/or contractors and on data derived from various other sources, including the available technical literature” (quoting 36 Fed. Reg. 24,876 (Dec. 23, 1971))).

⁹⁴ See, e.g., *Sierra Club v. Costle*, 657 F.2d 298, 326 (D.C. Cir. 1981); cf. *Nat’l Lime Ass’n v. Env’tl. Prot. Agency*, 627 F.2d 416, 427 (D.C. Cir. 1980).

⁹⁵ Cf. *Sierra Club v. Costle*, 657 F.2d at 332-36.

⁹⁶ 76 Fed. Reg. at 52,754.

are intended to be technology forcing.⁹⁷ For example, in the 1970's, Section 111(b) NSPS for sulfur dioxide emissions from power plants played a key role in driving the development and deployment of flue gas "scrubbers," which was a novel technology installed at only three power plants and available from only a single vendor at the time those standards were established.⁹⁸

After EPA has identified the existing control systems and resultant reductions in emissions achieved by those systems, the agency designates potential BSERs and corresponding performance standards based on those systems or combination of systems. These become the regulatory alternatives from which EPA will select the BSER and corresponding performance standard.⁹⁹

The CAA requires EPA to evaluate the identified systems of emission reduction and associated emission limitations based on a variety of factors, including "[1] the cost of achieving such reduction and [2] any nonair quality health and environmental impact and [3] energy requirements."¹⁰⁰ The "best" system is "an achievable emission level which represents the best balance of economic, environmental, and energy considerations."¹⁰¹ Courts have recognized that EPA has broad discretion in analyzing these factors,¹⁰² including how they should be balanced.¹⁰³

EPA ordinarily performs a cost-effectiveness analysis in evaluating the regulatory alternatives prior to regulatory review by the Office of Information and Regulatory Administration.¹⁰⁴ EPA typically evaluates costs in terms of nationwide annualized costs for the

⁹⁷ See, e.g., *Nat'l Lime*, 627 F.2d at 433 n.46 ("An achievable standard need not be one already routinely achieved in the industry." (citations omitted)); see also, e.g., *Costle*, 657 F.2d at 364; *Portland Cement I*, 486 F.2d at 391; S. Rep. No. 91-1196, at 16-17 (1970).

⁹⁸ See Larry Parker & James E. McCarthy, Cong. Research Serv., R40585, *Climate Change: Potential Regulation of Stationary Greenhouse Gas Sources Under the Clean Air Act 17-19* (2009).

⁹⁹ See, e.g., 73 Fed. Reg. at 44,486 (stating that the initial "technology review" permits EPA to then "identify potential emission limits").

¹⁰⁰ 42 U.S.C. § 7411(a)(1); see also, e.g., 73 Fed. Reg. at 44,486-87 (stating that EPA next "evaluate[s] each limit in conjunction with costs, secondary air benefits (or disbenefits) resulting from energy requirements, and non-air quality impacts such as solid waste generation").

¹⁰¹ *Costle*, 657 F.2d at 330.

¹⁰² See, e.g., *Costle*, 657 F.2d at 385 ("The statutory factors which EPA must weigh are broadly defined and include within their ambit subfactors such as technological innovation.").

¹⁰³ See *Lignite Energy Council v. U.S. Env'tl. Prot. Agency*, 198 F.3d 930, 933 (D.C. Cir. 1999) ("Because section 111 does not set forth the weight that should be assigned to each of these factors, we have granted the agency a great degree of discretion in balancing them."); see also, e.g., Proposed GHG NSPS at 198 ("EPA has discretion in balancing those factors, and may balance them differently in promulgating standards for different source categories.").

¹⁰⁴ See, e.g., *Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews*, Final Rule, 77 Fed. Reg. 49,490, 49,492 (Aug. 16, 2012); see also, e.g., Julie R. Domike & Alec C. Zaccaroli, *The Clean Air Act Handbook*, at 328-29 (3d ed. 2011) (discussing EPA's cost-effectiveness analysis under CAA § 111 and Executive Orders 12,866 and 12,291).

industry, as well as in terms of cost per unit of emission reduction, among other metrics.¹⁰⁵ Another factor that EPA has sometimes considered in evaluating costs is the economic impacts to the industry, which may be mitigated by the ability to pass associated costs on to consumers without significantly affecting demand.¹⁰⁶ In addition, in analyzing costs associated with identified control systems, EPA has wide latitude in determining whether the costs associated with the ultimate BSER and performance standard are reasonable. The D.C. Circuit has instructed that the associated costs should not be “exorbitant,”¹⁰⁷ and has upheld performance standards in cases where EPA has determined that costs are not “excessive”¹⁰⁸ or “greater than the industry could bear and survive.”¹⁰⁹

EPA also considers air quality impacts relative to the regulated pollutants and other emissions; non-air quality health and environmental impacts, such as solid waste generation, water pollution, noise creation, and radiation; and energy requirements for the regulatory alternatives.¹¹⁰ In addition, courts have found that the statutory factors are broadly defined to include certain subfactors not expressly enumerated in the statute, such as fostering innovation in emission reduction systems.¹¹¹ Furthermore, EPA may analyze any of the factors it identifies on a nationwide, regional, or plant-specific basis, and in terms of the present or over time.¹¹²

Establishing the BSER and Resulting Performance Standard

Based on its evaluation of the identified regulatory alternatives, EPA then selects the BSER and resulting performance standard. The CAA requires that the BSER “be ‘adequately demonstrated’ and the [performance] standard itself ‘achievable.’”¹¹³ The D.C. Circuit has described these two requirements as follows:

¹⁰⁵ See, e.g., Standards of Performance for New Stationary Sources; Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes, 55 Fed. Reg. 26,953, 26,960 (June 29, 1990).

¹⁰⁶ See *Costle*, 657 F.2d at 331; *Portland Cement I*, 486 F.2d at 387-88. The study in *Portland Cement I* “note[d] that individual mills may be closed in the years ahead, but observed that these plants were obsolete both from a cost and pollution point of view.” 486 F.2d at 388.

¹⁰⁷ *Essex*, 486 F.2d at 433; *Lignite*, 198 F.3d at 933.

¹⁰⁸ *Costle*, 657 F.2d at 343.

¹⁰⁹ *Portland Cement Ass’n v. EPA (Portland Cement II)*, 513 F.2d 506, 508 (D.C. Cir. 1975).

¹¹⁰ See, e.g., 55 Fed. Reg. at 26,960.

¹¹¹ See, e.g., *Costle*, 657 F.2d at 385 (“The statutory factors which EPA must weigh are broadly defined and include within their ambit subfactors such as technological innovation.”).

¹¹² See *id.* at 330 (“The language of section 111 not only authorizes variable control but also gives EPA authority when determining the best technological system to weigh cost, energy, and environmental impacts in the broadest sense at the national and regional levels and over time as opposed to simply at the plant level in the immediate present.”).

¹¹³ *Nat’l Lime*, 627 F.2d at 430 (quoting 42 U.S.C. § 7411(a)).

It is the system which must be adequately demonstrated and the standard which must be achievable. This does not require that a [source within the designated source category] be currently in operation which can at all times and under all circumstances meet the standards; nor, however, does it allow the EPA to set the standards solely on the basis of its subjective understanding of the problem or “crystal ball inquiry.” An adequately demonstrated system is one which has been shown to be reasonably reliable, reasonably efficient, and which can reasonably be expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way. An achievable standard is one which is within the realm of the adequately demonstrated system’s efficiency and which, while not at a level that is purely theoretical or experimental, need not necessarily be routinely achieved within the industry prior to its adoption.¹¹⁴

In analyzing whether a standard is “achievable,” EPA will also consider variable conditions that might contribute to the amount of expected emissions or the effectiveness of the control system.¹¹⁵

EPA ordinarily develops a performance standard that is “a numerical emissions limit, expressed as a performance level (*i.e.*, a rate-based standard or percent control), that reflects the BSER.”¹¹⁶ In other words, the standard generally establishes the maximum quantity of a pollutant that a source may emit, which reflects the BSER as applied to individual sources. EPA may also promulgate design, equipment, work practice, or operational standards where it would not be feasible to prescribe or enforce a numerical standard of performance.¹¹⁷

Furthermore, although performance standards are typically based on the identified BSER, EPA generally is not permitted to prescribe a particular system or technology that sources must use to comply with a performance standard.¹¹⁸ Rather, sources are at liberty “to elect

¹¹⁴ *Essex*, 486 F.2d at 433-34 (citation omitted).

¹¹⁵ *Costle*, 657 F.2d at 377. The D.C. Circuit has handed down several opinions analyzing the requirements of CAA § 111(b), including the requirements that the BSER be “adequately demonstrated” and the performance standard be “achievable,” among other things. Those decisions, which would largely apply under CAA § 111(d), are discussed below. *See infra* Part II.B.

¹¹⁶ 76 Fed. Reg. at 52,740; *see also, e.g.*, 40 C.F.R. § 60.42(a) (setting a PM performance standard for Fossil-Fueled Steam Generators at 43 nanograms per joule (ng/J) heat input (0.10 lb/MMBtu) and 20 percent opacity except for one six-minute period per hour of not more than 27 percent opacity).

¹¹⁷ 42 U.S.C. § 7411(h); *see also, e.g.*, 54 Fed. Reg. at 52,253. Section 111(h)(2) limits the use of design, equipment, work practice, or operational standards to situations in which a pollutant cannot be emitted through a conveyance, or in which measurement of a pollutant is technologically or economically impracticable.

¹¹⁸ *See* 42 U.S.C. § 7411(b)(5) (“Except as otherwise authorized under subsection (h) of this section, nothing in this section shall be construed to require, or to authorize the Administrator to require, any new or modified source to install and operate any particular technological system of continuous emission reduction to comply with any new

whatever combination of measures will achieve equivalent or greater control of emissions” as provided by the emission standard.¹¹⁹ In practice, however, the BSER identified by EPA may be the only reasonable emission reduction system that will bring a source in compliance with a standard.¹²⁰ Moreover, although performance standards generally are expressed as numerical limits reflecting the BSER as applied to individual sources, EPA interprets CAA § 111(b) to allow for the use of flexible, market-based mechanisms in developing and complying with performance standards, such as a trading program.¹²¹

After performance standards for new and modified sources have gone through the required notice and comment rulemaking procedures, and EPA has amended the standards and supporting information accordingly, the promulgated performance standards thereafter apply

source standard of performance.”); *see also, e.g.*, 73 Fed. Reg. at 44,487 (“While such standards are based on the effectiveness of one or more specific technological systems of emissions control, unless certain conditions are met, EPA may not prescribe a particular technological system that must be used to comply with a NSPS.”).

¹¹⁹ 73 Fed. Reg. at 44,487.

¹²⁰ *See, e.g., Costle*, 657 F.2d at 318 n.38.

¹²¹ *See, e.g.*, 73 Fed. Reg. at 44,354, 44,486 (“EPA believes that the NSPS program is flexible enough to allow the use of certain market-oriented mechanisms to regulate emissions.”). To date, no court has ruled upon the legality of a trading program under Section 111. In the 2005 Clean Air Mercury Rule (“CAMR”), EPA created a market-based model rule that states could adopt. *See Standards of Performance for New and Existing Stationary Sources*, 70 Fed. Reg. 28,606 (May 18, 2005). Although the D.C. Circuit struck down the rule, it did so on grounds unrelated to the legality of EPA’s utilization of a cap-and-trade program. *See New Jersey v. EPA*, 517 F.3d 574 (D.C. Cir. 2008), *cert. dismissed*, 555 U.S. 1162 (2009), and *cert. denied*, 555 U.S. 1169 (2009).

When EPA promulgated CAMR in 2005, it amended the Section 111(d) regulations to expressly allow for the trading program included in CAMR. Specifically, EPA revised the definition of “emission standard” in 40 C.F.R. 60.21(f) to mean a “legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, establishing an allowance system, or prescribing equipment specifications for control of air pollution emissions.” 70 Fed. Reg. at 28,649. EPA also amended 40 C.F.R. § 60.24(b)(1) to provide that “[e]mission standards shall either be based on an allowance system or prescribe allowable rates of emissions except when it is clearly impracticable.” *Id.* EPA also added a definition of “allowance system” under a new subsection, 40 C.F.R. § 60.21(k). *Id.* In *New Jersey v. EPA*, the D.C. Circuit struck down the Section 111(d) regulations promulgated under CAMR. *See* 517 F.3d at 583 (“EPA promulgated the CAMR regulations for existing EGUs under section 111(d), but under EPA’s own interpretation of the section, it cannot be used to regulate sources listed under section 112; EPA thus concedes that if EGUs remain listed under section 112, as we hold, then the CAMR regulations for existing sources must fall.”). In February 2012, when EPA promulgated the Mercury and Air Toxics Standards (“MATS”) rule, EPA again revised the Section 111(d) regulations to eliminate the definition of “allowance system” in former paragraph (k) of 40 C.F.R. § 60.21. National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 77 Fed. Reg. 9304, 9447 (Feb. 16, 2012). EPA also expressly stated in the MATS rule that it was “revising” 40 C.F.R. §§ 60.21(f) and 60.24(b)(1). Interestingly, however, EPA did not remove the references to “an allowance system” in either of those subsections or otherwise amend those subsections. Thus, although EPA may have intended to remove all references to “allowance system” in the Section 111(d) regulations, presumably in accordance with the D.C. Circuit’s vacatur of the 2005 regulations, the references to “an allowance system” in 40 C.F.R. §§ 60.21(f) and 60.24(b)(1) remain.

nationally to all qualifying sources, including those that were constructed or modified after the standard was proposed but before it was finalized.¹²² .

2. Development of Emission Guidelines Under CAA § 111(d)

EPA promulgates EGs for existing sources under CAA § 111(d) and its implementing regulations, found at 40 C.F.R. Part 60, Subpart B, §§ 60.20 to 60.29. EPA develops emission guidelines for existing sources in source categories covered by NSPS under Section 111(b). Some argue that these guidelines may be developed only for air pollutants that are not regulated as hazardous pollutants under CAA § 112 or criteria pollutants under CAA §§ 108 through 110.¹²³ Others agree that guidelines may not be developed for criteria pollutants but argue that emission guidelines also cannot be developed for source categories that are regulated under CAA § 112.¹²⁴ Emission guidelines for existing sources are to be published “[c]oncurrently upon or after proposal of” performance standards for new and modified sources.¹²⁵ EPA has previously developed performance standards and emission guidelines for source categories simultaneously.¹²⁶

The EGs developed under Section 111(d) identify the BSER for existing source categories or subcategories of concern and the emission reductions achievable under that system. The guideline serves as a performance benchmark for state plans incorporating emission limitations for existing sources in those source categories to meet in order to secure EPA approval, rather than a federally enforceable standard.¹²⁷ Although Section 111(d) creates this collaborative federalism framework, the process for developing and setting emission guidelines under Section 111(d) is fundamentally identical to the process EPA employs in developing performance standards under Section 111(b). That is, in developing guidelines for existing sources, EPA undertakes the same process described above for developing performance

¹²² See 42 U.S.C. § 7411(e) (“After the effective date of standards of performance promulgated under this section, it shall be unlawful for any owner or operator of any new source to operate such source in violation of any standard of performance applicable to such source.”); *id.* § 7411(a)(2) (defining “new source” as a stationary source that is modified or commences construction “after the publication of regulations (or, if earlier, *proposed* regulations)” (emphasis added)).

¹²³ 40 C.F.R. § 60.21(a).

¹²⁴ Whether the relevant factor is whether the air pollutant or source category is regulated under section 112 is the source of debate stemming from Congress’s 1990 Amendments to section 111(d), as noted in Section I.A. *supra*.

¹²⁵ *Id.* § 60.22(a). Although promulgation of NSPS for new and modified sources triggers a duty for EPA to concurrently or thereafter develop emission guidelines for existing sources in the same source category, neither the statute nor the implementing regulations specify the time period within which guidelines must be developed. However, EPA is required to issue section 111(d) guidelines for appropriate sources and pollutants, in accordance with its regulations, without unreasonable delay. See *Sierra Club v. Leavitt*, 355 F. Supp. 2d 544, 552 n.3 (D.D.C. 2005); *Norton*, 542 U.S. at 65.

¹²⁶ See, e.g., Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills, 56 Fed. Reg. 24,468 (May 30, 1991).

¹²⁷ See 40 C.F.R. §§ 60.23-24.

standards—*i.e.*, identification of emission reduction systems and corresponding reductions in emissions achievable using those systems, identification of potential BSER and emission guidelines based on the systems or combinations of systems identified, evaluation of each regulatory alternative taking into account the environmental performance, costs, non-air quality health and environmental impacts, energy requirements, and other relevant factors, and selection of the BSER and corresponding emission guideline.¹²⁸

Indeed, these steps are codified in the regulations implementing CAA § 111(d), which require the emission guideline document to include, among other things, “[a] description of systems of emission reduction which . . . have been adequately demonstrated”; “[i]nformation on the degree of emission reduction which is achievable with each system, together with information on the costs and environmental effects of applying each system to designated facilities”; and “[a]n emission guideline.”¹²⁹ Furthermore, in promulgating the Section 111(d) emission guideline regulations, EPA indicated that the overall process for developing BSER and corresponding emission limitations under Section 111(b) and Section 111(d) generally “will be the same in both cases.”¹³⁰

That EPA’s process for developing standards and guidelines under CAA § 111 is essentially identical is further evidenced by the fact that when developing performance standards and emission guidelines for new and existing sources in the same source category, EPA has employed the same development process for both the standards and the guidelines.¹³¹ Thus, the overall process that EPA undertakes in developing and setting performance standards under Section 111(d) and emission guidelines under Section 111(b) is the essentially same, with a few notable distinctions discussed more specifically below.

Timeframe for State Implementation

A primary distinction between the development of performance standards and emission guidelines is that in developing emission guidelines EPA has the added requirement of assessing and setting a time period for compliance with emission standards adopted in state plans.¹³² In doing so, EPA gathers information on the “[i]ncremental periods of time normally expected to be necessary for the design, installation, and startup of identified control systems,”

¹²⁸ See, e.g., 56 Fed. Reg. at 24,468.

¹²⁹ 40 C.F.R. § 60.22(b)(2), (3), (5).

¹³⁰ State Plans for the Control of Certain Pollutants from Existing Facilities, 40 Fed. Reg. 53,340, 53,341 (Nov. 17, 1975). More specifically, in responding to comments regarding confusion of the degree of limitations under Section 111(b) versus Section 111(d), EPA stated that “the general principle (application of best adequately demonstrated control technology, considering costs) will be the same” under both provisions. *Id.*

¹³¹ See Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills, 61 Fed. Reg. 9905 (Mar. 12, 1996); 54 Fed. Reg. 52,251 (NSPS for new or modified municipal waste combustors); 54 Fed. Reg. 52,209 (emission guidelines for existing municipal waste combustors).

¹³² 40 C.F.R. § 60.22(b)(5).

and will include in the guideline document a compliance period based on such information.¹³³ EPA “will specify different . . . compliance times . . . for different sizes, types, and classes of designated facilities when costs of control, physical limitations, geographical location, or similar factors make subcategorization appropriate.”¹³⁴

Consideration of Costs and Other Factors

Another manner in which the development process under the two provisions can differ is in the evaluation of costs associated with the systems of emission reduction, as the process of deploying such systems will often be different at new versus existing sources. In developing both performance standards and emission guidelines for a particular source category, EPA is required to consider associated costs. In developing emission guidelines for existing sources, EPA will often need to consider the cost of retrofitting a source to incorporate an emission reduction system.¹³⁵ Because retrofitting can and often will be more costly than installation of control systems during initial construction or modification, EPA has indicated that “the degrees of control represented by EPA’s emission guidelines will ordinarily be less stringent than those required by standards of performance for new sources.”¹³⁶ However, as when establishing performance standards for new sources, EPA has significant discretion in determining what level of cost is reasonable.¹³⁷

Lastly, in developing emission guidelines for states, EPA “will specify different emission guidelines or compliance times or both for different sizes, types, and classes of designated facilities when costs of control, physical limitations, geographical location, or similar factors make subcategorization appropriate.”¹³⁸ Thus, while the statute provides that EPA “may distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing [NSPS],”¹³⁹ EPA’s implementing regulations call for different emission guidelines or compliance times for different sizes, types, and classes of designated facilities when circumstances warrant such differentiation. In this regard, EPA has noted that “while there may

¹³³ *Id.* § 60.22(b)(4). EPA is required to include such information in the emission guideline document. *Id.* See also, e.g., 56 Fed. Reg. at 24,471 (May 30, 1991) (setting a three-year compliance period based on the amount of time it would typically take a source to install the identified emission reduction system and meet other requirements).

¹³⁴ 40 C.F.R. § 60.22(b)(5).

¹³⁵ See 40 Fed. Reg. at 53,340 (“[T]he degree of control reflected in EPA’s emission guidelines will take into account the costs of retrofitting existing facilities . . .”); see also, e.g., 54 Fed. Reg. at 52,211 (“[T]he guidelines reflect the EPA’s judgment of the degree of control that can be attained by various classes of sources without unreasonable costs, including considerations of retrofit costs, and without unreasonable nonair quality health and environmental impacts, or unreasonable energy requirements.” (emphasis added)).

¹³⁶ 40 Fed. Reg. at 53,341. For example, the emission guidelines EPA promulgated for municipal waste combustors are less stringent than the standards it simultaneously promulgated for the same source category, which took into account retrofit costs. See 54 Fed. Reg. 52,251 (NSPS for new or modified municipal waste combustors); 54 Fed. Reg. 52,209 (emission guidelines for existing municipal waste combustors).

¹³⁷ See *Essex*, 486 F.2d at 437; *Lignite*, 198 F.3d at 933.

¹³⁸ 40 C.F.R. § 60.22(b)(5).

¹³⁹ 42 U.S.C. § 7411(b)(2).

be only one standard of performance for new sources of designated pollutants, there may be several emission guidelines specified for designated facilities based on plant configuration, size, and other factors peculiar to existing facilities.”¹⁴⁰

Of course, it is also the case that the power sector, and carbon dioxide, are distinct in several respects from other industrial categories for which EPA has issued emission guidelines in the past. Further, for the Carbon Pollution Standards, President Obama has specially instructed EPA to engage with states, power companies, and other stakeholders in developing the emission guidelines, and to propose emission guidelines for modified, reconstructed, and existing sources by June 2014.¹⁴¹ EPA presented some of the ways that a “system-based” approach could work for the electric generating sector in a video posted to its website.¹⁴² In the video, EPA explains that “the unique characteristics of carbon pollution and the interconnected nature of the electric power sector call for a broad and flexible approach to designing the program for existing power plants.”¹⁴³ EPA further explains that such a system-based approach might include both supply-side options such as switching to lower-emitting sources of electricity and demand-side options such as efficiency measures that reduce demand for electricity.¹⁴⁴

EPA recently held several listening sessions to receive public input on the standards for existing power plants¹⁴⁵ and has made available a series of questions for states and other stakeholders regarding policy design,¹⁴⁶ to which a number of states have already responded.¹⁴⁷ This sort of input will be especially important in developing the Carbon Pollution Standards, because the system of emission reduction the agency ultimately determines to be the “best” system will likely build on approaches that have already proven successful at the state level.

Conclusion

Although the regulatory mechanisms identified under Section 111(b) and 111(d) are distinguishable, EPA’s processes for developing the actual performance standards and emission guidelines under these provisions are substantially identical. Moreover, both performance standards and emission guidelines must meet the same legal standard—*i.e.*, they

¹⁴⁰ 40 Fed. Reg. at 53,341.

¹⁴¹ Memorandum from President Barack Obama to EPA (June 25, 2013) (available at <http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards>).

¹⁴² *What EPA Is Doing*, EPA, <http://www2.epa.gov/carbon-pollution-standards/what-epa-doing> (last visited Feb. 19, 2014).

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Public Listening Sessions*, EPA, <http://www2.epa.gov/carbon-pollution-standards/public-listening-sessions> (last visited Dec. 16, 2013).

¹⁴⁶ *Questions for State Partners*, EPA, <http://www2.epa.gov/carbon-pollution-standards/questions-state-partners> (last visited Feb. 19, 2014).

¹⁴⁷ *See States’ 111(d) Implementation Group Input to EPA on Carbon Pollution Standards for Existing Power Plants* (Dec. 2013).

must reflect the “best system of emission reduction” for their respective source categories.¹⁴⁸ Accordingly, states might reasonably look to EPA’s past development of performance standards under Section 111(b), which has occurred much more frequently than the development of guidelines under Section 111(d), and to federal appellate decisions interpreting Section 111(b), for guidance as to the process that will be involved as emission guidelines for existing sources are developed.

B. Guidance and Significant Judicial Interpretations Relevant to Section 111(d).

1. Introduction

There is no case law interpreting section 111(d) of the Clean Air Act. Several cases interpret the language of section 111(a)(1), however, which defines the term “standard of performance.” Section 111(a)(1) provides that a standard of performance must reflect “the degree of emission limitation *achievable* through the application of the *best system of emission reduction* which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been *adequately demonstrated*.”¹⁴⁹ The term “standard of performance” is used both in section 111(b) – governing new and modified sources – and section 111(d) – governing existing sources. However, it must be emphasized that case law interpreting section 111(a)(1) was developed in the context of EPA’s application of standards of performance to new sources – under section 111(b) – not emission guidelines or state-established standards of performance for existing sources under section 111(d). It is possible that a court would interpret these terms differently in the context of section 111(d).

There are significant differences in standard-setting for new and existing sources under section 111. *Sierra Club v. Costle* lays out the three-step process by which EPA establishes standards of performance for *new* sources.¹⁵⁰ First, the Agency identifies systems of emission reduction that have been “adequately demonstrated.” Second, EPA determines what level of emission reduction is “achievable” with each of the identified systems. Finally, EPA selects the “best system of emission reduction” and the associated standard of performance that “represents the best balance of economic, environmental, and energy considerations.”¹⁵¹ The court explained that the language of section 111 gives EPA authority when identifying the best system of emission reduction “to weigh cost, energy, and environmental impacts in the broadest sense at the national and regional levels and over time as opposed to simply at the plant level in the immediate present.”¹⁵² Under section 111(d) and its implementing regulations EPA performs these same three steps, which form the basis of the emission guidelines. However, although under section 111(b) EPA’s emission standards are federally applied and enforced, under section

¹⁴⁸ Compare 42 U.S.C. § 7411(a)(1), with 40 C.F.R. § 60.22(b)(5).

¹⁴⁹ 42 U.S.C. § 7411(a)(1) (emphases added).

¹⁵⁰ *Sierra Club v. Costle*, 657 F.2d 298, 330 (D.C. Cir. 1981).

¹⁵¹ *Id.*

¹⁵² *Id.*

111(d) each state develops a plan to implement standards of performance for existing sources that meet the requirements provided in the emission guidelines. Section 111(d) also provides that EPA’s regulations should provide a means by which states can take into account the “remaining useful life” of existing sources as well as other factors in developing their state plans. EPA’s implementing regulations provide that for pollutants such as greenhouse gases that have been determined to endanger public health, state plans must include emission standards no less stringent than the emission guidelines.¹⁵³ The regulations further provide that “unless otherwise specified” in the relevant emission guidelines, states may “provide for the application of less stringent emissions standards or longer compliance schedules” if the state can demonstrate to EPA that a particular facility or class of facilities faces: “(1) Unreasonable cost of control resulting from plant age, location, or basic process design; (2) Physical impossibility of installing necessary control equipment; or (3) Other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable.”¹⁵⁴

Despite the significant differences between standard-setting under section 111(b) and standard-setting under section 111(d), the case law interpreting section 111(a)(1) in the section 111(b) context is informative given the absence of case law in the section 111(d) context and the fact that in many cases courts are interpreting the same statutory language that governs 111(d). This memorandum looks at judicial interpretations of some of the key terms found in section 111(a)(1) which defines “standard of performance” and is operationalized in both 111(b) and 111(d). The key terms include: “adequately demonstrated,” “achievable,” and “nonair quality health and environmental impact and energy requirements.” This memorandum also looks at case law interpreting EPA’s role in reviewing state plans in the context of a separate Clean Air Act program.

2. “Adequately Demonstrated”

In one of the first cases to interpret the language of section 111, the D.C. Circuit noted that in the definition of “standard of performance,” “[i]t is the system which must be adequately demonstrated and the standard which must be achievable.”¹⁵⁵ The court further determined that an “adequately demonstrated” system of emission reduction is “one which has been shown to be reasonably reliable, reasonably efficient, and which can reasonably be expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way.”¹⁵⁶

Courts have long interpreted Section 111 as an innovation-forcing regulatory mechanism to secure reductions in emissions from major pollution-generating sectors. In *Sierra Club v. Costle*, the D.C. Circuit explained that “[W]e believe EPA does have authority to hold

¹⁵³ 40 C.F.R. § 60.24(c).

¹⁵⁴ 40 C.F.R. § 60.24(f).

¹⁵⁵ *Essex Chem. Corp. v. Ruckelshaus*, 486 F.2d 427, 433 (D.C. Cir. 1973), *cert. denied*, 416 U.S. 969 (1974).

¹⁵⁶ *Id.*

the industry to a standard of improved design and operational advances, so long as there is substantial evidence that such improvements are feasible.”¹⁵⁷ In *Portland Cement Association v. Ruckelshaus*,¹⁵⁸ the court “reject[ed] the suggestion of the cement manufacturers that the [Clean Air] Act’s requirement that emission limitations be ‘adequately demonstrated’ necessarily implies that any cement plant now in existence be able to meet the proposed standards.” The court went on to explain that standards of performance under section 111(b) “look[] toward what may fairly be projected for the regulated future” rather than the “state of the art at present,” although any projection is “subject to the restraints of reasonableness and cannot be based on ‘crystal ball’ inquiry.”¹⁵⁹ In *Sierra Club v. Costle*, the court noted that “a particular control technique could be considered both an emerging technology and an adequately demonstrated technology, [although] *there* is inherent tension between the two concepts.”¹⁶⁰ The court went on to hold that “[r]ecognizing that the Clean Air Act is a technology-forcing statute, we believe EPA does have authority to hold the industry to a standard of improved design and operational advances, so long as there is substantial evidence that such improvements are feasible and will produce the improved performance necessary to meet the standard.”¹⁶¹ As final new source performance standards under section 111(b) are retroactive to the date of publication of the proposed standards,¹⁶² there is no “lead time” for new technologies to become available after a standard is promulgated to enable attainment with the level of the standard that will apply at that time. The absence of any lead time “correspondingly narrow[s]” EPA’s latitude in projecting the availability of adequately demonstrated systems and is one factor a court will consider when assessing the reasonableness of EPA’s determination.¹⁶³ This is of course distinct from the section 111(d) standards, which require the promulgation of state plans after the emission guidelines are promulgated and prescribe a compliance period which could extend several years forward in time after state plans are submitted.

The courts have shown considerable deference to EPA’s technical determinations of whether systems of emission reduction have been adequately demonstrated. In *Sierra Club*, the D.C. Circuit refused to overturn EPA’s standards against challenges that argued the standards were too lax as well as against challenges that the standards were too rigorous.¹⁶⁴ In declining to set aside EPA’s standards against a challenge contending that dry scrubbers were the best system of emission reduction, the court cited EPA reports and findings in the record that there was a lack

¹⁵⁷ *Sierra Club*, 657 F.2d at 364.

¹⁵⁸ *Essex Chem. Corp.*, 486 F.2d 375, 391 (D.C. Cir. 1973).

¹⁵⁹ *Id.* at 391.

¹⁶⁰ *Sierra Club*, 657 F.2d at 341 n.157.

¹⁶¹ *Id.* at 364 (footnote omitted).

¹⁶² CAA § 111(a)(2), 42 U.S.C. § 7411(a)(2) (defining “new source” to include sources constructed or modified after publication of proposed regulations).

¹⁶³ *Portland Cement Ass’n*, 486 F.2d at 391-92.

¹⁶⁴ *Sierra Club*, 657 F.2d at 311-12.

of implementation experience at full-scale facilities,¹⁶⁵ the absence of an explanation in the record of how pilot scale testing data could be used to predict performance at full scale plants,¹⁶⁶ the lack of data for sources firing different types of coal,¹⁶⁷ and unresolved issues regarding waste disposal from the scrubbers.¹⁶⁸ Likewise, in *Essex Chemical Corporation*, the court found that to be adequately demonstrated, a system must be one “which has been shown to be reasonably reliable, reasonably efficient, and . . . [not] exorbitantly costly in an economic or environmental way.”¹⁶⁹ In that case, the court found that “the Administrator has acted properly within the scope of his authority and not in abuse of his discretion” as regarded “the bulk of the standards” promulgated to control harmful pollution from steam generators, incinerators, sulfuric acid plants, nitric acid plants, and portland cement plants.¹⁷⁰ The court found that a combination of technical literature, test data, prototype testing, and the predictions and guarantees of equipment manufacturers demonstrated that EPA’s standard setting was “reasoned” and that there was ample record evidence that EPA had taken economic costs into account, but remanded portions of the standard to EPA for further consideration and explanation due to insufficient record consideration of the adverse environmental effects of certain proposed controls.”¹⁷¹

In the new source context, the D.C. Circuit has stated that section 111, “[b]ecause it applies only to new sources . . . ‘looks toward what may fairly be projected for the regulated future, rather than the state of the art at present.’”¹⁷² The court also noted that where data are not available, EPA “may compensate . . . through the use of other qualitative methods, including the reasonable extrapolation of a technology’s performance to other industries.”¹⁷³

As noted above, these cases were decided in the context of performance standards developed for new sources. Existing sources, like new sources, must be able to implement whatever system is identified as “adequately demonstrated.” However, if EPA were to adopt a system-based approach, it could significantly increase the range of potential compliance options.¹⁷⁴ Courts have shown considerable deference to EPA’s technical determinations that

¹⁶⁵ *Id.* at 341 n.157 (citing an EPA report: “the major uncertainty which exists with dry SO₂ removal technology is the absence of experience at large-scale facilities”).

¹⁶⁶ *Id.* (“[w]e see no basis on this record which would justify extrapolating from the pilot scale data to the conclusion that dry scrubbing is adequately demonstrated for full scale plants throughout the industry”).

¹⁶⁷ *Id.* (“there is no test data available for the performance of dry scrubbers burning low alkaline coal, which comprises roughly half of the supply of low sulfur coal, and is more difficult to clean than low sulfur coal with high alkalinity”).

¹⁶⁸ *Id.* (“crucial issues such as waste disposal . . . which may continue to limit the overall acceptability of this technology, remain to be answered”).

¹⁶⁹ *Essex Chem. Corp.*, 486 F.2d at 433.

¹⁷⁰ *Id.* at 429.

¹⁷¹ *Id.* at 433-41.

¹⁷² *Lignite Energy Council v. EPA*, 198 F.3d 930, 934 (D.C. Cir. 1999) (quoting *Portland Cement Ass’n*, 486 F.2d at 391).

¹⁷³ *Id.*

¹⁷⁴ This paper does not address whether EPA has authority to adopt a system-based approach.

systems of emission reduction have been adequately demonstrated and to EPA's consideration of economic costs, but have required full evaluation of the environmental implications of promulgated standards. Courts have also noted that the Clean Air Act is a technology-forcing statute and have interpreted Section 111(b) as technology-forcing in that context.

3. "Achievable"

Once EPA identifies an "adequately demonstrated" system, it must determine what levels of emission reductions are "achievable" by that system. "An achievable standard is one which is within the realm of the adequately demonstrated system's efficiency and which, while not at a level that is purely theoretical or experimental, need not necessarily be routinely achieved within the industry prior to its adoption."¹⁷⁵ EPA bears the burden of explaining "how the standard proposed is achievable under the range of relevant conditions which may affect the emissions to be regulated," and "a uniform standard must be capable of being met under most adverse conditions which can reasonably be expected to recur."¹⁷⁶ As noted, a system-based approach could provide different sources a greater range of compliance options.

In determining the emission level "achievable" by an adequately demonstrated system, the Clean Air Act does not require that the Agency base its conclusion on test data from any specific number of sources. Rather, to make this determination, EPA must "consider the representativeness for the industry as a whole of the tested plants on which it relies, at least where [EPA's] central argument is that the standard is achievable because it has been achieved (at the tested plants)."¹⁷⁷ Courts have rejected new source performances standards that EPA deemed "achievable" where the standards were based on test data and detailed findings and procedures were not released to provide sufficient opportunity to comment and where EPA failed to sufficiently explain how test data from a narrow set of sample sources could be reasonably extrapolated to demonstrated achievability for the full range of relevant variability within a source category.¹⁷⁸

The analysis of whether a system is "adequately demonstrated" is intertwined with the test for whether a standard is "achievable," particularly where "adequate demonstration" requires data extrapolation.¹⁷⁹ In order to show a standard for new sources is "achievable" by a system of emission reduction, where relying on test data to show achievability, EPA must "(1) identify variable conditions that might contribute to the amount of expected emissions, and (2) establish that the test data relied on by the agency are representative of potential industry-wide

¹⁷⁵ *Essex Chem. Corp.*, 486 F.2d at 433-34.

¹⁷⁶ *Nat'l Lime Ass'n v. EPA*, 627 F.2d 416, 431 n.46, 433 (D.C. Cir. 1980).

¹⁷⁷ *Id.* at 432-33.

¹⁷⁸ *See, e.g., id.* at 433-34; *Portland Cement Ass'n*, 486 F.2d at 396, 402.

¹⁷⁹ *See, e.g., Sierra Club*, 657 F.2d at 341 n.157.

performance, given the range of variables that affect the achievability of the standard.”¹⁸⁰ Reviewing courts have also recognized that “EPA does have authority to hold the industry to a standard of improved design and operational advances, so long as there is substantial evidence that such improvements are feasible and will produce the improved performance necessary to meet the standard.”¹⁸¹

In *National Lime Association*, the court identified the operational factors that affect particulate matter (“PM”) emissions from lime kilns and the effectiveness of PM control technology, and conducted a searching review of the test data behind EPA’s standard to assess whether it represented the full range of variability in the industry. The court remanded the NSPS because EPA had not shown that the “standard reflects consideration of the range of relevant variables that may affect emissions in different plants,” including feedstock variations, operational level (full or partial capacity), particulate matter generation, fuel selection, and regional variations in particle size.¹⁸²

4. “Nonair Quality Health and Environmental Impact and Energy Requirements”

Once EPA has identified the emission levels achievable through application of adequately demonstrated systems of emission reduction, the Agency identifies the “best system of emission reduction” based on a consideration of “the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements.”¹⁸³ This analysis is not limited to the costs and environmental impacts of implementing an emission standard at an individual source, and EPA (at least in a section 111(b) analysis) may consider these factors “in the broadest sense at the national and regional levels and over time as opposed to simply at the plant level in the immediate present.”¹⁸⁴ Under 111(b), the system and associated level of emission reductions forms the standard applied to all new sources; under 111(d), the system and associated level of emission reductions becomes the benchmark that state plans addressing health-endangering pollutants must meet to be approved by EPA.

The D.C. Circuit in *Sierra Club* upheld a variable standard of performance under section 111 rather than a uniform standard based on its consideration of nationwide economic, environmental, and energy impacts.¹⁸⁵ In promulgating the variable standard at issue in *Sierra Club*, EPA first considered the costs and other effects of its proposed approach on individual

¹⁸⁰ *Id.* at 377 (citing *Nat’l Lime Ass’n*, 627 F.2d at 433).

¹⁸¹ *Id.* at 364.

¹⁸² 627 F.2d at 433-44.

¹⁸³ 42 U.S.C. § 7411(a)(1).

¹⁸⁴ *Sierra Club*, 657 F.2d at 330.

¹⁸⁵ *Id.*

plants and found that they did not weigh against adopting the variable standard before analyzing the benefits of that approach on a broader scale.¹⁸⁶

Section 111(a)(1) directs EPA to consider economic, environmental, and energy impacts, and courts have recognized that section 111 “authorize[es] EPA to balance long term national and regional impacts of alternative standards.”¹⁸⁷ The statutory mandate of section 111 is to set standards based on the “best” system of emission reduction—the system that achieves the greatest possible reductions of air pollutants that endanger public health and welfare taking cost, impacts on energy, and other environmental impacts into consideration. To that end, EPA may determine that a standard that is less stringent than the maximum achievable emission limit or that provides sources with additional flexibility in meeting the standard most appropriately balances the statutory factors.¹⁸⁸ For example, EPA adopted the less stringent variable standard at issue in *Sierra Club* after its consideration of economic and environmental impacts indicated that its stricter proposed uniform standard, which EPA had found met the statutory “adequately demonstrated” and “achievable” criteria at the plant level, would hinder the development of new emission control technologies.¹⁸⁹

5. “Satisfactory”

Section 111(d) requires EPA to promulgate regulations that “establish a procedure similar to that provided by section 110 under which each State shall submit to the Administrator a plan” establishing standards of performance.”¹⁹⁰ Section 111(d)(2) provides that EPA must prescribe plans where a state “fails to submit a satisfactory plan.”¹⁹¹ Congress did not provide criteria other than that the plan be “satisfactory” and section 111(d) says little about the approval process.

Section 111(a)(1) provides that the Administrator is to identify the “best system of emission reduction” for a specific pollutant emitted by a listed source category, and defines “standard of performance” as “a standard for emissions of air pollutants which reflects the degree of emission limitation achievable through the application of” that system. In 1975, EPA issued implementing regulations which provide that EPA will identify the best system of emission reduction for existing sources and the associated performance standard in the emission guidelines, and further provided that a “satisfactory” state plan to address air pollutants that endanger human health must be “equivalent to or more stringent than EPA’s emission

¹⁸⁶ *Id.* at 326.

¹⁸⁷ *See id.* at 331.

¹⁸⁸ *See id.* at 330.

¹⁸⁹ *Id.* at 340-43.

¹⁹⁰ 42 U.S.C. § 7411(d).

¹⁹¹ *Id.* § 7411(d)(2).

guidelines.”¹⁹² EPA has stated that its interpretation of the statute is that EPA’s authority to review state plan submissions is substantive and not just procedural.¹⁹³

A central question presented in the rulemaking adopting the 1975 regulations was whether EPA’s review authority encompassed the states’ establishment of emission standards to assess whether the state plans are equivalent to or more stringent than EPA’s emissions guidelines, as EPA had proposed, or whether the Agency’s review authority was limited to assessing state compliance with procedural requirements governing the adoption of state plans. The 1975 preamble explains:

(2) Basis for approval or disapproval of State plans. A number of industry comments questioned EPA’s authority to require, as a basis for approval of State plans, that the States establish emission standards that (except in cases of economic hardship) are equivalent to or more stringent than EPA’s emission guidelines. In general, these comments argued that *EPA* has authority only to prescribe procedural requirements for adoption and submittal of State plans, leaving the States free to establish emission standards on any basis they deem necessary or appropriate.¹⁹⁴

The 1975 preamble contains an extensive discussion of this question and, after reviewing the statutory provisions, context and history, EPA reaffirmed its proposal, concluded its interpretation was legally correct and essential to the effective implementation of section 111(d), and explained that it would leave “a gaping loophole” if EPA’s review and approval of section 111(d) state plans was based solely on procedural criteria:

Against this background of Congressional firmness, the overriding purpose of which was to protect public health and welfare, it would-make no sense to interpret section 111(d) as requiring the Administrator to base approval or disapproval of State plans solely on procedural criteria. Under that interpretation states could set extremely lenient standards – even standards permitting greatly increased emissions – so long as EPA’s procedural requirements were met. Given that the pollutants in question are (or may be) harmful to public health and welfare, and that section 111(d) is the only provision of the Act requiring their control, it is difficult to believe that Congress meant to leave such a gaping loophole in a statutory scheme otherwise designed to force meaningful action.¹⁹⁵

EPA has also stated that “[s]tates will be free to vary from the levels of control represented by the emission guidelines [by setting more stringent standards pursuant to section 116 of the Clean Air Act or presenting a well documented basis for deviations that conform with

¹⁹² 40 Fed. Reg. 53,340, 53,342 (Nov. 17, 1975). *See also* 40 C.F.R. §§ 60.23(b)(5), 60.24(c), 60.27(c)(3).

¹⁹³ 40 Fed. Reg. at 53,342.

¹⁹⁴ 40 Fed. Reg. at 53,342.

¹⁹⁵ *Id.* at 53,343.

the pertinent factors] In most if not all cases, the result is likely to be substantial variation in the degree of control required for particular sources, rather than identical standards for all sources.”¹⁹⁶ Under the long-established implementing regulations, unless the relevant emission guidelines provide otherwise, states may provide for a less stringent standard or a longer compliance schedule for a specific facility or class of facilities if the state can demonstrate to EPA that applying the standard unadjusted would result in unreasonable cost of control due to plant age, location, or basic process design, physical impossibility of installing necessary control equipment, or other factors specific to those facilities that make application of the adjusted standard significantly more reasonable.¹⁹⁷ However, under the regulations EPA could provide that such variances will not be approvable. Under the Clean Air Mercury Rule, for example, the standards provided for considerable flexibility in how the emission reductions were to be secured, and did not require specific reductions from specific sources. The state emission reduction budgets were not adjustable. EPA has apparently only once disapproved a state plan under section 111(d) – Nevada’s state plan under the now-vacated Clean Air Mercury Rule.¹⁹⁸ EPA rarely discusses the basis for its equivalency determinations.

It should also be noted that there is case law explaining EPA’s role in reviewing state plans developed under section 110, governing state implementation plans for national ambient air quality standards. Given the mandate under section 111(d) that the state plan submission and approval process be similar to that provided for under section 110, case law on the state plan review process under section 110 could provide a starting point understanding EPA’s role in reviewing state plans under section 111. This case law generally recognizes states’ broad authority to develop plans that meet the NAAQS, and EPA will ordinarily not be able to deem a plan that does so unacceptable. For instance, the D.C. Circuit has reiterated that EPA has “no authority to question the wisdom of a State’s choices of emission limitations if they are part of a plan which satisfies the standards of § 110(a)(2) Thus, so long as the ultimate effect of a State’s choice of emission limitations is compliance with the national standards for ambient air, the State is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation.”¹⁹⁹ At the same time, the statute plainly provides that the Administrator shall have the authority to prescribe a plan where a state fails to submit a satisfactory plan, and to enforce a plan should a state fail to enforce a plan’s provisions.²⁰⁰

¹⁹⁶ *Id.* at 53,343.

¹⁹⁷ 40 C.F.R. § 60.24(f).

¹⁹⁸ See 72 Fed. Reg. 70,812 (Dec. 13, 2007) (disapproving Nevada state plan because of failure to include allowance allocation and trading-related requirements).

¹⁹⁹ *Virginia v. EPA*, 108 F.3d 1397, 1407-08 (D.C. Cir. 1997), *modified on other grounds*, 116 F.3d 499 (D.C. Cir. 1997) (quoting *Train v. NRDC, Inc.*, 421 U.S. 60, 79 (1975)). See also, e.g., *Union Elec. Co. v. EPA*, 427 U.S. 246, 266 (1976) (“[s]o long as the national standards are met, the State may select whatever mix of control devices it desires”); *Texas v. EPA*, 690 F.3d 670, 675 (5th Cir. 2012); *BCCA Appeal Grp. v. EPA*, 355 F.3d 817, 822 (5th Cir. 2003); *Michigan v. EPA*, 213 F.3d 663, 686-87 (D.C. Cir. 2000); *Bethlehem Steel Corp. v. Gorsuch*, 742 F.2d 1028, 1036 (7th Cir. 1984).

²⁰⁰ 42 U.S.C. § 7411(d)(2).

III. TIMING REGARDING STATE AND FEDERAL PLANS AND SOURCES COVERED BY PLANS

This section discusses the timetables in the Act/regulations for (a) Submission of a plan by state; (b) for EPA to act on state plan; (c) for EPA to take action on a federal plan if EPA disapproves a state plan or if a state fails to submit a plan; and (d) compliance deadlines for sources covered by state plan.

Timing Under the Act

Section 111(d) imposes no rulemaking schedules or deadlines on the Agency or states; however, as described below, EPA's regulations do set out a prescribed timeline once EPA publishes final emission guidelines for a category of sources it has regulated under section 111(b). The regulatory deadlines applicable to EPA, including the agency's duty to promulgate a federal plan if a state fails to submit a plan within the time allowed, are enforceable through the Act's citizen suits provision. *Cf. Sierra Club v. Leavitt*, 355 F. Supp. 2d 544, 557 (D.D.C. 2005) (holding that regulatory deadlines are nondiscretionary duties "under this chapter," which may therefore be compelled through Clean Air Act section 304(a)(2)). As a legal matter, EPA is required to issue section 111(d) guidelines for appropriate sources and pollutants, in accordance with its regulations, without unreasonable delay. *See id.* at 552 n.3 (suggesting that unreasonable delay of agency action required by regulation is challengeable under Clean Air Act section 304(a)); *see also Ctr. for Biological Diversity v. EPA*, 794 F. Supp. 2d 151, 156 (D.D.C. 2011) ("an unreasonable-delay claim requires that an agency has a duty to act in the first place" (citing *Norton v. S. Utah Wilderness Alliance*, 542 U.S. 55, 64 n.1 (2004)); *Norton*, 542 U.S. at 65 ("agency regulations that have the force of law" may demand agency action). Because section 111(d) guidelines are required only for existing sources that would be subject to regulation if they were new sources, the pending NSPS rulemaking will determine the scope of sources subject to section 111(d). EPA's regulations allow the Agency to *propose* section 111(d) emission guidelines on or after the date it proposes section 111(b) standards, but it may not finalize such guidelines until it has finalized section 111(b) standards. 40 C.F.R. § 60.22(a). However, the statutory language can be read to allow for different interpretations of the sequencing of section 111(d) emission guidelines and section 111(b) standards.

Regulatory Deadlines

EPA's regulations lay out the following schedule for regulating existing sources under section 111(d). This schedule has been largely consistent since EPA promulgated the original regulations in 1975.²⁰¹

²⁰¹ 40 Fed. Reg. 53,340, 53,346-49 (Nov. 17, 1975).

Task	Deadline	Citation
EPA publishes “draft guideline document” “containing information pertinent to control of the designated pollutant [from] designated facilities”	“concurrently upon or after proposal” of § 111(b) new source standards	40 C.F.R. § 60.22(a)
Public comments invited and considered	no deadline specified	40 C.F.R. § 60.22(a)
“Final guideline document” published	after consideration of public comments	40 C.F.R. § 60.22(a)
State must hold public hearing before adoption or revision of a state plan (at least 30 days’ notice required)	before state adopts and submits plan to EPA	40 C.F.R. § 60.23(c)(1); 60.23(d)
Each state to “adopt and submit” to EPA “a plan for the control of the designated pollutant”; must also submit summary of public hearing	within 9 months after notice of availability of a final guideline document	40 C.F.R. § 60.23(a)(1); 60.23(f)
EPA may extend deadline for plan submission	“whenever [the Administrator] determines necessary”	40 C.F.R. § 60.27(a)
EPA “will propose the plan or revision for approval or disapproval”	“[a]fter receipt of a plan or plan revision”	40 C.F.R. § 60.27(b)
EPA will approve or disapprove plan	“within four months after the date required for submission of a plan”	40 C.F.R. § 60.27(b)
EPA will propose regulations imposing a FIP-like plan, or portion thereof, if state fails to submit a plan by the deadline, or EPA disapproves plan as “unsatisfactory because the requirements of this subpart have not been met”	“promptly” “after consideration of any State hearing record”	40 C.F.R. § 60.27(c)
EPA to hold at least one public hearing in the relevant state, in Washington, D.C., or in alternate location	before finalizing FIP-like plan	40 C.F.R. § 60.27(f)

Thus, once EPA publishes a final “guideline document” containing emission guidelines and compliance schedules, unless EPA extends the deadline, states have nine months to submit emissions standards to EPA. Once plans have been submitted to EPA, the Agency then has four months to approve or disapprove state plans. If EPA disapproves a state plan, it

must issue a FIP-like plan within six months after the deadline for states to submit plans; no provisions explicitly lay out a process for a state to revise and resubmit a plan that has been disapproved, though the regulations do appear to contemplate “plan revision[s].”²⁰²

It is worth pointing out that Clean Air Act provisions governing the submission of section 110 state implementation plans originally incorporated similar deadlines, but those deadlines were amended in 1990 to give states three years instead of nine months to submit plans to EPA.²⁰³

IV. STATE DISCRETION TO DEVIATE FROM EPA EMISSION GUIDELINES IN STATE PLANS

This section discusses the discretion of a state to deviate from EPA’s emission guidelines in state plan and criteria used by courts or EPA to evaluate state plans that do not conform to EPA guidelines.

Section 111(d) incorporates the cooperative federalism model of the section 110 State Implementation Plan process for developing State plans establishing performance standards for certain pollutants emitted by existing sources in a category regulated by CAA § 111(b) standards for new sources. In particular, “[t]he Act * * * generally permit[s] each State to take the first cut at determining how best to achieve EPA emissions standards within its domain. *See* § 7411(c)(1), (d)(1)-(2).”²⁰⁴ As discussed above, EPA first publishes a “guideline document [] containing information pertinent to control” of a “designated pollutant” from “designated (i.e., existing) facilities.”²⁰⁵ Under EPA’s Subpart B regulations, EPA’s guideline document is to include, among other things, an “emission guideline” that reflects the application of the best system of emission reduction (considering the cost of such reduction) that has been adequately demonstrated for designated facilities, and the time within which compliance with emission standards of equivalent stringency can be achieved.”²⁰⁶ After publication of the guideline document, each State then prepares and submits to EPA a plan containing performance standards for “designated facilities” within its borders. States have significant discretion to use, in their plan, alternative methods of achieving the required level of control, subject to EPA oversight.²⁰⁷

²⁰² *See, e.g.*, 40 C.F.R. § 60.27(b).

²⁰³ Clean Air Act Amendments, Pub. L. No. 101-549, § 101(d), 104 Stat. 2399, 2409 (1990); *see also* CAA § 110(a)(1), *reprinted in* 1 COMM. ON ENV’T & PUBLIC WORKS, A LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1990 at 32 (1993).

²⁰⁴ *Am. Elec. Power Co. v. Connecticut*, 131 S. Ct. 2527, 2539, 180 L. Ed. 2d 435 (2011).

²⁰⁵ 40 Fed. Reg. at 53,340, col. 3; *see also* 40 C.F.R. § 60.22(b).

²⁰⁶ 40 C.F.R. § 60.22(b)(5). The guideline document “will specify different emission guidelines or compliance schedules or both for different sizes, types, and classes of designated facilities when costs of control, physical limitations, geographical location, or similar factors make subcategorization appropriate.” *Id.*

²⁰⁷ The definition of “emission standard” includes an “allowance system.” 40 C.F.R. § 60.21(f). The reference to “allowance system is discussed above. Any allowance system in a State plan is subject to the requirement in CAA § 111(d)(1) that the plan “provide for the implementation and enforcement of such standards of enforcement.”

If the plan submitted is “satisfactory,” EPA approves it. If a State fails to submit a plan, or if EPA disapproves the plan submitted, EPA promulgates a federal plan for the state.

The text of CAA section 111(d) addresses the respective roles that EPA and the States are to play. EPA’s CAA § 111(d) regulations – codified at 40 CFR Part 60, Subpart B – further define these roles. The provision for EPA-established “emission guidelines” for “designated pollutants” from “designated facilities” originates in EPA’s initial 1975 Subpart B rules.²⁰⁸ EPA’s emission guidelines do not apply directly to stationary sources but inform state-implemented standards: as EPA stated, “emission guidelines will not have the purpose or effect of national emission standards” and “will not be requirements enforceable against any source.”²⁰⁹ While EPA requires that states rules must provide standards of “equivalent stringency” for pollutants that affect public health, EPA pointed out that “States will be free to set more lenient standards, subject to EPA review, as provided in §§ 60.24(d) and (f) in the case of welfare-related pollutants and in cases of economic hardship.”²¹⁰

EPA’s Subpart B rules require each section 111(d) plan to include “emission standards,”²¹¹ and require that emissions standards “either be based on an allowance system or prescribe allowable rates of emissions except when it is clearly impracticable.”²¹² Emission standards must “apply to all designated facilities within the State.”²¹³ The statute provides that state plans be submitted to EPA for review to determine if they are “satisfactory” and EPA’s Subpart B rules generally require State section 111(d) emission standards and compliance deadlines to be “no less stringent than the corresponding emission guideline.”²¹⁴

EPA’s regulations indicate that it will approve plans adopting less stringent standards for pollutants that have only welfare-related effects when specified criteria have been

²⁰⁸ 40 Fed. Reg. 53,340 *et seq.* (Nov. 17, 1975).

²⁰⁹ *Id.* at 53,343, cols. 2 and 3.

²¹⁰ *Id.* at 53,343, col. 3.

²¹¹ 40 C.F.R. § 60.24(a). “Emission standard” is defined at 40 C.F.R. § 60.21(f) to mean “a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, establishing an allowance system, or prescribing equipment specifications for control of air pollution emissions.”

²¹² *Id.* § 60.24(a) and (b)(1). 40 C.F.R. §60.24(b)(1) provides: “Emission standards shall either be based on an allowance system or prescribe allowable rates of emissions except where it is clearly impractical. Such cases will be identified in the guideline documents issued under §60.22. Where emission standards prescribing equipment specifications are established, the plan shall, to the degree possible, set forth the emission reductions achievable by implementation of such specifications, and may permit compliance by the use of equipment determined by the State to be equivalent to that prescribed.”

²¹³ *Id.* § 60.24(b)(3).

²¹⁴ 40 C.F.R. § 60.24(c) provides: “Except as provided in paragraph (f) of this section, where the Administrator has determined that a designated pollutant may cause or contribute to endangerment of public health, emission standards shall be no less stringent than the corresponding emission guideline(s) specified in subpart C of this part, and final compliance shall be required as expeditiously as practicable but no later than the compliance times specified in subpart C of this part.”

met.²¹⁵ For pollutants that affect public health, such as greenhouse gases, EPA’s subpart B regulations provide that State standards must be at least as stringent as the emission guidelines.²¹⁶

As noted, the regulations also provide that “[u]nless otherwise specified in the applicable subpart,” states may provide for application of less stringent emission standards for particular designated facilities, or classes of facilities if specific conditions make a less stringent standard appropriate.²¹⁷ Informal guidance from EPA suggests the agency has interpreted section 111(d)(1)’s provision allowing less stringent standards based on factors such as the “remaining useful life” of a plant and 40 C.F.R. § 60.24(f) to achieve the same ends.²¹⁸

Consistent with CAA § 116, States or their political subdivisions may adopt and enforce emission standards more stringent than emission guidelines, and may impose more expedited compliance deadlines than are specified in emission guidelines, to the extent authorized by State and local law.²¹⁹

Conclusion

EPA has solicited informal comment from states concerning the use of Section 111(d) to address GHG issues, and EPA has published on its website a set of questions for states on which it seeks input.²²⁰ We hope that this memorandum will provide useful background to

²¹⁵ 40 C.F.R. § 60.24(d) provides: “Where the Administrator has determined that a designated pollutant may cause or contribute to endangerment of public welfare but that adverse effects on public health have not been demonstrated, States may balance the emission guidelines, compliance times, and other information provided in the applicable guideline document against other factors of public concern in establishing emission standards, compliance schedules, and variances. Appropriate consideration shall be given to the factors specified in § 60.22(b) and to information presented at the public hearing(s) conducted under § 60.23(c).”

²¹⁶ 40 C.F.R. § 60.24(c).

²¹⁷ 40 C.F.R. § 60.24(f) provides: “Unless otherwise specified in the applicable subpart on a case-by-case basis for particular designated facilities or classes of facilities, States may provide for the application of less stringent emission standards or longer compliance schedules than those otherwise required by paragraph (c) of this section, provided that the State demonstrates with respect to each such facility (or class of facilities): (1) Unreasonable cost of control resulting from plant age, location, or basic process design; (2) Physical impossibility of installing necessary control equipment; or (3) Other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable.”

²¹⁸ EPA, Background on Establishing New Source Performance Standards (NSPS) Under the Clean Air Act (*available at* <http://www.epa.gov/region9/air/listening/BackgroundEstablishingNewSourcePerformanceStds.pdf>).

²¹⁹ 40 C.F.R. §60.24(g).

²²⁰ See *Questions for State Partners*, EPA, <http://www2.epa.gov/carbon-pollution-standards/questions-state-partners> (last visited Feb. 19, 2014).

ECOS' members as they consider the issues raised by the prospective use of Section 111(d) of the Act.

Very truly yours,

Carolyn Brown, Bingham Greenebaum Doll LLP
Robert L. Brubaker, Porter Wright Morris & Arthur LLP
Karen Crawford, Nelson Mullins Riley & Scarborough LLP
Andrea Bear Field, Hunton & Williams LLP
David M. Flannery, Steptoe & Johnson, PLLC
Michael Gerrard, Columbia Law School
John Jacus, Davis Graham & Stubbs LLP
James R. May, Widener University
Vickie Patton, Environmental Defense Fund
Michael Wall, Natural Resources Defense Council

cc: Seth Jaffe, Foley Hoag LLP
Theodore L. Garrett, Covington & Burling LLP

Exhibit A - History of 40 C.F.R. 60 Subpart B

40 C.F.R. §§	Publication	Action
§60.20 – Applicability.	40 Fed. Reg. 53340, 53346 (Nov. 17, 1975).	Initial promulgation.
§60.21 – Definitions.	40 Fed. Reg. 53340, 53346 (Nov. 17, 1975).	Initial promulgation.
	70 Fed. Reg. 28606, 28649 (May 18, 2005) (CAMR subsequently vacated by <i>New Jersey v. EPA</i> , 517 F.3d 574 (D.C. Cir. 2008)).	Revise definitions for “Designated Pollutant” and “Emission Standard;” Add definition for “Allowance System.”
	77 Fed. Reg. 9304, 9447 (Feb. 16, 2012) (MATS).	Revise definitions for “Designated Pollutant” and “Emission Standard;” Remove definition for “Allowance System.”
§60.22 – Publication of guideline documents, emissions guidelines, and final compliance times.	40 Fed. Reg. 53340, 53346 (Nov. 17, 1975).	Initial promulgation.
	54 Fed. Reg. 52188, 52189 (Dec. 20, 1989).	Amend (a) to include “Concurrently upon or...” and “and upon or after promulgation of standards of performance for control of a designated pollutant from affected facilities....”
§60.23 – Adoption and submittal of State plans; public hearings.	40 Fed. Reg. 53340, 53347 (Nov. 17, 1975).	Initial promulgation.
	60 Fed. Reg. 65387, 65414 (Dec. 19, 1995).	Amend (a)(1) to include “Unless otherwise specified in the applicable subpart....”
	62 Fed. Reg. 45124 (Aug. 25, 1997).	Establishes effective date of previous rulemaking.
§60.24 – Emission standards and compliance schedules.	40 Fed. Reg. 53340, 53347 (Nov. 17, 1975).	Initial promulgation.
	60 Fed. Reg. 65387, 65414 (Dec. 19, 1995).	Amend (f) to include “Unless otherwise specified in the applicable subpart....”
	62 Fed. Reg. 45124 (Aug. 25, 1997).	Establishes effective date of previous rulemaking.

40 C.F.R. §§	Publication	Action
§60.24 – Emission standards and compliance schedules. (cont.)	65 Fed. Reg. 76378, 76384 (Dec. 6, 2000).	Amend (e)(1) to include “Unless otherwise specified in the applicable subpart...”
	70 Fed. Reg. 28606, 28649 (May 18, 2005) (CAMR subsequently vacated by <i>New Jersey v. EPA</i> , 517 F.3d 574 (D.C. Cir. 2008)).	Amend (b)(1) to include “either be based on an allowance system;” and create section (h) pertaining to mercury emission from EGUs.
	71 Fed. Reg. 33388, 33398 (June 9, 2006).	Amend (h) pertaining to mercury emissions from EGUs
	72 Fed Reg. 59190, 59204 (Oct. 19, 2007).	Amend (h) pertaining to mercury emissions from EGUs
	77 Fed. Reg. 9304, 9447 (Feb. 16, 2012) (MATS).	Amend (b)(1) to include “either be based on an allowance system;” and remove section (h).
§60.25 – Emission inventories, source surveillance, reports.	40 Fed. Reg. 53340, 53347 (Nov. 17, 1975).	Initial promulgation.
	44 Fed. Reg. 65069, 65071 (Nov. 9, 1979).	Amend (e) by changing reference to a semi-annual report required by 40 C.F.R. 51.7 to an annual report required by 40 C.F.R. 51.321.
	70 Fed. Reg. 59848, 59887 (Oct. 13, 2005).	Amend (b)(1) by adding last sentence pertaining to electronic reporting.
§60.26 – Legal authority.	40 Fed. Reg. 53340, 53348 (Nov. 17, 1975).	Initial promulgation.
§60.27 – Actions by the Administrator.	40 Fed. Reg. 53340, 53348 (Nov. 17, 1975).	Initial promulgation.
	65 Fed. Reg. 76378, 76384 (Dec. 6, 2000).	Amend (f) as to the occurrence and location of public hearings.

§60.28 – Plan revisions by the State.	40 Fed. Reg. 53340, 53348 (Nov. 17, 1975).	Initial promulgation.
§60.29 – Plan revisions by the Administrator	40 Fed. Reg. 53340, 53349 (Nov. 17, 1975).	Initial promulgation.