ORIGINS OF THE CLEAN AIR ACT: A NEW INTERPRETATION

BY

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Given the increased national attention to the use of the Clean Air Act to address climate change, an analysis of the origins of the Clean Air Act is instructive for understanding the law in its current form. Contrary to the traditional view, the formation of the Clean Air Act was not the result of the events of the Year of the Environment, but rather, the gradual evolution of a federal regulatory approach to the medium of air between 1955 and 1970. Far from being weak and ineffectual, the federal air pollution laws of 1955, 1963, 1965, and 1967 laid the legal and conceptual framework for the modern Clean Air Act.

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I. INTRODUCTION

The traditional view of historians of environmental law is that the Clean Air Act (CAA)[1] was passed in 1970 in response to the Year of the Environment. Punctuated by a number of developments in environmental law and policy, the year 1970 was indeed an important year in the history of environmental law. On the first day of the year, Congress passed the National Environmental Policy Act (NEPA),[2] requiring federal agencies to consider environmental impacts of major federal actions.[3] In his State of the Union address in January, President Nixon set forth an ambitious agenda to improve the condition of the environment over the course of the decade.[4] On April 22, 1970, Americans participated in Earth Day demonstrations, demanding governmental action to address the problem of pollution.[5] On December 2, 1970, the Environmental Protection Agency (EPA) was formed, following President Nixon's transmission to Congress of a reorganization plan for the executive branch.[6] The passage of the Clean Air Amendments of

1 42 U.S.C. §§ 7401–7671q (2012).

2 National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4347 (2012).

3 The statute requires a detailed statement on the environmental impact of a proposed action that significantly affects the quality of the human environment. *Id.* § 4332(2)(C).

4 John T. Woolley & Gerhard Peters, *Richard Nixon: Annual Message to the Congress on the State of the Union*, AM. PRESIDENCY PROJECT, Jan. 22, 1970, http://www.presidency.ucsb.edu/ws/?pid=2921 (last visited Feb. 14, 2015) ("The great question of the seventies is, shall we surrender to our surroundings, or shall we make our peace with nature and begin to make reparations for the damage we have done to our air, to our land, and to our water?").

5 *See* CBS News with Walter Cronkite, *Earth Day: A Question of Survival*, YOUTUBE (Apr. 11, 2010), http://www.youtube.com/watch?v=WbwC281uzUs (planned participants in Earth Day included "student groups in 2,000 colleges and 10,000 lower schools, citizen groups in 2,000 communities. [T]he gravity of the message of Earth Day still came through: act or die."); Earth Day Network, *Earth Day: The History of a Movement*, http://www.earthday.org/earth-day-history-movement (last visited Feb. 14, 2015) (noting the first Earth Day took place on April 22, 1970).

6 Reorganization Plan No. 3 of 1970, 35 Fed. Reg. 15,623 (Oct. 6, 1970), *reprinted in* 5 U.S.C. app. § 1 (2012).

1970 on the last day of the year capped off the Year of the Environment.[7] Given the historical context of these events, traditional scholarship has typically been dismissive of federal air pollution laws passed before 1970.[8] The recurring theme is that these laws were weak and ineffectual, and that the Clean Air Amendments of 1970 set forth a completely different approach.[9]

This Article presents a view that departs from this traditional interpretation. Although the events of the Year of the Environment played a role in motivating the passage of the Clean Air Amendments of 1970, they do not explain how Congress actually constructed the CAA.[10] Contrary to the traditional view, the modern CAA was the product of a long, plodding legislative process over the course of fifteen years, in which Congress grappled with the problem of addressing a complex problem within contemporary legal and political constraints.[11] Far from being weak and ineffectual, the federal air pollution laws of 1955, 1963, 1965, and 1967 laid the legal and conceptual framework for the modern CAA.[12] Most major principles and features of the modern statute can be traced back to those

7 Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (codified as amended at 42 U.S.C. §§ 7401–7671q (2012)) (passed Dec. 31, 1970).

8 *See, e.g.*, WILLIAM H. RODGERS, JR., 1 ENVIRONMENTAL LAW: AIR AND WATER 176 (1986) (noting that, though perpetuated in statutes at large, air quality control regions are "largely functionless shells carried over from the Air Quality Act of 1967" that offer little productive service).

9 *See, e.g.*, RICHARD O. BROOKS ET AL., LAW AND ECOLOGY: THE RISE OF THE ECOSYSTEM REGIME 123 (2002) ("The Clean Air Act of 1970 offers an excellent example of the pragmatic legal response to the environmental crisis preceding Earth Day. The Act authorized the promulgation of primary national ambient air quality standards (NAAQS). These were not new standards. Instead, they were health-based standards previously formulated by the Department of Health, Education and Welfare, an agency with little interest or competency in ecology."); ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 495 (4th ed. 2003) ("[T]he 1970 Amendments marked a significant departure from prior approaches and stamped federal regulatory policy with major features that it retains today."); *id.* at 498 ("Originally enacted in 1963 and amended in 1967, the Act did not provide for comprehensive national regulation until the Clean Air Act Amendments of 1970 were adopted."); ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 553 (3d ed. 2004) ("Although technically an amendment to previous air pollution legislation, the 1970 Act fundamentally reshaped the federal government's approach to regulating air pollution. Whereas previous legislation had relied on essentially voluntary efforts by states to reduce air pollution to tolerable levels, the 1970 Act swept voluntarism aside by providing for nationally uniform air quality standards, to be achieved by the states by a deadline set by Congress."); Jack Lewis, *The Birth of EPA*, http://www2.epa.gov/aboutepa/birth-epa (last visited Feb. 14, 2015) ("[The National Air Pollution Control Administration (NAPCA)] began as a research body with no regulatory powers. The Clean Air Act of 1963 gave NAPCA enforcement authority to attack interstate air pollution problems. Two years later, the act was amended to permit NAPCA to set air pollution standards for new motor vehicles. In reality, however, little effective use was made of these powers in the 1960s, and they were further diluted by the Air Quality Act of 1967, which re-emphasized the principle of state and local control over air pollution.").

10 *See infra* Part IX.

11 *See infra* Parts II–VII.

12 *See infra* Part IX.

early acts.[13] There is far more continuity between the early acts and the modern CAA than has been recognized in traditional scholarship.

This Article serves several purposes. First, as the nation continues to move in the direction of using the CAA to address global warming and climate change, it is important to understand how the Act was created. Studying the formation of the CAA is the best way to understand how the statute functions in its current form. Second, for students and professors of environmental law and administrative law, the CAA provides an excellent example of how Congress created the modern regulatory state. The modern regulatory state was not formed overnight, or even in the course of any one year.

II. THE 1955 ACT

In 1955, Congress passed the first in a series of five legislative acts that culminated in the 1970 Clean Air Act Amendments.[14] Although it did not have an official short title, the long title of this short, two-page act was "[t]o provide research and technical assistance relating to air pollution control" (1955 Act).[15] Several air pollution episodes motivated the passage of the 1955 Act. First, the London Fog disaster of December 1952 resulted in over 3,000 deaths in the United Kingdom.[16] Second, the Donora Smog incident of October 1948 resulted in twenty deaths in Pennsylvania.[17] The legislative history of the 1955 Act took note of these events, as well as others.[18] These individual events reflect a general historical pattern of environmental disasters leading to federal legislative action.[19]

13 *See infra* Part VIII.

14 Air Pollution Control Act of 1955, Pub. L. No. 84-159, 69 Stat. 322.

15 *Id.*

16 U.S. Envtl. Prot. Agency, *The Plain English Guide to the Clean Air Act: Understanding the Clean Air Act*, http://www.epa.gov/air/caa/peg/understand.html (last visited Feb. 14, 2015).

17 *Id.*

18 S. REP. NO. 84-389, at 2 (1955), *reprinted in* 1955 U.S.C.C.A.N. 2457, 2457–58 (Report of Committee on Public Works) ("While a few areas have attracted unusual attention because of air contamination[,] the problem is rapidly becoming serious and causing alarm in many places. Tragic results have followed unexplained occurrences of fumes, fog, and murkiness in the past, as in the Meuse Valley in Belgium, in London, in Donora, Pa., and in Poza Rica, Mexico, during present history. Considerable publicity has been given to 'smog' sieges in Los Angeles and public officials have indicated fear that like conditions may be developing in such widely separated cities as New York and Cleveland.").

19 Another historical example is the enactment of the federal Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. §§ 11001–11050 (2012). That Act was passed following the release of methyl isocyanate gas from the Union Carbide facility in Bhopal, India, which resulted in the deaths of approximately 3,000 people instantly, with an additional 2,000 deaths attributable to the gas leak. Lydia Polgreen & Hari Kumar, *8 Former Executives Guilty in '84 Bhopal Chemical Leak*, N.Y. TIMES, June 7, 2010, http://www.nytimes.com/2010/06/08/world/asia/08bhopal.html?_r=1& (last visited Feb. 14, 2015). This Act requires facilities that manufacture, process, and otherwise use chemicals in amounts above specified thresholds, to report those chemicals to state emergency response commissions, local emergency planning commissions, and EPA. By requiring the disclosure of chemical information from facilities, the

The 1955 Act was a milestone in the history of air pollution law. Congress granted federal authority to the Secretary of Health, Education, and Welfare (Secretary), as well as to the Surgeon General of the Public Health Service (Surgeon General), with respect to air pollution.[20] Generally, Congress authorized the Surgeon General "to prepare or recommend research programs for devising and developing methods for eliminating or reducing air pollution."[21] Specifically, the 1955 Act authorized the Surgeon General to engage in four different activities:

> (1) [E]ncourage cooperative activities by State and local governments for the prevention and abatement of air pollution; (2) collect and disseminate information relating to air pollution and the prevention and abatement thereof; (3) conduct in the Public Health Service, and support and aid the conduct by State and local government air pollution control agencies, and other public and private agencies and institutions of, technical research to devise and develop methods of preventing and abating air pollution; and (4) make available to State and local government air pollution control agencies, other public and private agencies and institutions, and industries, the results of surveys, studies, investigations, research, and experiments relating to air pollution and the prevention and abatement thereof.[22]

Congress also authorized the Surgeon General to conduct investigations of specific air pollution problems, upon request of any state or local air pollution control agency, "with a view to recommending a solution."[23] Because Congress only authorized these actions, and did not require them, the powers granted were discretionary in nature.[24]

Still, the 1955 Act included some mandatory requirements. It required the Surgeon General to prepare and publish from time to time reports of the "surveys, studies, investigations, research, and experiments made under the authority of this Act."[25] While there was no mandatory obligation to perform such investigations in the first place,[26] this reporting requirement was a significant step in the direction of the modern CAA.

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law is intended to facilitate responses to disasters like the one in Bhopal, India. *See* 42 U.S.C. §§ 11002, 11021, 11022, 11023 (2012).

20 §1, 69 Stat. at 322. In 1953, the Public Health Service was transferred to the newly created Department of Health, Education, and Welfare, a cabinet-level agency. Reorganization Plan No. 1 of 1953, § 5, 67 Stat. 631, 632 (1953) (codified as amended at 5 U.S.C. App. (2012)). Previously, it had been located in the Federal Security Agency, having been transferred from the Treasury Department in 1939. Reorganization Plan No. 1 of 1939, § 205, 53 Stat. 1423, 1425 (1939) (codified as amended at 5 U.S.C. App. (2012)). In 1979, the Department of Health, Education, and Welfare was renamed the Department of Health and Human Services, after Congress created a new Department of Education and transferred authority over education to that department. Department of Education Organization Act of 1979, Pub. L. No. 96-88, § 301, 93 Stat. 668, 677–79 (1979) (codified at 20 U.S.C. §§ 3441–3442).

21 § 2(a), 69 Stat. at 322.

22 *Id.* § 2(b).

23 *Id.* § 3.

24 *Id.* §§ 2–3.

25 *Id.* § 4.

26 *Id.* § 3 (stating that the Surgeon General "may" conduct investigations and research).

By modern standards, Congress created a limited role for the federal government relating to air pollution control. There were two reasons for this limited role. First, air pollution is a matter of scientific complexity, requiring the gathering of substantial information before deciding on regulatory requirements.[27] A general policy of the 1955 Act was to address the dangers to public health and welfare from air pollution.[28] In the legislative history, Congress more specifically identified the "need to determine the causes of air pollution, the meteorological factors and chemical elements involved, the effects, and possible preventive measures."[29] Congress realized this goal would not be achieved within the five-year appropriations period set forth in the 1955 Act.[30] Rather, the objective was to encourage coordination among different agencies toward the goal of understanding the nature and extent of the air pollution problem.[31]

Despite its limited focus, the 1955 Act framed the way Congress would perceive air pollution for the next sixty years. The language "dangers to the public health and welfare" in the policy statement presented a new way of thinking about air pollution, compared with the common law conception of individual harm.[32] In subsequent acts, the term "dangers" would evolve into the concept of "endangerment," a standard that pervades the modern CAA.[33] In the modern CAA, endangerment functions as a condition for triggering

27 *See* S. REP. NO. 84-389, at 4 (1955), *reprinted in* 1955 U.S.C.C.A.N. 2457, 2460 (commenting that effective control of air pollution requires further scientific knowledge).

28 § 1, 69 Stat. at 322.

29 S. REP. NO. 84-389, at 1.

30 *Id.* at 4 ("[W]hile it is not considered feasible to accomplish the entire objectives of the bill within the 5-year period of program authorized, the time limitation may serve a useful purpose in providing the occasion for a reappraisal of program toward the close of the 5-year period.").

31 *Id.* at 3 ("[T]he program which would be made possible by this legislation should stimulate State and local agencies as well as aid them in dealing with phases of the problem with which they are most immediately concerned. The problem of research into the causes and ultimate elimination of air pollution is so complex and vast that it is not realistic to expect a solution through uncoordinated efforts of a multitude of agencies.").

32 *Compare* § 1, 69 Stat. at 322 (recognizing the dangers to public health and welfare from air pollution), *with* VICTOR E. SCHWARTZ ET AL., PROSSER, WADE & SCHWARTZ'S TORTS 531 (11th ed. 2005) ("Proof of damages is an important part of plaintiff's cause of action, whether based on intentional conduct, negligence, or strict liability.").

33 *See, e.g.*, S. REP. NO. 91-1196, at 16, 20 (1970) (using the terms "danger" and "endangerment" interchangeably, through the phrases "*danger* to public health or welfare" as well as "*endangerment* of public health and welfare"). *Compare* Air Pollution Control Act of 1955, Pub. L. No. 84-159, 69 Stat. 322 (recognizing "dangers to the public health and welfare"), *with* Clean Air Act of 1970, Pub. L. No. 91-604, 84 Stat. 1684 (1970) (directing the Administrator of EPA to publish a list of sources that "may contribute significantly to air pollution which causes or contributes to the endangerment of public health or welfare"), *and id.* at 1685 (providing Administrator with authority to grant waiver of permit requirements for two years so long as the waiver is necessary to "assure that the health of persons will be protected from imminent endangerment"), *and id.* at 1705 (providing Administrator authority to bring suit against a source that is "presenting an imminent and substantial endangerment to the health of persons").

mandatory action by EPA to address a particular air pollutant, in a number of different programs.[34]

The second reason for Congress's limited approach was the constraint of federalism.[35] Another policy of the 1955 Act was "to preserve and protect the primary responsibilities and rights of the States and local governments in controlling air pollution."[36] This fundamental premise is a longstanding theme in the history of the statute, and is set forth several times in the modern CAA.[37] The premise that the states and local governments have primary responsibility over air pollution has not changed in the sixty years since the passage of the 1955 Act.[38]

A related concern was the need to justify the federal regulation of air pollution within the limitations of the federal Constitution.[39] The mere recognition of the "dangers to the public health and welfare" in the statement of policy did not provide a constitutional basis for the passage of

34 The modern statutory language generally uses the term "endangers," rather than "endangerment," to set forth the preconditions for rulemaking by EPA. *See* 42 U.S.C. § 7408(a)(1)(A) (2012) (requiring the publication of a list of each air pollutant "*emissions of which*, in his judgment, cause or contribute to air pollution which *may reasonably be anticipated to endanger public health or welfare*") (emphasis added); *id.* § 7521(a)(1) (requiring EPA to prescribe "standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, *air pollution which may reasonably be anticipated to endanger public health or welfare*") (emphasis added). In contrast to the use of the term "endangers," Congress has generally used the term "endangerment" to convey the notion of harm giving rise to a remedy of abatement or some other form of injunctive relief. *See id.* § 7412(r)(9)(A) (allowing EPA to seek the relief of abatement of an accidental release of a regulated substance under the section 112(r) program, where there is "imminent and substantial endangerment to the human health or welfare or the environment"); *id.* § 7419(d)(1)(A)–(B)(ii) (authorizing EPA to require interim actions by primary nonferrous smelters, as are necessary "to avoid an imminent and substantial endangerment to health of persons"); *id.* § 7603 (granting EPA emergency powers to seek abatement of air pollution that "is presenting an imminent and substantial endangerment to public health or welfare, or the environment"). But Congress is not always consistent in the use of these terms, and has used them interchangeably. *See, e.g.*, *id.* § 7412(f)(4)(B) (allowing EPA to grant a waiver from compliance with a section 112 standard, provided that steps will be taken to ensure that the health of persons will be protected from "imminent endangerment"); *id.* § 7415(a)–(b) (authorizing EPA to require a state to revise its state implementation plan (SIP) when EPA "has reason to believe that any air pollutant or pollutants emitted in the United States cause or contribute to air pollution *which may reasonably be anticipated to endanger public health or welfare in a foreign country*," while the section also uses the term "endangerment") (emphasis added).

35 *See* S. REP. NO. 84-389, at 3 (1955), *reprinted in* 1955 U.S.C.C.A.N. 2457, 2459 ("The committee recognizes that it is the primary responsibility of State and local governments to prevent air pollution.").

36 Air Pollution Control Act of 1955, Pub. L. No. 84-159, § 1, 69 Stat. 322.

37 42 U.S.C. § 7401(a)(3); *see id.* § 7407(a) (establishing that each state has primary responsibility for assuring air quality).

38 § 1, 69 Stat. at 322; 42 U.S.C. § 7401 (a)(3).

39 *See* U.S. CONST. amend. X (reserving all power to the states that are not delegated to the United States by the Constitution); *id.* art. I, § 8 (listing enumerated powers).

the 1955 Act.[40] Congress does not have constitutional authority to legislate for the general welfare, and Congress did not attempt to justify the 1955 Act on that basis.[41] To be consistent with the federal Constitution, Congress must identify an authorized constitutional power, which it has done typically through the Commerce Clause.[42] In the statement of policy, Congress did this by identifying three forms of damage resulting from air pollution—"injury to agricultural crops and livestock, damage to and deterioration of property, and hazards to air and ground transportation."[43] Commerce includes the business of raising agricultural crops, even for local sale.[44] In addition, air and ground transportation themselves are channels of commerce, long recognized as a separate link to the Commerce Clause.[45] Damage to property from air pollutants crossing state lines also affects commerce.[46]

Given the historical context of the passage of the 1955 Act, it would be an oversimplification to dismiss it as an archaic and weak air pollution law. Rather, it represented a significant first step in the federal regulation of air pollution. As for the nonmandatory nature of the law, it is important to recognize that even under the modern CAA, EPA often makes

40 § 1, 69 Stat. at 322 (recognizing "dangers to the public health and welfare" in the statement of policy); *see generally* U.S. CONST. art. I, § 8 (listing Congress's enumerated powers, which do not include the protection of public health and welfare).

41 S. REP. NO. 84-389, at 3 (1955), *reprinted in* 1955 U.S.C.C.A.N. 2457, 2459 ("The bill does not propose any exercise of police power by the Federal Government and no provision in it invades the sovereignty of States, counties, or cities.").

42 *See* U.S. CONST. art. I, § 8; *see, e.g.*, Gonzales v. Raich, 545 U.S. 1, 19 (2005) (holding that Congress's Commerce Clause authority includes the power to prohibit the local cultivation and use of marijuana); *see also* Christine E. Coleman, *The Future of the Federalism Revolution:* Gonzales v. Raich *and the Legacy of the Rehnquist Court*, 37 LOY. U. CHI. L.J. 803, 806–07 (2006) (discussing the development of the expansive reading of the commerce clause and growing use of power by Congress).

43 § 1, 69 Stat. at 322.

44 Wickard v. Filburn, 317 U.S. 111, 128–29 (1942).

45 *See* Moira Bergin, *Packing Heat? Defining the Scope of the Transportation Security Administration's Authority to Protect America's Airports*, 59 CATH. U. L. REV. 201, 216–17 (2009) (discussing authority of Congress to regulate air transportation under both the "substantial effects" and the "channel of commerce" tests); Heart of Atlanta Motel, Inc. v. United States, 379 U.S. 241, 256–57 (1964) (discussing broad scope of Congress's authority to regulate transportation of persons and property as a channel of commerce, including regulation of ground transportation). Air itself is interstate commerce because planes fly through it. In a case involving a criminal prosecution for shooting a coyote from an aircraft, the Ninth Circuit upheld the constitutionality of the Airborne Hunting Act of 1971 under the Commerce Clause, based on the premise that an air space is like a navigable waterway, which has long been recognized as a basis for regulating interstate commerce. United States v. Helsley, 615 F.2d 784, 786 (9th Cir. 1979) ("We think the federal power to regulate the air space is as complete and as valid as the federal power, to the extent it rests upon the commerce clause, to regulate navigable waters."). By analogy, the same result would apply to federal regulation of air pollution. For additional analysis of the impact of air pollution on interstate commerce, see SIDNEY EDELMAN, *Federal Abatement of Air Pollution: Conference-Hearing Approach*, *in* THE LAW OF AIR POLLUTION CONTROL 155, 202, 206, 208 (1970) (recognizing that air pollution affects commerce as well as the navigable airspace).

46 *See* EDELMAN, *supra* note 45, at 205–06 (discussing effects of pollution felt "in a state other than that in which it originated is clearly within the reach of the commerce power" and discussing the costs associated with air pollution damage to agriculture and property).

recommendations that do not have the strict force of law, but which create strong incentives for states and local governments to act.[47] A modern example is EPA's use of control technique guidelines (CTGs) to satisfy statutory requirements in air quality control regions that are not in attainment with the national ambient air quality standards.[48] Individual CTGs do not have the force of law.[49] But EPA has continued to use these nonmandatory guidelines to force state action, in order to implement the reasonably available control technology requirement for volatile organic compounds in ozone nonattainment areas, which itself is mandatory under the statute.[50] Therefore, even under the modern CAA, EPA has used nonmandatory guidelines as a means for coercing state action. Accordingly, the weakness of federal air pollution efforts before 1970 is more attributable

47 Alec C. Zacaroli, *Meeting Ambient Air Standards: Development of the State Implementation Plans*, *in* THE CLEAN AIR ACT HANDBOOK 43, 50–51 (Julie R. Domike & Alec C. Zacaroli eds., 3d ed. 2011) (discussing EPA's use of control technique guidelines to establish "presumptive norms," which compel state compliance despite being nonbinding).

48 42 U.S.C. § 7408(b)(1) (2012) ("[T]he Administrator shall . . . *issue* to the States and appropriate air pollution control agencies *information on air pollution control techniques*, which information shall include data relating to the cost of installation and operation, energy requirements, emission reduction benefits, and environmental impact of the emission control technology.") (emphasis added). The 1977 amendments authorized EPA to issue control technique guidelines (CTGs) to satisfy the reasonably available control technology requirement in ozone nonattainment areas. 42 U.S.C. § 7511b (2012). Because ozone is formed from the reaction of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) in the presence of sunlight, VOCs are considered precursors to ozone. *See* Matthew J. MacLean, *Opportunity Lost:* Virginia v. EPA *and the Authority of the Northeast Ozone Transport Commission*, 17 VA. ENVTL. L.J. 531, 533 (1998) (describing chemical process by which VOCs become ozone). Therefore, by regulating the levels of VOCs from human activities, EPA can regulate the level of ozone in the ambient air.

49 Zacaroli, *supra* note 47, at 50–51 (citing Citizens for a Better Env't v. Costle, 515 F. Supp. 264, 278 (N.D. Ill. 1981) and Rubber Mfrs. Ass'n v. Costle, 14 E.R.C. 2108, 2113, 1980 U.S. Dist. LEXIS 17413, at *13–14 (D. Del. 1980)). Indeed, individual CTGs issued by EPA are technical guidance documents, rather than regulations. *See, e.g.,* 40 C.F.R. § 59.1 (identifying "consumer and commercial product categories for which EPA has determined that CTGs will be substantially as effective as regulations in reducing VOC emissions in ozone nonattainment areas").

50 42 U.S.C. § 7502(c)(1) (2012) ("Such [nonattainment] plan provisions *shall provide* for the implementation of all reasonably available control measures as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology) . . . .") (emphasis added). The 1990 amendments required EPA to issue such guidelines for 11 specific industrial sectors, and update them periodically. *Id.* § 7511b(a) ("[T]he *Administrator shall issue control techniques guidelines*, in accordance with section 7408 of this title, *for 11 categories of stationary sources of VOC emissions for which such guidelines have not been issued as of November 15, 1990*, not including the categories referred to in paragraphs (3) and (4) of subsection (b) of this section.") (emphasis added); *id.* § 7511b(b)(1) ("[T]he Administrator *shall review, and, if necessary, update control technique guidance* issued under section 7408 of this title before November 15, 1990.") (emphasis added). Although EPA last updated many of the control technique guidelines in the 1990s, EPA has continued to issue control technique guidelines through 2009, and it continues to use them "to presumptively define VOC RACT." *See* Envtl. Prot. Agency, *SIP Planning Information Toolkit: Control Techniques Guidelines and Alternative Control Techniques Documents*, http://www.epa.gov/groundlevelozone/SIPToolkit/ctgs.html (last visited Feb. 14, 2015).

to a primitive understanding of the nature of air pollution and a lack of experience in using the modern regulatory state to address it.

One indicator of the strength of a government program is the congressional commitment to appropriations.[51] The 1955 Act authorized the yearly appropriation of $5,000,000 to the Department of Health, Education, and Welfare (Department) for five years, to enable it to carry out its functions under the Act.[52] Congress earmarked these funds for grants and contracts for research, training, and demonstration projects, for public and private agencies, institutions, and individuals.[53] In 1959, Congress extended this authorization for an additional four years, until 1964.[54] In 2014 dollars, the annual authorization for each of the nine years ranged from a high of $43,517,000 in 1956, to a low of $38,183,000 in 1964.[55] Accordingly, the appropriations authorized by Congress were not insignificant.

In summary, Congress was making an initial federal effort to undertake research and encourage cooperation with states. It imposed no mandatory obligations on the states, and only minimal obligations on the federal government. Recognizing that states and local governments have primary responsibility over air pollution, Congress was reluctant to infringe on principles of federalism. But the 1955 Act was a significant start in the development of the modern regulatory state.

III. THE 1963 ACT

On December 17, 1963, Congress passed a milestone statute with the short title of "Clean Air Act" (1963 Act).[56] What is generally viewed as the Clean Air Act of 1970, in fact, constituted a round of amendments to the 1963 Act. Although the 1963 Act was passed during the first month of the Johnson Administration, it was a response to a legislative effort of the Kennedy Administration.[57] In a special health message on February 7, 1963, President Kennedy identified the harm from air pollution in terms of costs to human health and the economy.[58] To address the problem, he recommended legislation for four purposes:

51 *See* David B. Pozen, *Self-Help and the Separation of Powers*, 124 YALE L.J. 2, 14–15 (2014) (describing Congress's authority to defund programs as one aspect of its "remedial toolkit").

52 Air Pollution Control Act of 1955, Pub. L. No. 84-159, § 5, 69 Stat. 322, 322–23 (1955).

53 *Id.*

54 Air Pollution Control Act of 1959, Pub. L. No. 86-365, § 1, 73 Stat. 646, 646.

55 *See* Bureau of Labor Statistics, *Consumer Product Index (CPI) Inflation Calculator*, http://data.bls.gov/cgi-bin/cpicalc.pl (last visited Feb. 14, 2015) (calculating U.S. inflation rates).

56 Pub. L. No. 88-206, § 14, 77 Stat. 392, 401 (1963). The long title of the 1963 Act was: "To improve, strengthen, and accelerate programs for the prevention and abatement of air pollution."

57 John T. Woolley & Gerhard Peters, AM. PRESIDENCY PROJECT, *John F. Kennedy: Special Message to the Congress on Improving the Nation's Health* (Feb. 7, 1963), http://www.presidency.ucsb.edu/ws/?pid=9549 (last visited Feb. 14, 2015) (recommending legislation authorizing the Public Health Service to conduct research and adopt measures to minimize interstate air pollution).

58 *Id.* ("Reports by leading scientists in the past year have stressed that there is overwhelming evidence linking air pollution to the aggravation of heart conditions and to

> (a) To engage in a more intensive research program permitting full investigation of the causes, effects, and control of air pollution; (b) To provide financial stimulation to States and local air pollution control agencies through project grants which will help them to initiate or improve their own control programs; (c) To conduct studies on air pollution problems of interstate or nationwide significance; and (d) To take action to abate interstate air pollution along the general lines of the existing [federal] water pollution control enforcement measures.[59]

With its emphasis on information gathering, financial stimulation, and abatement measures, President Kennedy's four objectives largely shaped the structure and content of the 1963 Act, ten months later.

A. General Provisions and Stationary Sources

It was the intent of Congress to replace the 1955 Act, and not just to amend it.[60] Indeed, the text and structure of the 1963 Act reflected a significant departure from the previous approach. It had the look and feel of a modern regulatory statute. Congress set forth specific legislative findings in a manner that is similar to section 101 of the modern CAA.[61] In addition, Congress cited additional evidence in support of the exercise of its constitutional authority over air pollution, by noting that urban areas tend to straddle state boundaries.[62] Congress refined its conception of the air pollution problem by itemizing various sources of air pollution in the form of urbanization (concentration of people), industrial development (stationary sources), and motor vehicles (mobile sources).[63]

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increases in susceptibility to chronic respiratory diseases, particularly among older people. Economic damage from air pollution amounts to as much as $11 billion every year in the United States. Agricultural losses alone total $500 million a year. Crops are stunted or destroyed, livestock become ill, and meat and milk production are reduced. In some 6,000 communities various amounts of smoke, smog, grime, or fumes reduce property values and—as dramatically shown in England last year—endanger life itself. Hospitals, department stores, office buildings, and hotels are all affected. Some cities suffer damages of up to $100 million a year.").

59 H.R. REP. NO. 88-508, at 4 (1963), *reprinted in* 1963 U.S.C.C.A.N. 1260, 1262 (Report of Committee on Interstate and Foreign Commerce, setting forth President Kennedy's four points).

60 *Id.* ("This legislation would replace the Air Pollution Control Act (act of July 14, 1955, Public Law 159, 84th Cong., as amended) with a new version, a 'Clean Air Act.' The new act constitutes a complete revision of existing law by strengthening and making more explicit the authority of the Department of Health, Education, and Welfare with respect to its activities in air pollution research, training, and demonstrations."). H.R. REP. NO. 88-1003 (1963) (Conf. Rep.), *reprinted in* 1963 U.S.C.C.A.N. 1279 (Statement of the Managers on the Part of the House) ("The House bill amended the entire act of July 14, 1955, the existing statute on air pollution. . . . The proposed conference substitute is also a complete revision of the act of July 14, 1955 . . . .").

61 Clean Air Act, Pub. L. No. 88-206, § 1, Stat. 392, 392–93 (Findings and Purposes) (1963); *see also* 42 U.S.C. § 7401 (2012) (setting forth congressional findings and declaration of purpose of the CAA).

62 § 1(a)(1), 69 Stat. at 322.

63 *Id.* at § 1(a)(2) ("[T]he growth in the amount and complexity of air pollution brought about by urbanization, industrial development, and the increasing use of motor vehicles, has resulted in mounting dangers to the public health and welfare . . . ."). As it turned out, the modern Clean Air Act would primarily rely on the regulation of stationary sources and mobile

Congress also set forth purposes that were more specific and detailed than those set forth in the 1955 Act: "(1) protect the Nation's air resources . . . ; (2) to initiate and accelerate a national research and development program . . . ; (3) to provide technical and financial assistance to State and local governments in connection with . . . air pollution prevention and control programs; and (4) to encourage . . . regional air pollution control programs."[64] This reflected a more refined approach to the problem of air pollution, and it was consistent with President Kennedy's goals in his special health message in February 1963.[65]

In addition, Congress imposed more mandatory obligations on the Department than in the 1955 Act. It required the Department to encourage cooperative activities between state and local governments, improvement in uniform state law, and interstate compacts.[66] In addition, Congress required the Secretary to encourage cooperation among federal agencies.[67] It also gave congressional consent for states to negotiate and enter interstate compacts, subject to approval by Congress.[68] Congress realized that cooperation had to be achieved not only between the federal government and the states, but also between states.

Unlike the previous law, the 1963 Act required the Secretary to establish a national research and development program for the prevention and control of air pollution.[69] It required the Secretary to conduct research and investigations regarding specific problems, provide financial assistance to air pollution control agencies, and initiate a program for research toward the development of extracting sulfur from fuels.[70] This last requirement recognized the specific problem of sulfur dioxide emissions from the

sources, and not human beings per se. *See* Teal Jordan White, *Clean Air Act Mayhem: EPA's Tailoring Rule Stitches Greenhouse Gas Emissions in the Wrong Regulatory Fitting*, 18 TEX. WESLEYAN L. REV. 407, 421 (2011) ("The Clean Air Act is primarily devoted to regulation of mobile and stationary sources of air pollution."). But the modern CAA also authorizes the regulation of human activities. Section 110 requires states to include control measures, means, or techniques in their SIPs. 42 U.S.C. § 7410(a)(2)(A). But it does not define these terms. By regulation, a SIP must set forth a "control strategy." 40 C.F.R. § 51.111 (2012). EPA defines a "control strategy" to mean "a combination of measures designated to achieve the aggregate reduction of emissions necessary for attainment and maintenance of national standards including, but not limited to, measures such as: . . . (3) [c]losing or relocation of *residential*, commercial, or industrial facilities." (emphasis added). 40 C.F.R. § 51.100(n). Therefore, EPA may regulate human activities from residential facilities, under section 110. Apart from this "cooperative federalism" approach, EPA also regulates human activities directly under section 111. For example, EPA has regulated residential wood burning units. 40 C.F.R. §§ 60.530–60.539b (Standards of Performance for New Residential Wood Heaters). Recently, EPA has proposed amendments of these standards. Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces, and New Residential Masonry Heaters, 79 Fed. Reg. 6329 (Feb. 3, 2014).

64 Pub. L. No. 88-206, § 1(b), 77 Stat. at 392–93 (internal quotation marks omitted).

65 Woolley & Peters, *supra* note 57.

66 § 2(a), 77 Stat. at 393 (Cooperative Activities and Uniform Laws).

67 *Id.* § 2(b).

68 *Id.* § 2(c).

69 *Id.* § 3 at 394–95 (Research, Investigations, Training, and Other Activities).

70 *Id.* § 3(a)(1)–(4) at 394.

burning of fossil fuels, which present harm to human health.[71] Therefore, the 1963 law enhanced and refined the existing authority of the Secretary.

But the most consequential of all powers authorized in the 1963 Act was contained in section 3(c). This section did two important things. First, it required the Secretary to conduct research on the "harmful effects on the health or welfare of persons by the various known air pollution agents (or combination of agents)."[72] Second, it required the Secretary to publish "criteria" for informational purposes and make them available to interested agencies if certain conditions were met.[73] If the Secretary determined there was a particular air pollution agent—or combination of agents—present in the air in certain quantities producing effects harmful to the health or welfare of persons, then the Secretary was required to compile and publish criteria.[74] The criteria had to reflect accurately the latest scientific knowledge useful in indicating "the kind and extent of such effects which may be expected from the presence of such air pollution agent (or combination of agents) in the air in varying quantities."[75] The Secretary was required to "revise and add to such criteria whenever necessary to reflect accurately developing scientific knowledge."[76] In summary, the term "criteria" referred to the relevant information that would support the development of air quality standards, rather than the air quality standards themselves.

This complex series of requirements represented a new framework for thinking about air pollution. Because these requirements are similar to those in the modern CAA, the parsing of them is critical to understanding the modern statute.[77] The reference to "air pollution agent" or combination of agents reflected the principle of synergy, which recognizes that the cumulative effects of a group of pollutants may be different and greater than their individual effects.[78] The language "present in the air in certain

71 *See* ALAN H. LOCKWOOD ET AL., PHYSICIANS FOR SOC. RESPONSIBILITY, COAL'S ASSAULT ON HUMAN HEALTH vi, 9, 19, 30 (2009) (identifying sulfur dioxide as hazardous to human health). *See also Sulfur Dioxide: Health*, http://www.epa.gov/air/sulfurdioxide/health.html (last visited Feb. 14, 2015) (summarizing harmful effects of sulfur dioxide on human health).

72 § 3(c)(1), 77 Stat. at 395.

73 *Id.* § 3(c)(2). Although the language "informational purposes" might appear weak and ineffectual, the legislative history demonstrates that the publication of air quality criteria was not intended to be limited to those purposes. H.R. REP. NO. 88-1003 (1963) (Conf. Rep.), *reprinted in* 1963 U.S.C.C.A.N. 1281 ("[T]he requirement that this criteria be published for informational purposes only has been modified to eliminate the requirement that it be published 'only' for informational purposes.").

74 § 3(c)(2), 77 Stat. at 395.

75 *Id.*

76 *Id.*

77 *See* 42 U.S.C. § 7408(a)(2) (2012) ("Air quality criteria for an air pollutant shall accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air, in varying quantities.").

78 *See* Robert W. Collin & Robin Morris Collin, *The Role of Communities in Environmental Decisions: Communities Speaking for Themselves*, 13 J. ENVTL. L. & LITIG. 37, 53 (1998) ("[S]ome chemicals emitted into the environment may react synergistically with others with a more pernicious effect on the environment (including humans). Chemical synergism is the

quantities" recognized that this approach to the problem of air pollution was quantitative in nature, and not just qualitative, unlike the common law nuisance approach to air pollution.[79] Advances in science and technology that enabled the measurement of contaminants at concentrations of parts per million and parts per billion improved the ability to determine the nature of the harm, and thereby facilitated the development of the modern regulatory state.[80] The language "producing effects harmful to the health or welfare of persons" reflected the common law concept of harm, which eventually evolved into the statutory concept of "endangerment."[81] Basing the criteria on the "latest scientific knowledge" was significant in assuring that decisions would be based on reliable data.[82] The language "kind and extent of such effects" implicates the concept of causation. The standard "may be expected from the presence of such air pollution agent in the air at

simultaneous action of separate chemicals which together have greater total effect than the sum of their individual effects."). This is reflected in the modern CAA definition of "air pollutant," which specifically includes precursors, or air pollutant agents that react to form other air pollutants. *See* 42 U.S.C. § 7602(g) ("The term 'air pollutant' means any air pollution agent *or combination of such agents* . . . which is emitted into or otherwise enters the ambient air. Such term *includes any precursors to the formation of any air pollutant*, to the extent the Administrator has identified such precursor or precursors for the particular purpose for which the term 'air pollutant' is used.") (emphasis added).

79 At common law, a person who was injured by air pollution could bring a claim for nuisance in state court, seeking the remedy of an injunction. *See* Thomas C. Buchele, *State Common Law Actions and Federal Pollution Control Statutes: Can They Work Together?*, 1986 U. ILL. L. REV. 609, 609 (1986) (discussing traditional use of common law tort suits, such as nuisance claims, to protect private interests affected by pollution). Nuisance is a field of tort liability. Schwartz, *supra* note 32, at 799. A cause of action for nuisance is based on an unreasonable interference in the use and enjoyment of property. *See, e.g.*, Georgia v. Tenn. Copper Co., 206 U.S. 230, 238 (1907) (holding that the noxious gases from copper smelters in Tennessee created a nuisance when they destroyed forests, orchards, and crops in Georgia); Spur Indus. v. Del Webb Dev. Co., 494 P.2d 700, 706, 708 (Ariz. 1972) (applying the doctrine of nuisance to agricultural and livestock activities, the court held that stench from manure and infestation of flies from a feedlot presented a public nuisance, but the plaintiff housing development company was required to indemnify the owner of the feedlot for its costs of relocation, under the "coming to the nuisance" doctrine); Madison v. Ducktown Sulphur, Copper & Iron Co., 83 S.W. 658, 659, 662 (Tenn. 1904) (applying the doctrine of nuisance to emissions from industrial facilities, but denying injunctive relief, on the facts); William Aldred's Case, (1611) 77 Eng. Rep. 816 (K.B.) 817 (holding that the odors from a pig sty were a nuisance). At common law, nuisance was measured in qualitative terms, rather than quantitative terms. *See* CAL. CIV. CODE § 3479 (West 2012) ("Anything which is injurious to health, . . . so as to interfere with the comfortable enjoyment of life or property, . . . is a nuisance."); Copart Indus., Inc. v. Consol. Edison Co. of N.Y., Inc., 362 N.E.2d 968, 971 (N.Y. 1977) ("[T]oday it is recognized that one is subject to liability for a private nuisance if his conduct is a legal cause of the invasion of the interest in the private use and enjoyment of land and such invasion is (1) intentional and unreasonable, (2) negligent or reckless, or (3) actionable under the rules governing liability for abnormally dangerous conditions or activities.").

80 *See* Gerald W. Phillips, *Rethinking Restoration: Risk Based Corrective Action and the Future of Economic Regulation*, 16 N. ILL. U. L. REV. 659, 661–62 (1996) (discussing increases in ability of regulators to detect contaminants resulting from improvements in science and technology).

81 § 3(c)(1), 77 Stat. at 395. *See supra* notes 33–34.

82 *See* § 3(c)(2), 77 Stat. at 395.

varying quantities" is a modest standard that did not require actual impacts, but only anticipated impacts.[83] By making it easier to identify the nature of harm and the causation of that harm, these legislative innovations improved the states' abilities to address air pollution.

Imposing a requirement to publish air quality criteria was an important step in the construction of the modern regulatory state. It was within the Secretary's discretion to make a factual finding whether an air pollution agent was producing harmful effects, since the 1963 Act did not tell the Secretary whether or not to make such a finding.[84] However, once the Secretary made an affirmative finding, the 1963 Act imposed mandatory obligations on the Secretary.[85] This pairing of discretionary powers and mandatory obligations is an important feature in the modern CAA, and forms a statutory trigger for EPA action under a number of programs.[86] It would turn out to be a critical factor in the growth in the power of EPA, through judicial application of the doctrine of deference under *Chevron v. Natural Resources Defense Council*.[87] Judicial deference to EPA is at its highest when the agency is making factual determinations in matters that are highly scientific or technical.[88]

The 1963 Act expanded the practice of providing funding to state and local governments, by granting up to two-thirds the cost of developing, establishing, and improving programs for the prevention and control of air pollution to air pollution control agencies, and up to three-quarters of the cost in the case of regional air pollution programs.[89] By offering a higher

83 *See id.* § 3(c)(1).

84 *See id.* § 3(c)(2).

85 *See id.* ("Whenever he determines that there is a particular air pollution agent . . . producing effects harmful to the health or welfare of persons, the Secretary *shall* compile and publish criteria reflecting accurately the latest scientific knowledge useful in indicating the kind and extent of such effects which may be expected from the presence of such air pollution agent (or combination of agents) in the air in varying quantities.") (emphasis added).

86 *See* 42 U.S.C. § 7408(a)(1) ("[T]he Administrator shall within 30 days after December 31, 1970, publish, and shall from time to time thereafter revise, a list which includes each air pollutant . . . emissions of which, in his judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare."); *id.* § 7411(b)(1)(A) ("The Administrator shall . . . publish (and from time to time thereafter shall revise) a list of categories of stationary sources. He shall include a category of sources in such list if in his judgment it causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare."); *id.* § 7412(n)(1) ("The Administrator shall regulate electric utility steam generating units under this section, if the Administrator finds such regulation is appropriate and necessary after considering the results of the study required by this subparagraph."); *id.* § 7521(a)(1) ("The Administrator shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare."). *See supra* note 33.

87 467 U.S. 837 (1984).

88 *See* Am. Farm Bureau Fed'n v. EPA, 559 F.3d 512, 519 (D.C. Cir. 2009) ("We give an 'extreme degree of deference to the agency when it is evaluating scientific data within its technical expertise,' reviewing the agency's action to 'ensure that the EPA has examined the relevant data and has articulated an adequate explanation for its action.'" (quoting City of Waukesha v. EPA, 320 F.3d 228, 248 (D.C. Cir. 2003))).

89 § 4, 77 Stat. at 395 (Grants for Support of Air Pollution Control Programs).

financial incentive for regional programs, Congress displayed a preference for a cooperative approach among states. This innovation laid the roots for modern regional approaches to the interstate problems of ozone,[90] sulfur dioxide and nitrogen oxides,[91] and greenhouse gases.[92]

The 1963 Act facilitated the transition from the old common law nuisance approach to the modern regulatory approach, by codifying the new regulatory harm of endangerment and making available the remedy of abatement.[93] The 1963 Act provided that pollution of the air, which "endangers the health, or welfare of any persons" is subject to abatement.[94] Injunctions had been available at common law as a judicial remedy for private nuisance and public nuisance.[95] Given the common law outlook of the time, it was natural for Congress to codify this judicial remedy in developing a federal role in the area of air pollution. Moreover, Congress had adopted a similar approach in the existing Federal Water Pollution Control Act.[96]

Congress tailored the Department's authority to address endangerment according to whether the air pollution was interstate or intrastate, allowing a

90 In the 1990 Clean Air Amendments, Congress created an Ozone Transport Region for 11 northeastern states and the District of Columbia, and directed EPA to address ozone through a regional approach. 42 U.S.C. § 7511c. Congress also granted EPA general authority to create interstate transport commissions, to address a violation of a national ambient air quality standard. *Id.* § 7506a(a).

91 Nitrogren oxides are precursors to ozone. EPA, *Ground Level Ozone: Frequently Asked Questions*, http://www.epa.gov/airquality/ozonepollution/faq.html (last visited Feb. 14, 2015) ("Tropos[p]heric, or ground level ozone, is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NO_x) and volatile organic compounds (VOC)."). Sulfur dioxide and nitrogen oxides are precursors to particulate matter. EPA, *What Is Acid Rain?*, http://www.epa.gov/acidrain/what/index.html (last visited Feb. 14, 2015) ("'Acid rain' is a broad term referring to a mixture of wet and dry deposition (deposited material) from the atmosphere containing higher than normal amounts of nitric and sulfuric acids. The precursors, or chemical forerunners, of acid rain formation result from both natural sources, such as volcanoes and decaying vegetation, and man-made sources, primarily emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) resulting from fossil fuel combustion."). Influenced by the success of a regional approach to sulfur dioxide and nitrogen oxides in the Acid Rain Program under the 1990 Clean Air Amendments, EPA adopted a regional approach to these air pollutants through the Clean Air Interstate Rule and then through the Cross-State Air Pollution Rule, a rule which has been upheld by the United States Supreme Court. *See* EPA v. EME Homer City Generation, L.P., 134 S. Ct. 1584, 1600–01 (2014).

92 The Regional Greenhouse Gas Initiative is a voluntary regional program involving a number of northeastern states, operated pursuant to a Memorandum of Understanding dated December 20, 2005, as opposed to a statutory or regulatory requirement. *See* Memorandum of Understanding from the States of Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York, and Vermont on Regional Greenhouse Gas Initiative (Dec. 20, 2005), *available at* http://rggi.org/docs/mou_final_12_20_05.pdf.

93 § 5(a), 77 Stat. at 396.

94 *Id.*

95 *See* DAN B. DOBBS ET AL., TORTS AND COMPENSATION: PERSONAL ACCOUNTABILITY AND SOCIAL RESPONSIBILITY FOR INJURY 613 (6th ed. 2009).

96 Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1387 (2012), H.R. REP. NO. 88-508, at 8 (1963), *reprinted in* 1963 U.S.C.C.A.N. 1260, 1266 ("Section 5 establishes the manner for abating air pollution. In substance it is quite similar to the comparable provisions in section 8 of the Federal Water Pollution Control Act.").

greater exercise of federal authority in the former case than in the latter case.[97] Upon the request of a state or local government authority regarding interstate air pollution alleged to endanger the health or welfare of persons in another state, the Secretary was required to issue a notice of a conference among the interested agencies.[98] To trigger this requirement, the discharge only had to be "causing or contributing to such pollution," which was another significant legislative innovation.[99] This language reflected a liberalization of the concept of causation developed at common law. It made it easier to establish that a particular source of air emissions was a cause of a particular harm, where there were multiple sources contributing to the harm.[100] To some extent, the common law also evolved to address the problem of establishing tort liability for one harm caused by more than one defendant, by holding a joint tortfeasor liable when it was a significant factor in causing a plaintiff's harm.[101] The new statutory language performed a similar function.

Upon the request of a state or local government authority regarding intrastate air pollution, the Secretary was required to issue a notice of a conference, but only if there was "alleged air pollution which is endangering the health or welfare of persons," a higher standard that required actual endangerment, and not just alleged endangerment.[102] In addition, a curious mixture of mandatory and discretionary duties allowed the Secretary to avoid the mandatory obligation to issue a notice of conference by exercising discretion not to assert federal authority.[103] Both requirements made it more difficult for the federal government to intervene in the case of intrastate pollution control, as compared with interstate air pollution.[104] While it was

97 *See generally* § 5(c)(1)(A)–(B), 77 Stat. at 396 (setting forth different procedures for abating interstate and intrastate air pollution).

98 *Id.* § 5(c)(1)(A) (whenever a state or local government made a request to the Secretary concerning "air pollution which is alleged to endanger the health or welfare of persons in a State other than that in which the discharge . . . originate[d]," the Secretary was required to issue a notice of a conference). This pairing of a mandatory obligation—the obligation to call a conference—with a discretionary determination—a determination that there is endangerment—was similar to the approach of requiring the Department to publish air quality criteria if it determined there was a particular air pollutant causing harmful effects on human health.

99 *Id.*

100 *See id.*

101 *See* SCHWARTZ ET AL., *supra* note 32, at 362 (citing Bierczynski v. Rogers, 239 A.2d 218 (Del. 1968)) ("[A]s a general rule, participation in a motor vehicle race on a public highway is an act of concurrent negligence imposing liability on each participant for any injury to a non-participant resulting from the race."). The common law recognized joint and several liability in three situations: 1) defendants "acting in concert"; 2) "defendants fail[ing] to perform a common duty to the plaintiff" and, 3) "defendants who acted independently to cause an indivisible harm." *Id.* at 363–64.

102 § 5(c)(1)(B), 77 Stat. at 396.

103 *Id.* (giving the Secretary discretion to determine that "the effect of such pollution is not of such significance as to warrant exercise of Federal jurisdiction under this section").

104 *See id.*

concerned with the problem of air pollution, Congress was sensitive to infringing on the authority of state and local governments.[105]

Under a third scenario involving interstate pollution, the Secretary had authority to call a conference if the Secretary had reason to believe that air pollution was occurring and was endangering health and welfare of persons in another state.[106] This gave the Department the authority to address interstate air pollution, even in the absence of a request by a state or local government authority.

The 1963 Act granted powers to the Secretary to resolve disputes over interstate and intrastate air pollution.[107] Following a conference procedure, if the Secretary believed that effective progress was not being made, and that the health or welfare of any persons was being endangered, the Secretary was required to recommend to the state or local agency that necessary remedial action be taken, and allow six months for the recommended action.[108] Administrative enforcement provisions backed up these powers.[109] If in the judgment of the Secretary the remedial action was not taken, he was required to call a public hearing.[110] The hearing board was authorized to make findings as to whether pollution was occurring and whether "effective progress toward abatement" was being made.[111] If the board made this finding, it was required to make recommendations to the Secretary concerning the measures it found to be "reasonable and suitable to secure abatement of such pollution."[112] The Secretary was required to send those findings to interested agencies and parties, with a notice specifying a reasonable time—at least six months—to secure abatement.[113]

In the 1963 Act, Congress supported this administrative procedure with a judicial enforcement procedure.[114] In the case of interstate pollution, if action to secure abatement was not taken, the Secretary could request that the Attorney General commence a suit on behalf of the United States to secure abatement.[115] This laid the roots for the use of injunctions against interstate pollution in the modern CAA.[116] Unlike the 1963 Act, the modern

105 H.R. REP. NO. 88-508, at 9 (1963), *reprinted in* 1963 U.S.C.C.A.N. 1260, 1267 ("The committee believes that the procedures provided constitute a reasonable balance between the primary rights of the States to control air pollution within their boundaries and the rights of States seriously affected by pollution from another State to have available to them a practical remedy.").

106 § 5(c)(1)(C), 77 Stat. at 396–97.

107 *Id.* § 5(d), at 397.

108 *Id.*

109 *Id.* § 5(e).

110 *Id.* § 5(e)(1).

111 *Id.* § 5(e)(2).

112 *Id.*

113 *Id.* § 5(e)(3).

114 *Id.* § 5(f), at 397–98.

115 *Id.* § 5(f)(1).

116 *See, e.g.*, 42 U.S.C. § 7426(b) (2012) (allowing for a petition for a finding that a major source is emitting pollution in violation of the good neighbor provision of the CAA). Section 126 of the modern CAA, which is triggered by a petition from a state or political subdivision, authorizes the remedy of injunctive relief by EPA if it makes a finding that a major source or

CAA specifies in greater detail the sanctions that may be imposed. They are mandated by operation of law and do not depend on the discretion of a federal agency to commence an action in federal court.[117] But, the underlying principle is the same. In both cases, the law codified the remedy of abatement for interstate pollution and set forth provisions to prevent a stationary source from operating in violation of the law.[118]

In the case of intrastate pollution, at the request of a Governor, the Secretary was required to provide "technical and other assistance" to a state in judicial proceedings, or to commence a suit as in the case of interstate pollution.[119] While the 1963 Act might appear weak and ineffectual because the federal authority to seek injunctive relief to some extent depended on a state first making a request for assistance, the same is true under modern section 126.[120] By so limiting EPA's injunctive powers, Congress intended that EPA not dictate unilaterally to the states when and how to seek abatement of air pollution.

The 1963 Act provided standards for decisions in disputes over interstate and intrastate air pollution.[121] For judicial actions, a court was required to give due consideration to the "practicability of complying with such standards . . . to the physical and economic feasibility of securing abatement[and to] . . . the public interest and the equities of the case."[122] Still, the standard was not a significant departure from the common law nuisance standard, which required a balancing of the equities.[123] The considerations of practicability, feasibility, public interest, and equities specified in the 1963 Act were relevant considerations encompassed by the

group of sources is contributing to a neighboring state's nonattainment of the national ambient air quality standards, or is interfering with a neighboring state's maintenance of the standards. *See id.* § 7426(c) (specifying penalties for violations). This authorization for injunctive relief is tied to the good neighbor provision, which prohibits a state from contributing significantly to nonattainment with a national ambient air quality standard, or interfering with maintenance of attainment by another state. *Id.* § 7410(a)(2)(D)(i).

117 *See id.* § 7426(c).

118 Although modern section 126 imposes sanctions without the need for a judicial action by EPA, the section is only as effective as it is enforceable, and ultimately its effectiveness is dependent upon section 113, the general enforcement section of the CAA, which authorizes judicial enforcement action by EPA. *See id.* § 7413(a)(5)(C) (authorizing civil actions in federal court for a violation of subchapter I of the CAA which includes section 126). Therefore, the underlying premises of the 1963 abatement provision and modern section 126 are similar.

119 § 5(f)(2), 77 Stat. at 398.

120 42 U.S.C. § 7426(b) ("Any State or political subdivision may petition the Administrator for a finding that any major source or group of stationary sources emits or would emit any air pollutant in violation of the prohibition of section 7410(a)(2)(D)(ii) of this title or this section. Within 60 days after receipt of any petition under this subsection and after public hearing, the Administrator shall make such a finding or deny the petition.").

121 § 5(g), 77 Stat. at 398.

122 *Id.*

123 *See* Jared A. Goldstein, *Equitable Balancing in the Age of Statutes*, 96 VA. L. REV. 485, 488 (2010) ("[The doctrine of equitable balancing] first developed during the period of rapid industrialization following the Civil War, when some state courts sought a mechanism to protect industrial interests from injunctions in common law nuisance actions challenging air and water pollution.").

common law nuisance standard of reasonableness.[124] Such considerations made it particularly difficult for plaintiffs to shut down a facility through a common law nuisance action.[125]

B. Mobile Sources

The 1963 Act represented Congress's first significant effort to create a federal role to address air pollution from mobile sources such as cars and trucks.[126] It required the Secretary to encourage the continued efforts of the automotive and fuel industry to "develop devices and fuels to prevent pollutants from being discharged from the exhaust of automotive vehicles."[127] In addition, it required the Secretary to "maintain liaison with automotive vehicle, exhaust control device, and fuel manufacturers."[128] A technical committee composed of representatives of these parties was required to meet periodically to "evaluate progress in the development of such devices and fuels and to develop and recommend research programs."[129] Periodically, the Secretary was required to report to Congress "on measures taken toward the resolution of the vehicle exhaust pollution problem and efforts to improve fuels."[130] Thus, Congress set the framework for an approach to air emissions from mobile sources that contemplated addressing air pollution on the front end through the fuel manufacturer, on the back end through the emissions control device manufacturer, and in the design of the actual vehicle through the automobile manufacturer.[131]

124 *See supra* note 79, at 613–14 (noting that common law nuisance requires balancing both parties' interests, the local conditions and laws, and "whether the defendant could have avoided or prevented the conduct which harmed the plaintiff").

125 *See, e.g.*, Boomer v. Atlantic Cement Co., 257 N.E.2d 870, 874 (N.Y. 1970) ("It has been said that permanent damages are allowed where the loss recoverable would obviously be small as compared with the cost of removal of the nuisance.") (citation omitted). In *Boomer*, the Court of Appeals denied the request for injunctive relief and instead awarded damages for past harm. *Id.* at 875. This case is a classic example of the reluctance of common law courts to stop a defendant from operating an industrial facility, and their preference for making an award of damages to a plaintiff.

126 David E. Adelman, *Environmental Federalism When Numbers Matter More Than Size*, 32 UCLA J. ENVTL. L. & POL'Y 238, 256 (2014) ("Just two years later, the federal government advanced to regulating emissions from motor vehicles under the Motor Vehicle Pollution Control Act (MVPCA), mirroring earlier developments in California."). In a previous law, Congress had authorized and directed the Surgeon General of the Public Health Service to conduct a study and report to Congress regarding the effects on public health from the discharges of substances in the atmosphere from the exhausts of motor vehicles. *See* Act of June 8, 1960, Pub. L. No. 86-493, § 1, 74 Stat. 162, 162. However, it did not impose any obligations on the Department in connection with the manufacturers of automotive vehicles, exhaust control devices, and fuels. *See id.* §§ 1–3, 74 Stat. at 162.

127 § 6(a), 77 Stat. at 399 (Automotive Vehicle and Fuel Pollution).

128 *Id.*

129 *Id.*

130 *Id.* § 6(b).

131 *See id.* § 6(a).

C. Miscellaneous Provisions

In some respects, the 1963 Act was ahead of its time. Congress expressed an intent that a federal agency having jurisdiction over a "building, installation, or other property" cooperate with the Secretary and with "any air pollution control agency in preventing and controlling the pollution of the air."[132] This language would ultimately evolve into Congress's definition of a "stationary source" as a "building, structure, facility, or installation"—an important definition in the modern CAA.[133] In addition, Congress authorized the Secretary to identify particular federal facilities that would be subject to a federal air permit requirement, nearly fourteen years before it created a federal permit requirement for industrial facilities.[134] By 1965, the Department grew ambivalent to the notion of such a permit, admitting a lack of experience with the 1963 statutory provision, expressing concerns about one federal agency regulating another, and preferring a standards-based approach.[135] In 1970, Congress rejected such a permitting approach and instead developed the "New Source Performance Standards" program of section 111, which imposes numerical emissions limitations for particular industrial sectors.[136]

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132 *Id.* § 7(a) (Cooperation by Federal Agencies to Control Air Pollution from Federal Facilities).

133 *See* 42 U.S.C. § 7411(a)(3) (2012) (defining "stationary source" as "any building, structure, facility, or installation which emits or may emit an air pollutant").

134 § 7(b), 77 Stat. at 399 (authorizing the Secretary to establish classes of buildings for which an air permit would be required). The concept of a federal permit was abandoned in the 1970 amendments, which did not impose any federal permitting requirements, either for federal facilities or for nonfederal facilities. *See* Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676, 1689–90. In the 1977 amendments, Congress created the first federal permit program, the new source review program for new and modified stationary sources. *See* Clean Air Act Amendments of 1977, Pub. L. No. 95-95, §§ 127 (Prevention of significant deterioration), 129 (Nonattainment areas); 91 Stat. 685, 731–42, 745–51 (1977). In the 1990 amendments, Congress created a second federal permit program, known as the Title V Permit Program. *See* Clean Air Act Amendments of 1990, Pub. L. No. 101-549, §§ 501–507, 104 Stat. 2399, 2635–48. All these permit programs apply to large sources. *See* Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 127, 91 Stat. 685, 731, 735 (requiring a permit for a "major emitting facility" under the Prevention of Significant Deterioration program, in section 165 of the CAA); § 129, 91 Stat. 685, 745, 746–47 (requiring a permit for a "major stationary source" under the Nonattainment New Source Review program, in section 172(b)(6) of the CAA); Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 502(a), 104 Stat. 2399, 2635 (requiring a permit for an "affected source" under the Acid Rain Program in Title IV, a "major source" in Title V, a source subject to section 111 new source performance standards, a source subject to section 112 national emission standards for hazardous air pollutants, or a source required to have a permit under the Prevention of Significant Deterioration program or the Nonattainment New Source Review program in parts C and D in Title I). Today, there is no permitting requirement for federal facilities as such, although facilities that happen to be owned by the federal government are subject to the same regulations of the CAA as are private facilities. *Id.* § 7418(a).

135 H.R. REP. NO. 89-899, at 20 (1965), *reprinted in* 1965 U.S.C.C.A.N. 3608, 3626 (letter of Department of Health, Education, and Welfare) ("We are in accord with the deletion of the permit provision only if the standard-setting authority implicit in the present act is otherwise provided.").

136 § 4, 84 Stat. at 1683–84 (adding a new section 111 authorizing EPA to establish emissions limitations by industry type).

The 1963 Act made another important step toward the modern regulatory state by authorizing the Secretary to promulgate air pollution regulations for the first time.[137] Congress intended that the Secretary have the authority to promulgate substantive regulations, as well as procedural regulations.[138] By doing so, Congress intended to establish a long-term federal regulatory program for air pollution.

In contrast to the sparse definitions section of the 1955 Act, the 1963 Act contained expanded definitions of entities subject to regulation, which made it look more like a modern regulatory statute.[139] It also contained one important substantive definition. The term "adverse effects on welfare" was defined to include "injury to agricultural crops and livestock, damage to and the deterioration of property, and hazards to transportation."[140] The origin of this language was the policy statement in the 1955 Act, identifying impacts from air pollution.[141] By incorporating these impacts into the definition of "welfare," Congress strengthened the concept of "welfare" and its connection to commerce, the constitutional basis for its authority over air pollution.

D. Appropriations

The 1963 Act significantly increased the level of authorized appropriations, compared with the 1955 Act. Congress authorized appropriations of $25,000,000 for 1965; $30,000,000 for 1966; and $35,000,000 for 1967.[142] Three years later, Congress increased the authorization to $46,000,000 for 1967; $66,000,000 for 1968; and $74,000,000 for 1969.[143] In 2014 dollars, this would correspond to $187,885,000 in 1965; $219,200,000 in 1966; $248,076,000 in 1967; $448,982,000 in 1968; and $477,342,000 in 1969.[144] Accordingly, funding was significant.

137 § 8(a), 77 Stat. at 400 ("The Secretary is authorized to prescribe such regulations as are necessary to carry out his functions under this Act.").

138 H.R. REP. NO. 88-1003, at 16 (1963) (Conf. Rep.), *reprinted in* 1963 U.S.C.C.A.N. 1279, 1285 ("The House bill authorized the Secretary to prescribe such procedural regulations as are needed to carry out his functions under the act. The Senate amendment eliminated the word 'procedural' as being too restrictive upon the authority which the Secretary needs to carry out the act. The proposed conference substitute is the same as the Senate amendment in this regard.").

139 § 9, 77 Stat. at 400 (Definitions). In the 1955 law, Congress had only included simple definitions of "State air pollution control agency," "local government air pollution control agency," and "State." Air Pollution Control Act of 1955, Pub. L. No. 84-159, § 6, 69 Stat. 322, 323.

140 §9(g), 77 Stat. at 400 (Definitions).

141 § 1, 69 Stat. at 322.

142 §13(b), 77 Stat. at 401 (Appropriations).

143 Clean Air Act Amendments of 1966, Pub. L. No. 89-675, § 2(a), 80 Stat. 954, 954 (1966).

144 *See CPI Inflation Calculator*, *supra* note 55.

IV. A CASE STUDY ON THE ABATEMENT CONFERENCE AND JUDICIAL ENFORCEMENT PROCEDURE: *UNITED STATES V. BISHOP PROCESSING COMPANY*

The traditional view of historians is that the enforcement scheme under the 1963 Act was a near-complete failure because only one reported case made it to federal court—*United States v. Bishop Processing Co.* (*Bishop Processing Co.*).[145] But the reported decisions in that case demonstrate a sophisticated framework for enforcement, which provided a remedy of injunctive relief in federal court. The federal government succeeded in obtaining an order to cease operations in litigation that took less than five years.[146] *Bishop Processing Co.* involved three reported decisions, all decided in favor of the federal government and against the company.[147] That case is instructive because it reflected important steps in the evolution of the enforcement provisions of the CAA. Contrary to the traditional view, the evolution was not dramatic in nature, but subtle and nuanced.

The federal case started when the State of Delaware made a request under the 1963 Act for the Department to hold a conference to address the company's discharge of malodorous noxious pollutants into the air in Selbyville, Delaware, from its chicken processing plant in Bishopville, Maryland.[148] In response, the Department held a conference in November 1965.[149] The company did not formally appear at the conference, and it did not ask for the opportunity to make a statement.[150] Indeed, the 1963 Act only required notification to the states and municipalities and not to the alleged polluter.[151] Consistent with the 1963 Act, the Department provided a summary of the conference discussions and recommendations for remedial action, calling upon the State of Maryland to require the company to

145 423 F.2d 469 (4th Cir. 1970). For further discussion see WILLIAM H. RODGERS, JR., 1 ENVIRONMENTAL LAW AIR AND WATER 180 (1986) ("A single case 'survived the gauntlet' of these interminable negotiating sessions to make it to the courts. That was the case of the Bishop Processing Company . . . that represents a kind of legendary paean to nonenforcement of the environmental laws."). *See also* FRANK P. GRAD, TREATISE ON ENVIRONMENTAL LAW 2-76 (2014) ("It is the history of the *Bishop Processing Company* case which provided convincing proof of need for more stringent and more direct enforcement sanctions, particularly in the case of interstate air pollution."); Arnold W. Reitze, Jr., *The Legislative History of U.S. Air Pollution Control*, 36 HOUS. L. REV. 679, 699 (1999) ("Ten enforcement conferences were held, but only one was the subject of a judicial opinion—*United States v. Bishop Processing Co.*").

146 *See* GRAD, *supra* note 145, at 2-72, 2-76.

147 *Bishop Processing Co.*, 423 F.2d at 473; United States v. Bishop Processing Co., 287 F. Supp. 624, 636 (D. Md. 1968); Bishop Processing Co. v. Gardner, 275 F. Supp. 780, 784 (D. Md. 1967).

148 Bishop Processing Co. v. Gardner, 275 F. Supp. at 781. The Town of Selbyville, in Delaware is located approximately 2.5 miles from the Town of Bishopville, in Maryland, across the east-west state border. UNITED STATES GEOLOGICAL SURVEY, SELBYVILLE QUADRANGLE DELAWARE-MARYLAND 7.5 MINUTE SERIES (2011).

149 Bishop Processing Co. v. Gardner, 275 F. Supp. at 781.

150 *Id.*

151 Clean Air Act, Pub. L. No. 88-206, § 5(c)(1)(A), 77 Stat. 392, 396 (1963).

complete certain remedial action by September 1, 1966, a period of at least six months.[152]

After Bishop failed to take remedial action within the prescribed time period, the Department issued a notice of a public hearing to the company in April 1967.[153] Following hearing procedures set forth in proposed Department regulations, the hearing board conducted a hearing with Bishop in May 1967.[154] The hearing board sent findings of fact and recommendations to the Department.[155] On May 25, 1967, the Department directed the company to abate the air pollution by December 1, 1967—a period of at least six months—by installing air pollution control equipment.[156] In the event of a failure to comply with the order, the 1963 Act did not allow the Department to impose immediate sanctions.[157] Rather, the remedy was to refer the matter to the Attorney General for civil suit in federal court.[158]

To preempt an anticipated enforcement action by the Attorney General before the December 1, 1967 deadline, the company filed a petition under the Administrative Procedure Act (APA)[159] in the United States District Court for the District of Maryland, seeking a declaratory judgment and judicial review of the hearing board's rulings.[160] In the first reported decision in the *Bishop Processing Co.* case, that court granted the Department's motion to dismiss the company's petition.[161] It reasoned that an action would be available under the APA only if there was no adequate remedy in a court,

152 Bishop Processing Co. v. Gardner, 275 F. Supp. at 781; § 5(d), 77 Stat. at 397 ("The Secretary shall allow at least six months from the date he makes such recommendations for the taking of such recommended action.").

153 Bishop Processing Co. v. Gardner, 275 F. Supp. at 781; *see also* § 5(e)(1), 77 Stat. at 397 (requiring that "[a]t least three weeks' prior notice of such hearing shall be given . . . to the alleged polluter or polluters" after remedial action has not been taken).

154 *See* Public Hearings Under Clean Air Act, 32 Fed. Reg. 5514 (proposed Apr. 4, 1967) (to be codified at 40 C.F.R. pt. 81); Bishop Processing Co. v. Gardner, 275 F. Supp. at 781.

155 Bishop Processing Co. v. Gardner, 275 F. Supp. at 781; *see also* § 5(e)(2), 77 Stat. at 397 ("If the hearing board finds such pollution is occurring and effective progress toward abatement thereof is not being made it shall make recommendations to the Secretary concerning the measures, if any, which it finds to be reasonable and suitable to secure abatement of such pollution.").

156 Bishop Processing Co. v. Gardner, 275 F. Supp. at 782 (directing the company to "'cease and desist from discharging malodorous air pollutants and to abate such air pollution not later than December 1, 1967, by the installation, completion and placing into operation adequate and effective control systems and devices, as recommended by the Hearing Board'"); *see also* § 5(e)(3), 77 Stat. at 397 ("The Secretary shall send such findings and recommendations to the person or persons discharging any matter causing or contributing to such pollution; to air pollution control agencies of the State or States . . . together with a notice specifying a reasonable time (not less than six months) to secure abatement of such pollution.").

157 *See* § 5(f)(1), 77 Stat. at 397–98 (only authorizing the Secretary to request that the Attorney General bring a suit "to secure abatement of pollution," in the case of interstate pollution).

158 *Id.*

159 5 U.S.C. §§ 551–559, 701–706, 1305, 3105, 3344, 4301, 5335, 5372, 7521 (2012).

160 Bishop Processing Co. v. Gardner, 275 F. Supp. at 780, 782 ("The time has not yet arrived when the Secretary may request the Attorney General to bring such a suit.").

161 *Id.* at 783–84.

which was not the case here.[162] Rather, under the 1963 Act the company was free to challenge the hearing board procedure in a subsequent enforcement action by the Attorney General after the end of the time period for abatement—December 1, 1967.[163]

On March 7, 1968, the Attorney General commenced the anticipated enforcement action in the same court, seeking to enjoin the company from discharging malodorous pollutants across state lines and polluting the air in Delaware.[164] In the second reported decision, dated July 16, 1968, the court denied Bishop's motion to dismiss, rejecting a number of objections by the company.[165] The court rejected the company's arguments that the law was unconstitutional, that the complaint failed to state a cause of action, that the proper administrative steps had not been adequately concluded, and that the court should abstain from hearing the case because a remedial action was pending in a state court in Maryland.[166]

On November 1, 1968, the parties disposed of that action by settlement, and a consent order was entered.[167] Under the consent order, the company agreed to cease all manufacturing and processing operations if the state of Delaware filed an affidavit stating that the company was discharging malodorous air pollution into the state.[168] After surveillance provided evidence of such a discharge, the state of Delaware filed an affidavit and the federal government made a motion for a court order for the company to cease operations.[169] In a March 1968 hearing, the court requested additional evidence that the company was causing air pollution, and in September 1969 the government offered additional evidence through a second motion.[170] After a second hearing was held on the additional evidence, the court granted an order directing Bishop to cease operations, which the company appealed to the United States Court of Appeals for the Fourth Circuit.[171]

In the third reported decision on March 3, 1970, the Fourth Circuit affirmed the order, rejecting the company's effort to introduce extraneous evidence and avoid the terms of the consent decree.[172] The Supreme Court denied the company's petition for a writ of certiorari on May 18, 1970, seven

162 *Id.* at 783.

163 *Id.* at 782–83.

164 United States v. Bishop Processing Co., 287 F. Supp. 624, 627 (D. Md. 1968) ("The government seeks to enjoin Bishop Proceeding Company (the defendant), the operator of a rendering and animal reduction plant near Bishop, Worcester County, Maryland, from discharging malodorous air pollutants, which it is alleged, move across the state line and pollute the air in and around Selbyville, Delaware."). The subsequent appellate decision in the case identified the date of the complaint as March 7, 1968. *Bishop Processing Co.*, 423 F.2d 469, 471 (4th Cir. 1970).

165 United States v. Bishop Processing Co., 287 F. Supp. at 629–36.

166 *See generally id.*

167 *Bishop Processing Co.*, 423 F.2d at 471.

168 *Id.* at 471–72.

169 *Id.* at 472.

170 *Id.*

171 *Id.*

172 *Id.* at 472–73.

months before the passage of the Clean Air Amendments of 1970.[173] Clearly, the federal government won the case under the pre-1970 Acts.

Although the 1963 Act contained some weaknesses that contributed to delays in the *Bishop Processing Co.* case, the weaknesses did not make the enforcement scheme fatally flawed.[174] While the states of Maryland and Delaware had been attempting to address air emissions from the facility since 1959, it was only in 1965 that the State of Delaware made a request to use the hearing conference procedure, leading to the initial conference in November 1965.[175] Any delay between 1959 and 1965 was attributable to state factors rather than the framework of the 1963 Act.[176] Including the time period for the administrative prosecution of the case, the federal case lasted from 1965 to May 1970, a period of approximately five years.[177] In addition, there was a delay in the judicial enforcement action of approximately one year, from the date of the settlement of the action (November 1, 1968), to the date of the order granting the order to cease operations (sometime after September 12, 1969, when the federal government made its second motion).[178] The reason for this delay was not because the 1963 Act was weak. Rather, the reason was because the court needed additional evidence before granting an order to cease operations, a serious remedy.[179] The delay arose from a strength in the 1963 Act, and not from a weakness. Moreover, it was attributable to the judicial process of the federal court system, and not to the administrative framework created by the 1963 Act.

The most significant administrative delay attributable to the 1963 Act was the eighteen-month period between the initial conference in November 1965 and the board hearing in May 1967.[180] Since the company was not present and was not required to be present at the conference, it is not surprising that the Secretary's recommendation for remedial action did not result in meaningful action by the company by the deadline of September 1, 1966.[181] Following the board hearing, a second delay of six months occurred

173 Bishop Processing Co. v. United States, 398 U.S. 904, 904 (1970). The Clean Air Amendments of 1970 were passed on December 31, 1970. Pub. L. No. 91-604, 84 Stat. 1676 (1970).

174 *See infra* notes 177–179 and accompanying text.

175 *Bishop Processing Co.*, 423 F.2d at 470 ("From approximately 1959 to 1965 the two states engaged in futile efforts to induce Bishop Processing Company, operator of the rendering and animal reduction plant located near Bishop, Maryland, to abate the malodorous air pollution which allegedly moves across the state line to pollute the air of nearby Selbyville, Delaware. Finally in 1965, the United States Secretary of Health, Education and Welfare received a request from the Delaware authorities to 'take the necessary action under P.L. 88-206, section 5 (the Clean Air Act, 42 U.S.C. § 1857 et seq.), to secure the abatement of the air pollution problem.'"); GRAD, *supra* note 145, at 2-76.

176 *See supra* Part III.

177 Bishop Processing Co. v. Gardner, 275 F. Supp. 780, 781 (D. Md. 1967) (initial conference was held November 9 through 10, 1965); Bishop Processing Co. v. United States, 398 U.S. at 904 (denying petition for writ of certiorari on May 18, 1970).

178 *Bishop Processing Co.*, 423 F.2d at 472.

179 *See id.*

180 *See Bishop Processing Co.*, 423 F.2d at 471.

181 *See* Bishop Processing Co. v. Gardner, 275 F. Supp. at 781; United States v. Bishop Processing Co., 287 F. Supp. 624, 628 (D. Md. 1968).

because the law required that a company be allowed a period of six months to come into compliance, before referring the action to the Attorney General.[182] But the combined delay of two years did not prevent the federal government from ultimately obtaining an order to cease operations.[183]

The administrative delays were attributable to Congress making the conference and hearing board procedures statutory prerequisites to referring an enforcement matter to the Attorney General, as opposed to making them enforcement proceedings subject to the APA in their own right.[184] To place this into the context of the modern CAA, this was like the modern requirement for a citizen to provide sixty days' notice to EPA, the state, and an alleged violator of an intention to commence a citizen suit action under the CAA.[185] The rationale for such statutory prerequisites is to attempt to resolve disputes before resorting to litigation.[186] Rather than characterizing the 1963 framework as fatally flawed, it is more accurate to say that Congress's experimentation with the conference hearing procedure as a statutory prerequisite for judicial enforcement was weakened by a lack of a time limitation.

At the same time, Congress was reluctant to grant adjudicative authority to a federal agency where the authority to adjudicate air pollution disputes had traditionally been exercised by state courts.[187] By not

182 Bishop Processing Co. v. Gardner, 275 F. Supp. at 781; Clean Air Act, Pub. L. No. 88-206, § 5(e)(3), 77 Stat. 392, 397 (1963).

183 *Bishop Processing Co.*, 423 F.2d at 472.

184 United States v. Bishop Processing Co., 287 F. Supp. at 633 ("The hearing, therefore, is not an adjudicative hearing. It is not subject to the provisions of the APA dealing with adjudicative hearings, 5 U.S.C.A. § 555. The conference and the hearing were merely the statutory prerequisites to the bringing of the lawsuit, Ewing v. Mytinger & Casselberry, 339 U.S. 594, 598, 70 S.Ct. 870, 94 L.Ed. 1088 (1949).").

185 42 U.S.C. § 7604(b)(1)(A) (2012). There are analogous rules for citizen suits under other substantive federal environmental laws, modeled after the CAA. *See, e.g.*, Clean Water Act, 33 U.S.C. § 1365(b)(1)(A) (2012) (allowing citizen suits under section 505 of the CWA); Resource Conservation and Recovery Act of 1976, 42 U.S.C. § 6972(b)(1)(A) (2012) (allowing citizen suits under section 7002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act).

186 Patrick Parenteau, *Citizen Suits Under the Endangered Species Act: Survival of the Fittest*, 10 WIDENER L. REV. 321, 328 (2004) (noting that 60-day notice requirements for citizen suits similar to those under the Resource Conservation and Recovery Act "put the agencies on notice of a perceived violation of the statute and an intent to sue. When given notice, the agencies have an opportunity to review their actions and take corrective measures if warranted. The provision therefore provides an opportunity for settlement or other resolution of a dispute without litigation.").

187 Buchele, *supra* note 79, at 609 (describing the traditional role of common law courts in adjudicating both "public and private interests affected by pollution"); *see* Air Pollution Control: Hearings on S. 88-432, S. 88-444, S. 88-1040, S. 88-1009, S. 88-1124, and H.R. 88-6518, Before a Spec. Subcomm. on Air and Water Pollution of the S. Comm. on Pub. Works, 88th Cong. 95 (Sept. 9–11, 1963) (statement of Hon. Jacob K. Javits, Sen. of New York) ("[I]n cases involving pollution occurring wholly within one State, Federal action starting with a conference called by the Secretary of Health, Education, and Welfare can be taken only at the request or concurrence of the Governor and a State air pollution control agency . . . . Such emphasis on State enforcement is both valuable and constructive."). Industrial interests shared this view. Air Pollution Control: Hearings on S. 88-432, S. 88-444, S. 88-1040, S. 88-1009, S. 88-1124, and H.R.

conforming the conference and hearing procedure to the requirements of the APA, Congress refused to give the Department the adjudicative powers that EPA routinely exercises today.[188] Still, the court in the *Bishop Processing Co.* case felt constrained to consider the hearing board findings and conclusions, even though the Department had no authority to impose sanctions, because the statute and due process concerns required the court to consider them.[189] The result was a set of procedures that delayed the remedy of injunctive relief, but that did not fatally undermine that remedy.

This was not the end of the story of the Bishop Processing Company facility. Despite the order to cease operations, the company continued to operate until 1981, over ten years after the passage of the Clean Air Amendments of 1970.[190] As of 2005, the site became subject to the state's Voluntary Cleanup Program, based on contamination of soil and water.[191] Because the facility continued to operate for ten years after the passage of the presumably more stringent 1970 Clean Air Act Amendments, the 1963 Act played only a remote role in the delay in the closure of this facility.

V. THE 1965 ACT

On October 20, 1965, Congress passed an act "[t]o amend the [1963 Act] to require standards for controlling emission of pollutants from certain motor vehicles . . . and for other purposes" (1965 Act).[192] The 1965 Act contained two titles.[193] The first title consisted of the Amendments to the

88-6518 Before a Spec. Subcomm. on Air and Water Pollution of the S. Comm. on Pub. Works, 88th Cong. 204, 214–16, 232 (Sept. 9–11, 1963) (statement of Myron V. Anthony, Chairman of the Legis. Subcomm. of the Air Pollution Abatement Comm., Manufacturing Chemists' Ass'n, Inc.; accompanied by William J. Conner, Attorney) ("[I]f the air pollution authorities of both of the States involved, and the Governors of both of the States involved, do not feel that the problem is of sufficient moment to ask the help of the Department of Health, Education, and Welfare, then we do not think that the Secretary should substitute his judgment and interpose himself into the picture.").

188 *See* H.R. REP. NO. 88-508, at 8–9, 27–30 (1963) (outlining the purpose and intention of the Department's conference and hearing procedures in the 1963 Act); *see also* S. REP. NO. 88-638, at 9–10 (1963), *reprinted in* 1963 U.S.C.C.A.N. 1260, 1262–64, 1276–78.

189 United States v. Bishop Processing Co., 287 F. Supp. at 633 ("Due process does require, however, that defendant have a due process hearing before any judgment is rendered by this Court. In that connection the provisions of section 1857d(h) must be considered.") (citation omitted).

190 MD. DEP'T OF THE ENV'T, FORMER BISHOP PROCESSING SITE, BISHOPVILLE, MARYLAND 21872, at 1 (2005), *available at* http://www.mde.state.md.us/assets/document/brownfields/Bishop_Processing.pdf ("The Bishop Processing Company began operations in 1955. The facility processed chicken offal into bone meal and usable oils and acidulated animal and vegetable waste oils into usable product. The operation ceased in 1981 and the property was sold to Mrs. Kay Thomas. In 2003, the property was sold to 3-D's Enterprises.").

191 *Id.* at 2–3; *see also* MD. DEP'T OF THE ENV'T, VCP–APPLICANTS AND APPLICATIONS INFORMATION 160–61 (2014), *available at* http://www.mde.state.md.us/programs/Land/MarylandBrownfieldVCP/Documents/VCP%20Applicants%20and%20Application%20Information%20-%20June%202014.pdf.

192 Clean Air Act Amendments of 1965, Pub. L. No. 89-272, 79 Stat. 992.

193 *Id.* §§ 101, 201, at 992–93.

1963 Act, and the second title consisted of the Solid Waste Disposal Act.[194] The second title became the federal law applicable to solid and hazardous waste.[195]

A. General Provisions and Stationary Sources

With respect to the Clean Air Act Amendments, the 1965 Act consolidated existing provisions in a new Title I and made some substantive amendments.[196] It also extended existing abatement provisions to pollution that endangers the health or welfare of persons in a foreign country, on the condition that the foreign country has given the United States essentially the same rights in that country.[197] This was a reciprocity provision for abating international air pollution that laid the roots for section 115 of the modern CAA.[198]

For stationary sources, the 1965 Act increased the authority of the Secretary in two important ways. First, it gave the Secretary a preemptive role in addressing *potential* problems, and not just actual ones.[199] Section 103(e) authorized the Secretary to call a conference among interested persons to deal with potential air pollution problems of substantial significance, and to ultimately make findings and recommendations to the persons causing the discharge and the relevant air pollution control agencies.[200] The 1965 Act provided that such recommendations "shall be advisory only."[201] Second, this remedy applied to air pollution subject to abatement in the 1963 Act—air pollution that "endangers the health or welfare of any persons."[202] A report by the Department in the legislative

194 *Id.*

195 Congress substantially revised the Solid Waste Disposal Act through the enactment of the Resource Conservation and Recovery Act of 1976, which created a "cradle to grave" regulatory scheme for waste, from the time of generation to the time of disposal. Pub. L. No. 94-580, 90 Stat. 2795 (1976); *see also* U.S. ENTVL. PROT. AGENCY, RCRA ORIENTATION MANUAL 2011, at 4 (2011), *available at* http://www.epa.gov/osw/inforesources/pubs/orientat/rom.pdf ("RCRA Subtitle C establishes a federal program to manage hazardous waste from cradle to grave.").

196 §§ 101–103, 79 Stat. at 992–96.

197 *Id.* § 102, at 995.

198 *See* 42 U.S.C. § 7415 (2012) (requiring EPA, when it has reason to believe that air pollutants emitted in the United States may endanger public health or welfare in a foreign country, to give a notification to the governor of the state in which the pollutants originate, but only if that foreign country has given the United States the same rights).

199 § 103(e), 79 Stat. at 996.

200 *Id.*

201 *Id.*

202 *Id.* ("If the Secretary finds . . . that the discharge or discharges if permitted to take place or continue are *likely to cause or contribute to air pollution subject to abatement under section 105(a)*, he shall send such findings, together with recommendations concerning the measures which he finds reasonable and suitable to prevent such pollution, to the person or persons whose actions will results in the discharge or discharges involved; to air pollution agencies of the State or States and of the municipality or municipalities where such discharge or discharges will originate; and to the interstate air pollution control agency, if any, in the jurisdictional area of which any such municipality is located.") (emphasis added). *See* Clean Air Act of 1963, Pub.

history demonstrates that this amendment was a response to a recommendation of President Johnson in a special message on natural beauty, to address "potential air pollution problems before pollution happens."[203]

B. Mobile Sources

The second and more significant amendment was the "Motor Vehicle Air Pollution Control Act."[204] Through the 1965 Act, Congress created a new Title II for mobile sources, establishing the structural framework for mobile sources in the modern CAA.[205] Section 202 required the Secretary to set automobile emissions standards upon a finding that vehicles or engines contribute to air pollution that endangers health or welfare.[206] This statutory language closely resembles the trigger for EPA regulation of mobile sources in the modern statute.[207] The Motor Vehicle Air Pollution Control Act required the Secretary to promulgate regulations containing standards with "appropriate consideration to technological feasibility and economic costs,"

L. No. 88-206, § 5(a), 77 Stat. 392, 396 (setting forth provisions for section 5(a)); § 101, 79 Stat. at 992 (redesignating section 5 as section 105).

203 H.R. REP. NO. 89-899, at 17 (1965), *reprinted in* 1965 U.S.C.C.A.N. 3608, 3623 ("We recommend an amendment to the Clean Air Act—not contained in any of the bills—to carry out the recommendation in the President's message on natural beauty that the act 'be improved to permit the Secretary of Health, Education, and Welfare to investigate potential air pollution problems before pollution happens, rather than having to wait until the damage occurs, as is now the case, and to make recommendations leading to the prevention of such pollution.'" (quoting President Johnson)). The full text of President Johnson's remarks is available at LBJ Presidential Library. LBJ Presidential Library, *President Lyndon B. Johnson's Special Message to the Congress on Conservation and Restoration of Natural Beauty*, http://www.lbjlib.utexas.edu/johnson/archives.hom/speeches.hom/650208.asp (last visited Feb. 14, 2015).

204 § 201, 79 Stat. at 992.

205 *Id.* § 202(a), 79 Stat. at 992–93; Clean Air Act, 42 U.S.C. § 7521(a)(1) (2012).

206 § 202, 79 Stat. at 992–93. ("The Secretary shall by regulation, giving appropriate consideration to technological feasibility and economic costs, prescribe as soon as practicable standards, applicable to the emission of any kind of substance, from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause or contribute to, or are likely to cause or to contribute to, air pollution which endangers the health or welfare of any persons, and such standards shall apply to such vehicles or engines whether they are designed as complete systems or incorporate other devices to prevent or control such pollution.").

207 *See* Clean Air Act, 42 U.S.C. § 7521 (2012) ("The Administrator shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare. Such standards shall be applicable to such vehicles and engines for their useful life . . . whether such vehicles and engines are designed as complete systems or incorporate devices to prevent or control such pollution."). This endangerment finding was the basis for EPA's initiative to regulate greenhouse gas emissions from mobile sources. Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009). *See also* Coal. for Responsible Regulation v. EPA, 684 F.3d 102, 120–22 (D.C. Cir. 2012) (holding that EPA's Endangerment Finding for greenhouse gas emissions from motor vehicles was entitled to deference), *aff'd in part, rev'd in part*, Util. Air Regulatory Grp. v. EPA, 134 S. Ct. 2427 (2014).

a consideration favorable to the automobile industry that is also reflected in the modern statute.[208] By directing the Secretary to regulate the emission of "any kind of substance," Congress intended to include rather than exclude air pollutants.[209] The requirement applied to any substance from any class of new motor vehicles or new motor vehicle engines, reflecting a dual approach that continues today.[210]

According to the legislative history, the Department felt the technical knowledge and skills for achieving emissions reductions were now available due to California emissions requirements for cars for model year 1966.[211] By December 1964, the Department had developed a clear preference for an exclusively federal approach to the problem of air emissions from motor vehicles.[212] The Committee on Interstate and Foreign Commerce agreed with this view.[213]

Congress also recognized the importance of affording the automobile industry a period of time to come into compliance with new regulations.[214] Regulations would be effective upon the effective date specified in the order

208 § 202(a), 79 Stat. at 992; 42 U.S.C. § 7521(a)(2) ("Any regulation prescribed under paragraph (1) of this subsection (and any revision thereof) shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.").

209 *See* § 202(a), 79 Stat. at 992.

210 *See id.* (requiring the Administrator to regulate emissions from "any class or classes of new motor vehicles or new motor engines"); *see also* 42 U.S.C. § 7521(a)(1) (same).

211 H.R. REP. NO. 89-899, at 5 (1965), *reprinted in* 1965 U.S.C.C.A.N. 3608, 3611–12 ("The technical knowledge and skills needed to achieve a significant reduction in motor vehicle pollution are now available. The automobile industry has indicated that equipment has been developed for reducing tailpipe emissions, which account for the major share of motor vehicle pollution, and that this equipment will be supplied on cars for distribution in California beginning with the 1966 model year, in compliance with the laws of that State. Furthermore, in testimony before the Subcommittee on Public Health and Welfare, representatives of the automobile manufacturers indicated that similar equipment could be supplied on all new cars manufactured in the United States by the 1968 model year, if such measures were mandatory under Federal law."). Still, the Department recognized that "the objective of achieving fully effective control of motor vehicle pollution will not be accomplished overnight." *Id.*

212 In a report to Congress on December 17, 1964, the Department had concluded that the problem of air pollution was a national problem, and should be addressed on a national basis. *Id.* at 15. ("Considering the fact that motor vehicles are mass produced, the numerous conflicting requirements that might thus ensue in the absence of uniform national regulation could have a chaotic effect. Moreover, the great mobility of motor vehicles and of their users would seriously lessen the ability of States and localities to protect themselves from pollution caused by vehicles coming from unregulated places. The need for national standards in this area is surely no less great than that already recognized by Congress for seat belts (Public Law 88-201), brake fluid (Public Law 87-637), or refrigerator safety devices (Public Law 84-930).").

213 *Id.* at 5 ("The committee is convinced that motor vehicle exhaust control standards on a national scale are necessary and would be of benefit of the entire country. . . . While the committee is cognizant of the basic rights and responsibilities of States for control of air pollution, it is apparent that the establishment of Federal standards applicable to more vehicle emissions is preferable to regulation by individual States. The high rate of mobility of automobiles suggests that anything short of nationwide control would scarcely be adequate to cope with the motor vehicle pollution problem.").

214 Motor Vehicle Air Pollution Control Act, Pub. L. No. 89-272, § 202(b), 79 Stat. 992, 993 (1965).

promulgating the regulations, determined by the Secretary to be a "period reasonably necessary for industry compliance."[215] In the modern CAA, this has been refined to allow for a specific lead time of four model years for heavy-duty vehicles, in order to preserve industry expectations.[216] In addition, it provides stability in the form of a statutory guarantee that the rules for heavy-duty vehicles will not change for a period of three model years following the applicability of a new standard.[217]

Congress prohibited the manufacture, sale, introduction in commerce, and importation of vehicles and engines, unless they were in conformity with Department regulations.[218] It also prohibited denying access to records and tampering with required automotive devices.[219] Congress established a procedure for refusing or deferring admission of noncompliant vehicles into the United States market.[220] The rules did not apply to new motor vehicles or new motor vehicle engines "intended solely for export," meaning that exported vehicles would not be subject to domestic standards.[221] Still, Congress created a comprehensive framework for the regulation of air emissions from automobiles and authorized the Secretary to issue regulations.

Congress backed up the law with enforcement provisions. It authorized the United States to commence actions in the federal district courts to restrain violations of the law.[222] For violations of the requirements above, it provided for a fine of not more than $1,000, and for nonrecordkeeping offenses each new motor vehicle or new motor vehicle engine would be a separate offense.[223] In 2014 dollars, this would be equivalent to approximately $7,500 for each new motor vehicle or new motor vehicle engine.[224] The creation of penalties was significant because it laid the roots for modern strict liability penalties under the CAA.

The 1965 Act was also significant because it introduced the certificate of conformity.[225] Upon application by a manufacturer, the Secretary was mandated to require the testing of a new motor vehicle or new motor vehicle engine to determine whether it conformed to regulations.[226] For a prototype that was in compliance, the Secretary was required to issue a certificate of conformity valid for at least one year.[227] To protect the business expectations of the automobile manufacturer, Congress provided that a new motor vehicle or new motor vehicle engine that was in "all material respects"

215 *Id.*
216 Clean Air Act, 42 U.S.C. § 7521(a)(3)(C) (2012).
217 *Id.*
218 § 203(a)(1), 79 Stat. at 993.
219 *Id.* § 203(a)(2)–(3).
220 *Id.* § 203(b).
221 *Id.* § 203(b)(3).
222 *Id.* § 204, at 994 (Injunction Proceedings).
223 *Id.* § 205 (Penalties).
224 *See CPI Inflation Calculator*, *supra* note 55.
225 § 206, 79 Stat. at 994 (Certification).
226 *Id.* § 206(a).
227 *Id.*

substantially the same construction as the test vehicle or engine, shall be deemed to be in conformity with the regulations.[228] Refined by subsequent legislative amendments, the certificate procedure remains an important feature of the modern CAA.[229]

Congress also imposed recordkeeping requirements. It required every manufacturer to establish and maintain records and allow government access to the records.[230] At the same time, it recognized a company's right to protection of trade secrets.[231] Such provisions are important features in the modern CAA.[232] Finally, the 1965 Act contained a list of six definitions that remain substantially unchanged today.[233]

C. Appropriations

The 1965 Act authorized a modest level of federal appropriations for its Title II provisions. It authorized $470,000 for 1966, $845,000 for 1967, $1,195,000 for 1968, and $1,470,000 for 1969.[234] In 2014 dollars, this would correspond to $3,434,000 for 1966, $5,989,000 for 1967, $8,129,000 for 1968, and $9,482,000 for 1969.[235] The authorizations were not insignificant.

D. Federal Regulations

Within six months of the passage of the 1965 Act, the Department exercised its newly granted authority to promulgate air emissions regulations. In December 1965, it issued a Notice of Proposed Rule Making for air emissions.[236] In March 1966, it promulgated a final rule.[237] The final

228 *Id.* § 206(b).

229 *See* 42 U.S.C. § 7525(a)(1) (2012) (providing the EPA Administrator with authority to require testing of new motor vehicles to ensure compliance with applicable emissions requirements); *id.* § 7525(a)(3)(A) (requiring EPA to issue a certificate of conformity only if the vehicle or engine is in compliance with applicable emissions requirements). In the 1970 amendments, Congress preserved the certification procedure, even though it removed the provision that new vehicles that are substantially the same in "all material respects" as previously certified vehicles shall be deemed to be in compliance. *Compare* § 206(b), 79 Stat. at 994, *with* Pub. L. No. 91-604, § 8, 84 Stat. 1676, 1694–95 (1970). In addition, Congress amended section 206(b) to authorize testing procedures to determine whether new vehicles or engines were in fact in conformity with previously certificated vehicles or engines, and authorized remedies for nonconforming vehicles or engines. *Id.*

230 § 207, 79 Stat. at 994 (Records and Reports).

231 *Id.* § 207(b).

232 *See* 42 U.S.C. §§ 7401–7671q, 7542 (requiring every manufacturer of new motor vehicles or new motor vehicle engines to "establish and maintain records" and requiring such records to be made available to the public unless their disclosure "would divulge methods or processes entitled to protection as trade secrets").

233 § 208, 79 Stat. at 994–95 (providing definitions of "manufacturer," "motor vehicle," "new motor vehicle," "new motor vehicle engine," "dealer," "ultimate purchaser," and "commerce"); 42 U.S.C. § 7550 (recounting the same definitions without significant changes).

234 § 209, 79 Stat. at 995 (Appropriations).

235 *See CPI Inflation Calculator*, *supra* note 55.

236 Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines, 30 Fed. Reg. 17,192 (Dec. 31, 1965); 79 Stat. at 992.

rule prohibited crankcase air emissions.[238] For vehicles with an engine displacement of more than 140 cubic centimeters, it imposed a numerical emissions limitation for hydrocarbons of 275 parts per million and an emissions limitation for carbon monoxide of 1.5% by volume.[239] In addition, it included regulatory requirements for the certificate of conformity, certification hearings, and a test procedure for vehicle exhaust emissions.[240]

In summary, by 1965 Congress had created a comprehensive regulatory scheme for the regulation of air emissions from cars and trucks, and authorized the Secretary to promulgate substantive air emissions regulations to effectuate that scheme. Having determined that an exclusively federal approach to motor vehicle emissions was appropriate, the Department responded by setting the first federal emissions limitations for motor vehicles.

VI. THE 1967 ACT

On November 21, 1967, Congress amended the Clean Air Act of 1963.[241] This act was also known as the Clean Air Act (1967 Act).[242] The historical context was a period of increased attention to the problem of air pollution at the federal level.[243] Structurally, the 1967 Act further shaped the statute into its modern form. Title I, "Air Pollution Prevention and Control," addressed the general problem of air pollution and the specific problem of stationary sources.[244] Title II, entitled the "National Emission Standards Act," addressed the specific problem of mobile sources.[245] Title III, "General," consolidated general provisions applicable to the first two titles.[246] As a result, the first

237 Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines, 31 Fed. Reg. 5170 (Mar. 30, 1966).

238 *Id.* at 5171.

239 *Id.* For vehicles with an engine displacement between 100 and 140 cubic centimeters, the emissions limitations were increased to 350 parts per million (hydrocarbons) and 2% by volume (carbon monoxide). *Id.* For vehicles with an engine displacement between 50 and 100 cubic centimeters, the emissions limitations were increased to 410 parts per million (hydrocarbons) and 2.3% by volume (carbon monoxide). *Id.* Vehicles with an engine displacement of less than 50 cubic centimeters were not subject to these emissions limitations. *See id.*

240 *Id.* at 5171–72.

241 Air Quality Act of 1967, Pub. L. No. 90-148, 81 Stat. 485. This was an act "to amend the Clean Air Act to authorize planning grants to air pollution control agencies; expand research provisions relating to fuels and vehicles; provide for interstate air pollution control agencies or commissions; authorize the establishment of air quality standards, and for other purposes." *Id.*

242 *Id.* § 310, at 507.

243 Narrated by a famous actor, a video commissioned by the U.S. Senate Committee on Public Works set forth the nature of the air pollution problem, discussed efforts being made under the 1963 and 1965 acts, and demonstrated bipartisan support in Congress for addressing the problem. James Garner, *Ill Winds on a Sunny Day* (1966 U.S. Senate Committee on Public Works Film Report No. 2) (on file with U.S. NAT'L ARCHIVES AND RECORDS ADMIN.), *available at* http://research.archives.gov/description/11016.

244 §§ 101–111, 81 Stat. at 485–99.

245 *Id.* §§ 201–212, at 499–503.

246 *Id.* §§ 301–310, at 504–07.

three titles of the modern CAA were already in place prior to the 1970 amendments.[247]

A. General Provisions and Stationary Sources

Many sections in Title I were carryovers from previous acts, with some minor legislative changes.[248] Other changes were more significant and consequential. The first significant amendment was the requirement for the Secretary to designate air quality control regions. The 1967 Act required the Secretary to designate "atmospheric areas of the Nation on the basis of those conditions . . . which affect the interchange and diffusion of pollutants in the atmosphere," including climate, meteorology, and topography.[249] It required the Secretary to designate air quality control regions based on "jurisdictional boundaries, urban–industrial concentrations, and other factors including atmospheric areas necessary to provide adequate implementation of air quality standards."[250] Congress authorized the Secretary to revise the designations of regions over time.[251] In short, Congress codified the concept of the airshed as the geographical area for applying air quality standards, rather than simply using the convenient geographical area of a state. The implication is that states would have to work together to attain air quality standards in air quality control regions straddling one or more states.[252]

In a second related amendment, Congress refined the requirement for the Secretary to develop and issue air quality criteria to the states. The 1967 Act carried over the general requirements for air quality criteria in the 1963 Act.[253] But the 1967 Act went a step further in requiring previous criteria to

247 *See supra* notes 244–246 and accompanying text. Title II is now titled "Emission Standards for Moving Sources," but its purpose remains the same. *See* §§ 201–212, 81 Stat. at 499–503 (addressing emissions from mobile sources); 42 U.S.C. §§ 7521–7590 (2012) (same). Title IV (relating to the Acid Rain Program), Title V (relating to permits), and Title VI (relating to stratospheric ozone depletion) were added by the 1990 Clean Air Act Amendments, 20 years after the 1970 amendments. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399, 2584, 2635, 2649.

248 *Compare, e.g.*, § 102, 81 Stat. at 485–86, *with* Clean Air Act, Pub. L. No. 88-206, § 2, 77 Stat. 392, 393 (1963) (whereby the 1967 Act uses substantially identical language as the 1963 Act). In that amendment, Congress added language prohibiting interstate compacts from requiring participation by a state not included in the relevant air quality region. *See id.* The purpose was to reinforce states' rights. *See id.*

249 § 107(a), 81 Stat. at 490.

250 *Id.* § 107(a)(2), at 490–91.

251 *Id.*

252 H.R. REP. NO. 90-728, at 10 (1967), *reprinted in* 1967 U.S.C.C.A.N. 1938, 1945 (Report of Committee on Interstate and Foreign Commerce) ("Such regions could include parts of two or more States or could lie entirely within a single State. In either case, each one would include a group of communities affected by a common air pollution problem.").

253 § 107(b)(1), 81 Stat. at 491 (referring to "such criteria of air quality as in his judgment may be requisite for the protection of the public health and welfare"). As in the 1963 Act, the term "criteria" referred to the information that would support the development of air quality standards, rather than the air quality standards themselves. *See id.* § 107(b)(2). Criteria had to accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all

be reevaluated in light of the 1967 amendments and, if necessary, modified and reissued.[254] Among the amendments was the requirement that criteria include variable factors that can alter the effects of an air pollution agent on health or welfare, as well as the types of air pollution agents that may interact to produce an adverse effect on health or welfare.[255]

A third related amendment was a requirement for the Secretary to issue to the states and air pollution control agencies information on recommended pollution control techniques that were necessary to achieve the levels of air quality set forth in the criteria.[256] Recommendations had to include data on the latest available technology and economic feasibility of alternative methods of prevention and control of air contamination, including cost-effectiveness analyses.[257] This laid the roots for modern technology-based standards, such as best demonstrated available technology (BDAT), best available control technology (BACT), maximum achievable control technology (MACT), and reasonably available control technology (RACT), which reflect different levels of availability of technology.[258]

A fourth related amendment involved a procedure for development and approval of air quality standards.[259] The 1967 Act carried over the 1963 requirement that air pollution "which endangers the health or welfare of any persons" shall be subject to abatement.[260] While the 1963 Act had authorized the remedy of abatement of air pollution through the conference procedure, the 1967 Act took this a step further. It established a program for the

identifiable effects on health and welfare that may be expected from the presence of an air pollution agent. *Id.* This was consistent with the 1963 Act. *See* § 3(c), 77 Stat. at 395.

254 § 107(b)(1), 81 Stat. at 491 ("Provided, [t]hat any criteria issued prior to enactment of this section shall be reevaluated in accordance with the consultation procedure and other provisions of this section and, if necessary, modified and reissued.").

255 *Id.* § 107(b)(3) ("Such criteria shall include those variable factors which of themselves or in combination with other factors may alter the effects on public health and welfare of any subject agent or combination of agents, including, but not limited to, atmospheric conditions, and the types of air pollution agent or agents which, when present in the atmosphere, may interact with such subject agent or agents, to produce an adverse effect on public health and welfare.").

256 *Id.* § 107(c) ("The Secretary shall . . . issue to the States and appropriate air pollution control agencies information on those recommended pollution control techniques the application of which is necessary to achieve levels of air quality set forth in criteria issued pursuant to subsection (b), . . . which information shall include technical data relating to the technology and costs of emission control. Such recommendations shall include such data as are available on the . . . methods of prevention and control of air contamination including cost effectiveness analyses.").

257 *Id.*

258 Today, facilities covered by new source performance standards are subject to BDAT. 42 U.S.C. § 7411(a)(1) (2012). New or modified facilities requiring permits under the Prevention of Significant Deterioration program are subject to BACT. *Id.* § 7475(a)(4). Facilities subject to a national emissions standard for hazardous air pollutants are subject to MACT. *Id.* § 7412(d). Existing facilities in nonattainment areas are subject to RACT. *Id.* § 7502(c)(1).

259 Air Quality Act of 1967, Pub. L. 90-148, § 108, 81 Stat. 491, 492–97 (Air Quality Standards and Abatement of Air Pollution).

260 *Id.* § 108(a), at 491.

development of air quality standards, within the existing statutory framework for abatement.[261]

Consistent with the premise that state and local governments have primary responsibility for the prevention and control of air pollution, Congress gave the states the first opportunity to develop air quality standards, based on the Secretary's air quality criteria. The 1967 Act allowed a state to file a "letter of intent" to adopt ambient air quality standards for an air quality control region.[262] If a state did this, and if it adopted a plan for implementation, maintenance, and enforcement of standards approved by the Department, and there was a means of enforcement, then the standards and plan would be applicable to the state.[263] If a state did not file a letter of intent or establish air quality standards, the Secretary was authorized to promulgate standards, provided it followed specified procedures.[264] A state could request a hearing on any air quality standards promulgated by the Secretary.[265] For violations of such air quality standards, Congress enacted enforcement provisions allowing the Secretary to use a new abatement procedure that was similar to the ones developed in the prior acts.[266] By giving the states the opportunity to set the standards themselves, Congress followed the existing federal approach for the setting of water quality standards.[267]

Aware of the interstate nature of air emissions, Congress expressed concern about states exporting their pollution to other states. It did not intend for a state to set air quality standards that would cause another state

261 *Id.* § 108, at 492–93.

262 *Id.* § 108(c), at 492.

263 *Id.* (listing the three cornerstones of "implementation, maintenance, and enforcement," which form the roots of the state implementation plan requirement in section 110 of the modern CAA); *see, e.g.*, 42 U.S.C. § 7410(a) ("Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator . . . after the promulgation of a national primary ambient air quality standard . . . a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region . . . within such State.").

264 § 108(c)(2), 81 Stat. at 492.

265 *Id.* § 108(c)(3).

266 *Id.* § 108(c)(4), at 493. In separate subsections, Congress carried over the abatement remedy developed in previous acts. *Id.* § 108(d), at 494 (prescribing abatement procedures for interstate and intrastate pollution); *id.* § 108(e), at 495 (prescribing recommendation procedure for abatement); *id.* § 108(f) (prescribing hearing procedure for abatement actions); *id.* § 108(g), at 496 (prescribing federal enforcement actions for abatement); *id.* § 108(h) (prescribing standards for judicial review of abatement).

267 H.R. REP. NO. 90-728, at 1952, *reprinted in* 1967 U.S.C.C.A.N. 1938, 1952 ("The provisions relating to the adoption of air quality standards are the heart of the legislation. These provisions are largely adapted from existing Federal law in the field of water pollution control.").

to fail to meet its own standards.[268] This concern laid the framework for the codification of the good neighbor provision in the modern CAA.[269]

In summary, Congress created a federal–state partnership that required the Department to publish air quality criteria and information on recommended control technology. Based on those criteria and information, the states were given the first opportunity to set air quality standards for air quality control regions, and to develop and implement plans to meet those air quality standards.[270] In turn, the Department was required to evaluate and approve state standards and plans.[271] This was one step away from the 1970 amendments, which withdrew the responsibility for setting air quality standards from the states and granted it exclusively to EPA, but left intact the state responsibility to prepare implementation plans for approval by EPA.[272] Finally, Congress tied the setting of standards and the preparation of implementation plans to each particular air pollutant for which the Department had published air quality criteria, a practice which continues to be a feature of the modern CAA.[273]

To address air pollution episodes in emergency situations, Congress strengthened the abatement procedure. It authorized the Department to request the Attorney General to commence an action for an injunction in federal court when there was evidence that one or more sources of pollution, including moving sources, was presenting an "imminent and substantial endangerment to the health of persons," and where the state and local governments had failed to act.[274] Here, the authority of the Department was absolute, and it was not required to follow the conference procedure.[275]

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268 *Id.* at 1953 ("Where a designated air quality control region includes portions of two or more States, the possibility exists that the respective States may adopt differing standards of air quality. It is the committee's view that no State should be permitted to set air quality standards which, even if fully implemented, would impair air quality in any portion of another State below the standards set by that other State.").

269 *See id.* The good neighbor provision prohibits a state from contributing significantly to nonattainment of a national ambient air quality standard, or interfering with maintenance of attainment of a national ambient air quality standard, by another state. 42 U.S.C. § 7410(a)(2)(D)(i) (2012). Because this provision is directly tied to a state's status of attainment or nonattainment, it is indirectly tied to the national ambient air quality standards.

270 H.R. REP. NO. 90-728, at 1.

271 *Id.* ("In all cases, the standards and plans for implementation would be submitted to the Department for evaluation.").

272 Clean Air Amendments of 1970, Pub. L. No. 91-604, § 4, 84 Stat. 1678–83; *see* 42 U.S.C. §§ 7409, 7410.

273 Pub. L. No. 90-148, § 108(c)(1), 81 Stat. 485, 492; H.R. REP. NO. 90-728, at 11, *reprinted in* 1967 U.S.C.C.A.N. 1938, 1947 ("This same procedure would have to be followed for each class of pollutants for which the Department publishes air quality criteria and control technology data. This means that each time new criteria are published, States would repeat the standard-setting procedures with respect to the new class of pollutants."). *See* 42 U.S.C. § 7410(a) (requiring a state plan for implementation, maintenance, and enforcement of each primary national ambient air quality standard and a state plan for each secondary national ambient air quality standard, in each air quality control region within a state).

274 § 108(k), 81 Stat. at 497.

275 *See* H.R. REP. NO. 90-728, at 19 ("Under this provision the Secretary would have absolute authority to take the required control steps to avert disaster episodes such as occurred in the heavily industrialized Meuse Valley of Belgium in 1930; in Donora, Pa., in 1948; in New York City

Still, it was not intended for addressing nonemergency problems, which would remain subject to the other abatement provisions.[276] Because this new abatement provision for emergency situations was not subject to other abatement provisions that allowed a court to consider the physical and economic feasibility of securing abatement, those factors would not be relevant in emergency situations.[277]

Another significant amendment was a requirement for the Secretary to submit to Congress a comprehensive report on the "need for and effect of" national emission standards for stationary sources within two years.[278] This section was located in Title II (relating to mobile sources), rather than in Title I (relating to stationary sources), because it was exploring a possible direct national regulation of stationary sources, similar to that already taken for mobile sources. This section led to the enactment of the section 112 program for national emission standards for hazardous air pollutants in 1970.[279] But in 1967, the Department first needed to conduct studies to determine how to structure a national emissions standards program.[280] Section 211 was Congress's tool for accomplishing this objective.[281]

in 1953; and in London in 1952 and 1962."); *see also id.* ("[W]here an emergency incident is in the making which could seriously jeopardize the public health the Secretary may obtain the necessary injunction regardless of technological and economic feasibility.").

276 *Compare* § 108(k), 81 Stat. at 497 (authorizing an action for abatement based on imminent and substantial endangerment, "[n]otwithstanding any other provision of this section"), *with* § 108(h), at 496 (requiring a court to consider "the practicability of complying with such standards as may be applicable and to the physical and economic feasibility of securing abatement of any pollution proved"); H.R. REP. NO. 90-728, at 19 ("This provision is intended to provide a remedy in an emergency situation . . . . It is not intended as a substitute procedure for chronic or generally recurring pollution problems, which should be dealt with under the other provisions of the act.").

277 H.R. REP. NO. 90-728, at 19 ("Unlike the other provisions of section 107, where technological and economic feasibility are a prerequisite to sound regulation, where an emergency incident is in the making which could seriously jeopardize the public health, the Secretary may obtain the necessary injunction regardless of technological and economic feasibility.").

278 National Emission Standards Act, Pub. L. No. 90-148, § 211, 81 Stat. 499, 503 (1967) (National Emissions Standards Study). The subject matter was to include the following: "identifiable health and welfare effects from single emission sources;" specific plants, locations, and contaminants that "constitute a danger to public health or welfare;" a list of industries and contaminants which should be subject to national standards; "the relationship of such national emission standards to ambient air quality," incorporating the differential impact of multiple facilities in one location; and an "analysis of the cost of applying such standards." *Id.*

279 *See* SEC'Y OF HEALTH, EDUC., AND WELFARE, NATIONAL EMISSION STANDARDS STUDY, S. DOC. NO. 91-63, at xix (1970) (recommending adoption of national emissions standards for stationary sources of hazardous pollutants); *see also* Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676, 1685–86 (codified as amended at 42 U.S.C. § 7412 (2012)) (providing for the creation and implementation of national emission standards for hazardous air pollutants).

280 S. REP. No. 90-403, at 38 (1967) ("[T]he committee feels that the concept of national emissions standards for stationary sources deserves further investigation . . . .").

281 *Id.* at 36, 38 (1967).

B. Mobile Sources

Title II of the 1967 law was the National Emission Standards Act.[282] Many of the sections were carried over from the 1965 law in substantially the same form.[283] But Congress added a brand new section to facilitate the centralization of federal authority over motor vehicles.[284] Section 208 expressly provided for preemption of state law.[285] This meant that states could not enforce standards relating to the control of emissions from new motor vehicles or new motor vehicle engines.[286] Nor could they require "certification, inspection, or any other approval relating to the control of emissions . . . as condition precedent" to registration of new motor vehicles or new motor vehicle engines.[287] Consistent with principles of federalism, Congress reserved to the states the right to "control, regulate, or restrict the use, operation, or movement" of motor vehicles.[288] While preventing states from interfering with federal regulation of mobile sources, Congress respected state autonomy in matters of traditional state regulation.[289]

Congress tempered this preemption provision with a waiver provision. The Secretary was required to waive preemption, but only for any state that had adopted standards for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966.[290] That was the date when the Department promulgated federal automobile emissions standards, pursuant to the 1965 Act.[291] But waiver was not allowed if the Secretary found that the state did not "require standards more stringent than applicable Federal standards to meet compelling and extraordinary conditions or that such State standards . . . are not consistent with section 202(a)."[292] The policy was to prevent fifty different states dictating fifty

282 § 201, 81 Stat. at 499 (Short Title).

283 *Compare id.* § 202 (Establishment of Standards), *and id.* § 203, at 499–500 (Prohibited Acts), *and id.* § 204, at 500 (Injunction Proceedings), *and id.* § 205 (Penalties), *and id.* § 206, at 501 (Certification), *and id.* § 207 (Records and Reports), *and id.* § 212, at 503 (Definitions for Title II), *with* Motor Vehicle Air Pollution Control Act, Pub. L. No. 89-272, § 202, 79 Stat. 992, 992 (1965) (Establishment of Standards), *and id.* § 203, at 993 (Prohibited Acts), *and id.* § 204, at 994 (Injunction Proceedings), *and id.* § 205 (Penalties), *and id.* § 206 (Certification), *and id.* § 207 (Records and Reports), *and id.* § 208, at 994–95 (Definitions for Title II).

284 § 208, 81 Stat. at 501 (providing for the preemption of state standards).

285 *Id.*

286 *Id.* § 208(a).

287 *Id.*

288 *Id.* § 208(c).

289 *Id.* ("Nothing in this title shall preclude or deny to any State . . . the right otherwise to control, regulate, or restrict the use, operation, or movement of registered or licensed motor vehicles."); Joshua D. Sarnoff, *The Continuing Imperative (But Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVTL. L. & POL'Y F. 225, 234 (1997) ("Congress wholly preempted state regulation and relied exclusively upon . . . [EPA] to develop and to enforce the control of emissions from mobile sources; . . . .").

290 § 208(b), 81 Stat. at 501.

291 *See supra* note 236.

292 § 208(b), 81 Stat. at 501.

different standards to the automobile industry.[293] But Congress did not want to infringe on the authority of California, which already had a comprehensive automobile emissions control statute before March 30, 1966.[294] Indeed, California was the only state to have established "compelling and extraordinary circumstances" justifying different regulations, due to its unique air pollution problems presented by climate and topography.[295] While Congress has refined the preemption and waiver provisions in subsequent legislative amendments, the basic premise of the waiver in the 1967 law remains the same today.[296]

Congress also increased the federal authority to regulate fuels. While the 1963 Act had required a study of the development of fuels and a report to Congress, the 1967 Act authorized the Secretary to require manufacturers of fuels and fuel additives to disclose information regarding their content, as a precondition for registering a fuel additive.[297] By requiring the disclosure of chemical additives, the range of concentrations, and their purposes, this provision laid the roots for the Emergency Planning and Community Right-to-Know Act of 1986.[298] The disclosure section contained a provision for the protection of trade secrets.[299] The act imposed civil penalties of $1,000 per day of violation for manufacturers and processors delivering fuels in commerce in violation of the disclosure requirement.[300] This is another example of a civil penalty provision that predated the hefty modern civil penalties of the CAA.

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293 H.R. REP. NO. 90-728, at 21 (1967), *reprinted in* 1967 U.S.C.C.A.N. 1938, 1956 ("[T]he committee has agreed . . . that State laws applicable to the control of emissions from new motor vehicles or new motor vehicle engines are superseded. The committee feels that a provision such as this is necessary in order to prevent a chaotic situation from developing in interstate commerce in new motor vehicles.").

294 *See* W. Christopher Brestel Jr., *The California Motor Vehicle Pollution Control Law*, 50 CALIF. L. REV. 121, 122 (1962), *available at* http://scholarship.law.berkeley.edu/cgi/viewcontent.cgi?article=3114&context=californialawreview ("In 1960, the California legislature, recognizing that 'the emission of pollutants from motor vehicles is a major contributor to air pollution in many portions of the state,' enacted sections 24378 through 24398 of the Health and Safety Code. In general, the new statute provides for a Motor Vehicle Pollution Control Board, which is to carry out the duties conferred upon it by the Motor Vehicle Pollution Control statute.") (citing CAL. HEALTH & SAFETY CODE § 24378(a) (1960)).

295 H.R. REP. NO. 90-728, at 21–22.

296 *See* 42 U.S.C. § 7543(a)–(b) (2012) (listing current provisions regarding preemption and waiver). Congress has updated the provisions to address vehicle parts, engine parts, and nonroad engines or vehicles. *See id.* § 7543(c), (e).

297 Air Quality Act of 1967, Pub. L. No. 90-148, § 210(b), 81 Stat. 485, 502 (Registration of Fuel Additives); Clean Air Act of 1963, Pub. L. No. 88-206, § 6(a)–(b), 77 Stat. 392, 399.

298 *See* § 210(b), 81 Stat. at 502; 42 U.S.C. § 11002 (1986) (requiring submission of emergency planning notification for extremely hazardous substances); *id.* § 11021 (requiring submission of material safety data sheet or list of hazardous chemicals); *id.* § 11022 (requiring submission of hazardous chemical inventory forms for hazardous chemicals); *id.* § 11023 (requiring submission of toxic chemical release forms for toxic chemicals).

299 § 210(c), 81 Stat. at 502.

300 *Id.* § 210(d).

C. Title III Provisions

Title III, "General," contains several carryovers from the 1965 Act.[301] But it also included two important new sections relating to research and studies. The first section represented the roots of modern cost–benefit analysis under the CAA.[302] It required a detailed estimate of costs for the regulation of stationary sources and mobile sources.[303] Congress required the Secretary to submit a report of such estimated costs to the President and Congress by January 10th of each year.[304] This section predated President Reagan's executive order on cost–benefit analysis in major rulemakings, by a period of fourteen years.[305] As a result of that executive order, and similar executive orders of subsequent presidents, no major rule under the CAA may be finalized without a determination that benefits exceed costs.[306]

The second major reporting section, also applicable to stationary sources and mobile sources, required an additional report from the Secretary to Congress every January.[307] The report was to address automotive exhaust emissions, air quality criteria, emissions control requirements, air quality standards, the status of pollution control programs, and other considerations.[308] By requiring this information in reports from the Secretary, Congress set the stage for the 1970 amendments.

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301 *Id.* § 301, at 504 (Administration); *id.* § 302, at 504–05 (Definitions); *id.* § 303, at 505 (Other Authority Not Affected); *id.* § 304 (Records and Audit); Clean Air Act of 1965, Pub. L. No. 89-272, § 101, 79 Stat. 992, 992 (redesignating sections 8 through 14 as sections 301 through 307); Clean Air Act of 1963; § 8, 77 Stat. at 400 (Administration); *id.* § 9 (Definitions); *id.* § 10, at 401 (Other Authority Not Affected); *id.* § 11 (Records and Audit).

302 *See* § 305(a), 81 Stat. at 505 (Comprehensive Economic Cost Studies).

303 *Id.* Specifically, it required information regarding the following costs: 1) the cost of carrying out the provisions of the Act (costs for the federal government); 2) the cost of program implementation by affected units of government (costs for the state and local governments); 3) the economic impact of air quality standards on the nation's industries, communities, and other contributing sources of pollution (costs for business and industry in terms of economic impact); and, 4) the cost of controlling emissions to attain national standards of air quality (costs for business and industry in terms of pollution controls). *Id.*

304 *Id.*

305 *See* Exec. Order No. 12,291 of Feb. 17, 1981, 46 Fed. Reg. 13,193, 13,193 (Feb. 19, 1981) (directing agencies to conduct cost–benefit analyses before undertaking regulatory action).

306 Exec. Order No. 12,498 of Jan. 4, 1985, 50 Fed. Reg. 1036, 1036 (Jan. 8, 1985); Exec. Order No. 12,866 of Sept. 30, 1993, 58 Fed. Reg. 51,735, 51,736 (Oct. 4, 1993); Exec. Order No. 13,258 of Feb. 26, 2002, 67 Fed. Reg. 9385, 9385 (Feb. 28, 2002) (amending previous executive order to delete references to the Vice President); Exec. Order No. 13,422 of Jan. 18, 2007, 72 Fed. Reg. 2763, 2763–65 (Jan. 23, 2007) (amending previous executive order to make "significant guidance documents" subject to review by OIRA); Exec. Order No. 13,497 of Jan. 30, 2009, 74 Fed. Reg. 6113, 6113 (Feb. 4, 2009) (revoking executive orders and directing the rescission of actions implementing them); Exec. Order No. 13,563 of Jan. 18, 2011, 76 Fed. Reg. 3821, 3821 (Jan. 21, 2011).

307 § 306, 81 Stat. at 506.

308 *Id.* Specifically, the subject matter of the report was to include the following: "(1) the progress and problems associated with control of automotive exhaust emissions . . . ; (2) the development of air quality criteria and recommended emission control requirements; (3) the status of enforcement actions . . . ; (4) the status of state ambient air standards setting . . . ; (5) the extent of development and expansion of air pollution monitoring systems; (6) progress and problems related to development of new and improved control techniques; (7) the development

D. Appropriations

The 1967 Act provided a significant increase in the level of federal appropriations. For research relating to fuels and vehicles, Congress authorized appropriations of $35,000,000 for 1968 and $90,000,000 for 1969.[309] In 2014 dollars, this would correspond to $238,096,000 for 1968 and $580,551,000 for 1969.[310] For all other purposes, Congress authorized appropriations of $74,000,000 for 1968, $95,000,000 for 1969, and $134,300,000 for 1970.[311] In 2014 dollars, this would correspond to $503,404,000 for 1968, $612,804,000 for 1969, and $819,423,000 for 1970.[312] Accordingly, the level of funding was significant.

VII. THE 1970 ACT

On December 31, 1970, Congress enacted the Clean Air Amendments of 1970, popularly known as the modern CAA (1970 Act).[313] Two important events preceded the passage of these amendments. The first was Earth Day, when millions of Americans participated in public demonstrations calling for more action to address pollution of the environment.[314] The second event was the creation of EPA by joint action of President Nixon and inaction of Congress, pursuant to the 1966 Reorganization Act. On July 9, 1970, President Nixon transmitted to Congress a reorganization plan creating EPA, which became law within sixty days when Congress did not oppose the plan through a concurrent resolution.[315] Under the reorganization plan, EPA was formed on December 2, 1970, by taking powers from the Departments of Interior, Agriculture, and Health, Education, and Welfare.[316] The purpose was to strengthen enforcement of federal environmental laws and rid functions from the administrative constraints of existing departments.[317] Passed on

of . . . instrumentation to monitor emissions and air quality; (8) standards set or under consideration pursuant to title II of this Act (relating to mobile sources); (9) the status of State, interstate, and local pollution control programs . . . ; and (10) the reports and recommendations made by the President's Air Quality Advisory Board." *Id.*

309 *Id.* § 104(c), at 488.

310 *See CPI Inflation Calculator*, *supra* note 55.

311 § 309, 81 Stat. at 506–07.

312 *See CPI Inflation Calculator*, *supra* note 55.

313 Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676.

314 *See supra*, note 5; *see also* U.S. Envtl. Prot. Agency, *EPA History: Earth Day*, http://www2.epa.gov/aboutepa/epa-history-earth-day (last visited Feb. 14, 2015).

315 Reorganization Plan No. 3 of 1970, 35 Fed. Reg. 15,623, 15,626 (Oct. 6, 1970), *reprinted in* 5 U.S.C. app. at 208 (2012).

316 *Id.* at 15,623–25.

317 Message of the President in Reorganization Plan No. 3 of 1970, *reprinted in* 5 U.S.C. app. at 210 (2012) ("Despite its complexity, for pollution control purposes the environment must be perceived as a single, interrelated system. Present assignments of departmental responsibilities do not reflect this interrelatedness. . . . In organizational terms, this requires pulling together into one agency a variety of research, monitoring, standard-setting and enforcement activities now scattered through several departments and agencies.").

December 31, 1970, four weeks after the formation of EPA, the 1970 Act granted EPA a central role in the regulation of air pollution.[318]

A. General Provisions and Stationary Sources

The critical sections in Title I were sections 107 through 112. While striking the provisions of section 107 that had authorized the Secretary to designate air quality control regions, Congress passed a new section 107 that granted similar authority to EPA.[319] Congress carried over the predecessor act's language in section 101 that states and local governments have primary responsibility over air pollution prevention and control, and repeated this language in section 107, to reinforce the point.[320] Congress included transition provisions recognizing air quality control regions created under the 1967 Act, and authorizing the creation of new air quality control regions.[321] Consequently, new section 107 represented a continuation of the air quality control region approach that had been introduced in the 1967 Act.

By contrast, new sections 108, 109, and 110 represented a considerable shift of authority from the states to the federal government, and a marked change from the status quo. Sections 108 and 109 abandoned the 1967 Act's approach of affording the states the first opportunity to develop air quality standards, and granted this authority exclusively to EPA.[322] Section 108 required the EPA Administrator to publish a list of pollutants that, "in his judgment ha[ve] an adverse effect on public health or welfare[,] the presence of which in the ambient air results from numerous or diverse mobile or stationary sources[,]" and for which the EPA Administrator plans to issue air quality criteria.[323] Section 108 also included factors to consider in setting forth air quality criteria, developed in previous acts.[324]

Section 109 worked together with section 108 by requiring EPA to promulgate primary and secondary standards based on air quality criteria for air pollutants identified under section 108.[325] Primary standards were "based on such criteria and allowing an adequate margin of safety, . . . requisite to protect the public health."[326] Secondary standards were "based on such criteria" but "requisite to protect the public welfare from any known or anticipated adverse effects."[327] Pursuant to the law, EPA has designated six

318 § 15(c)(1), 84 Stat. at 1713 (defining "Administrator" to mean "the Administrator of the Environmental Protection Agency"). *See id.* § 15 (making the Administrator responsible for the implementation of the CAA); *see also* U.S. Envtl. Prot. Agency, *40th Anniversary of the Clean Air Act*, http://www.epa.gov/air/caa/40th.html (last visited Feb. 14, 2015).

319 84 Stat. at 1678.

320 *Id.* § 2, at 1676 (beginning amendments with section 103, thus leaving section 101 intact); *id.* § 4(a), at 1678 (amending the existing CAA to create a new section 107).

321 § 4(a), 84 Stat. at 1678 (amending the existing CAA to create a new section 107(b)).

322 *Id.* at 1678–79 (amending the existing CAA to create new sections 108–109).

323 *Id.* at 1678 (amending the existing CAA to create a new section 108).

324 *Id.* at 1678–79 (amending the existing CAA to create a new section 108(a)(2)).

325 *Id.* at 1679–80 (amending the existing CAA to create a new section 109).

326 *Id.* at 1680 (amending the existing CAA to create a new section 109(b)(1)).

327 *Id.* (amending the existing CAA to create a new section 109(b)(2)).

"criteria pollutants," based on criteria documents developed before and after the passage of the 1970 Act, and it has promulgated national ambient air quality standards for them.[328]

New section 110 became the focal point for the new federal–state partnership. Under the principle of "cooperative federalism," EPA identifies criteria pollutants and promulgates national ambient air quality standards, and the states submit implementation plans to effectuate those standards.[329] Section 110 required states to prepare a "plan which provides for implementation, maintenance, and enforcement" of any national ambient air quality standard under section 109.[330] While section 110 included detailed requirements for state implementation plans that were not present in the 1967 Act, the basic premise that states should have the opportunity to prepare state implementation plans was already contained in the 1967 Act.[331]

The basic principles underlying the regulation of air pollutants under new sections 108, 109, and 110 were the same as those under section 107 of the 1967 Act. Under both acts, air pollution problems were to be addressed within particular air quality control regions, air quality criteria were to be developed, air quality standards were to be developed based on air quality criteria, and state implementation plans were to be developed to meet those standards.[332] What changed significantly is that Congress eliminated the discretion of the states regarding the development of air quality standards, and granted that authority exclusively to EPA.[333] Still, states retained authority over the decisions of how to achieve those standards, even after the 1970 Act.[334]

New section 111 also strengthened federal authority over air pollution control, by authorizing the new source performance standards program.[335] Congress directed EPA to promulgate regulations for particular industrial sectors that would apply throughout the United States.[336] Under this program, EPA has promulgated numerical emissions standards for individual

328 *See generally* 40 C.F.R. §§ 50.1–50.17 (2012) (setting forth national ambient air quality standards for PM_{10} and $PM_{2.5}$ (collectively, "particulates"), ozone, sulfur dioxide, nitrogen oxides, lead, and carbon monoxide). Although the statute does not use the term "criteria pollutants," EPA regulations use this term to refer to air pollutants identified by the EPA Administrator under section 108. *See, e.g.*, 40 C.F.R. 52.31 (2013).

329 *See generally* Patricia Ross McCubbin, Michigan v. EPA*: Interstate Ozone Pollution and EPA's NO_x SIP Call*, 20 ST. LOUIS U. PUB. L. REV. 47, 61–63 (2001) (illustrating the concept of "cooperative federalism" in the context of EPA's efforts to address the problem of nonattainment of the ozone NAAQS).

330 § 4(a), 84 Stat. at 1680 (amending the existing CAA to create a new section 110(a)). This language closely follows the language regarding plans contemplated by the 1967 Act. Pub. L. No. 90-148, § 108, 81 Stat. 485, 492 (1967).

331 § 108(c)(1), 81 Stat. at 491–92.

332 *Compare id.* §§ 107–108, at 490–92, *with* Clean Air Act Amendments of 1970, Pub. L. No. 91-604, §4(a), 84 Stat. 1676, 1678–80 (amending the existing CAA to create new sections 107–110).

333 *See* § 4(a), 84 Stat. at 1678–79 (amending the existing CAA to create new sections 108–109).

334 *Id.* at 1680 (amending the existing CAA to create a new section 110).

335 *Id.* at 1683 (amending the existing CAA to create a new section 111).

336 *Id.* at 1683–84.

facilities, on a sector-by-sector basis.[337] This is a form of direct regulation by EPA, as opposed to the "cooperative federalism" approach of sections 108, 109, and 110.[338]

Congress introduced another form of direct regulation in section 112, which authorized EPA to regulate hazardous air pollutants, on a sector-by-sector basis.[339] This amendment was an outgrowth of the national emissions standards study required by the 1967 Act.[340] Under section 112, Congress directed EPA to promulgate regulations identifying particular "hazardous air pollutants."[341] Congress defined a "hazardous air pollutant" as an air pollutant that "may cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness."[342] Therefore, they present a greater danger to public health than the criteria pollutants.[343] In a familiar mix of discretionary powers and mandatory obligations, Congress required EPA to promulgate emissions standards for chemicals that are hazardous air pollutants in the judgment of the Administrator.[344] In 1970, this would have appeared to be a significant strengthening of the federal air pollution law.[345]

But the full significance of the section 112 amendments in 1970 was overstated, or at least was delayed by a period of decades. For the next twenty years, EPA did not diligently exercise its discretion to identify hazardous air pollutants. It identified only eight hazardous air pollutants and promulgated emissions standards for seven of them.[346] In response to EPA's failure to exercise its discretion diligently, Congress amended the Clean Air Act in 1990 to specifically identify 189 hazardous air pollutants, eliminating

337 *E.g.*, 40 C.F.R. § 60.40 (2013) (Standards of Performance for Fossil-Fuel-Fired Steam Generators); 40 C.F.R. § 60.90 (2013) (Standards of Performance for Hot Mix Asphalt Plants); 40 C.F.R. § 60.100 (2013) (Standards of Performance for Petroleum Refineries); 40 C.F.R. § 60.50b (2013) (Standards of Performance for Large Municipal Waste Combustors for Which Constructions Is Commenced After Sept. 20, 1994 or for Which Modification or Reconstruction Is Commenced After June 19, 1996).

338 Christopher D. Ahlers, *Presidential Authority over EPA Rulemaking Under the Clean Air Act*, 44 ENVTL. L. 31, 34 (2014) (summarizing the concept of "cooperative federalism" in the context of the statutory sections of the CAA).

339 § 4(a), 84 Stat. at 1685 (amending the existing CAA to create a new section 112).

340 *See supra* note 277.

341 § 4(a), 84 Stat. at 1685 (amending the existing CAA to create a new section 112); *see also* U.S. Envtl. Prot. Agency, *About Air Toxics*, http://www.epa.gov/air/toxicair/newtoxics.html (last visited Feb. 14, 2015) (noting pathways of exposure and significant health impacts of hazardous air pollutants).

342 § 4(a), 84 Stat. at 1685 (amending the existing CAA to create a new section 112).

343 *Id.* at 1678 (requiring that a criteria pollutant merely have an "adverse effect on public health or welfare," in new section 108).

344 *Id.* at 1685 (amending the existing CAA to create a new section 112(b)(1)(A)).

345 *See* Air Quality Act of 1967, Pub. L. No. 90-148, Title I, 81 Stat. 485, 485–99 (following an approach to stationary sources that recognized the primary authority of the states).

346 40 C.F.R. §§ 61.01–.252 (1988) (standards for emissions of radionuclides, beryllium, mercury, vinyl chloride, benzene, coke oven emissions, asbestos, and inorganic arsenic, from particular industrial sectors). Robert J. Martineau Jr. & Ben Snowden, *Hazardous Air Pollutants*, *in* THE CLEAN AIR ACT HANDBOOK 231, 232 (Julie R. Domike & Alec C. Zacaroli eds., 3d ed. 2011).

EPA's discretion over whether to regulate them.[347] Since 1990, EPA has promulgated over one hundred national emission standards for hazardous air pollutants.[348]

Even so, there was a delay of another twenty-two years in promulgating emissions standards for the most significant source of hazardous air pollutants—the electric utility industry.[349] Coal-fired power plants are a major source of hazardous air pollutant emissions.[350] The original seven national emission standards for hazardous air pollutants were not directed at emissions from the generation of electric power by the utility industry.[351]

Despite Congress's rigorous designation of 189 hazardous air pollutants in the 1990 amendments, it added a provision allowing EPA to regulate hazardous air pollutants from the utility industry only if it made a factual finding that it was "appropriate and necessary" to do so, after performing a study of the hazards to public health as a result of emissions from electric utility steam generating units.[352] The Clinton EPA made an "appropriate and necessary" finding ten years later, after reviewing studies demonstrating the danger to public health and welfare from mercury emissions.[353] This set the stage for regulation.

But following a change in political control of the White House, the Bush EPA abandoned the use of direct authority under section 112, and instead attempted to create an emissions trading program for mercury emissions from power plants under the less stringent new source performance standards program of section 111.[354] The United States Court of Appeals for

347 Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 301, 104 Stat. 2531, 2532–35 (amending the existing CAA to create a new section 112(b)(1)).

348 *See* 40 C.F.R. §§ 63.1–.252 (2014).

349 This rule is variously known as the Mercury and Air Toxics Standards (MATS), the mercury NESHAP, or the Utility MACT (named after the Maximum Achievable Control Technology standard that is required by the rule). National Emissions 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, 9304 (Feb. 16, 2012) (codified at 40 C.F.R. pts. 60, 63) ("Pursuant to CAA section 112, the EPA is establishing NESHAP that will require coal- and oil-fired EGUs to meet hazardous air pollutant (HAP) standards . . . .").

350 AM. LUNG ASS'N, TOXIC AIR: THE CASE FOR CLEANING UP COAL-FIRED POWER PLANTS 2 (2011), *available at* http://www.lung.org/assets/documents/healthy-air/toxic-air-report.pdf.

351 *See* 40 C.F.R. §§ 61.01–61.252 (1988).

352 Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 301, 104 Stat. 2531, 2558 (amending the existing CAA to create a new section 112(n)(1)); 42 U.S.C. § 7412(n)(1)(A) (2012).

353 Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,826 (Dec. 20, 2000) ("Based on the available information, the Administrator finds that regulation of HAP emissions from . . . electric utility steam generating units under section 112 of the CAA is appropriate and necessary.").

354 *See* 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, 70 Fed. Reg. 15,994, 15,994 (Mar. 29, 2005) (reversing the "appropriate and necessary" finding); Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg.

the District of Columbia struck down these rules in a legal challenge by various states, clearing the way for direct regulation under section 112.[355]

EPA finally promulgated the anticipated section 112 standards in February 2012.[356] EPA estimated the benefits of the rule in 2016 to be between $33 billion and $90 billion, depending on the discount rate.[357] The United States Court of Appeals for the District of Columbia upheld this rule in a legal challenge by business and industry.[358] Therefore, it was the 1990 amendments, and not the 1970 amendments, that were the proximate cause of the regulation of hazardous air pollutants from the utility industry, twenty-two years later.

B. Mobile Sources

The 1970 Act also contained significant revisions to Title II, applicable to motor vehicles. The single most important amendment of Title II—and the single most important amendment in the history of the CAA—was a statutory requirement for EPA to issue regulations requiring the automobile industry to reduce the concentrations of carbon monoxide, hydrocarbons, and nitrogen oxides by 90% over a five-year period.[359] This amendment reflected the concept of technology forcing.[360] Unlike standards for stationary sources, which have been determined based on available or achievable technology, the statutory standards for mobile sources in 1970 were set regardless of whether there was an available or achievable technology.[361] In the case of passenger vehicles, Congress intended for the

28,606, 28,606–08 (May 18, 2005) (codified at 40 C.F.R. pts. 60, 72, 75) (creating an emissions trading program for mercury, under section 111).

355 New Jersey v. EPA, 517 F.3d 574, 578 (D.C. Cir. 2008).

356 77 Fed. Reg. 9304, 9304 (Feb. 16, 2012).

357 *Id.* at 9306.

358 White Stallion Energy Ctr. v. EPA, 748 F.3d 1222, 1229 (D.C. Cir. 2014), *cert. granted in part sub nom.* Michigan v. EPA, 135 S.Ct. 702, 702 (Nov. 25, 2014), *and cert. granted in part sub nom.* Utility Air Regulatory Grp. v. EPA, 135 S.Ct. 702, 702–03 (Nov. 25, 2014), *and cert. granted in part sub nom.* Nat'l Mining Assoc. v. EPA, 135 S.Ct. 703, 703 (Nov. 25, 2014).

359 *See* Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 6(a), 84 Stat. 1676, 1690 (amending the existing CAA to create a new section 202(b)). The amendments required reductions of at least 90% from emissions of carbon monoxide and hydrocarbons for light duty vehicles and engines during or after model year 1975, as compared with model year 1970. *Id.* They also required reductions of at least 90% from emissions of nitrogen oxides for light duty vehicles and engines during or after model year 1976, as compared with model year 1971. *Id.*

360 *See* D. Bruce La Pierre, *Technology-Forcing and Federal Environmental Protection Statutes*, 62 IOWA L. REV. 771, 772–73 (1977) (setting forth examples of technology-forcing methods).

361 *See* § 6(a), 84 Stat. at 1690 (amending the existing CAA to create a new section 202(a)) (providing EPA with the authority to establish standards based on risk to public health or welfare, and only considering existing technology when deciding when the standards will take effect). In fact, Congress required EPA to make an annual report to Congress "with respect to the development of systems necessary to implement the emission standards established pursuant to this section." *Id.* § 6(a) at 1691. This reporting requirement was based on the premise that technology might not be immediately available.

law to lead technology, not for technology to lead the law.[362] The practical significance was that the automobile industry was required to develop the technology to meet quantitative emissions reductions, resulting in the development of the catalytic converter.[363] Despite industry objections, litigation in federal court, a judicial extension of time, and further delay, new automobiles were eventually able to meet the standards within twelve years.[364] This all resulted from a relatively simple legislative amendment, which directly required specific emissions reductions, rather than leaving them up to EPA's discretion.

Congress also refined existing requirements for certificates of conformity, in section 206.[365] Congress had initially provided for a certificate of conformity in the 1963 Act.[366] The 1970 amendments preserved the practice of issuing a certificate of conformity to an automobile manufacturer to document the conformity of a prototype model.[367] But Congress strengthened the framework by authorizing EPA to test vehicles to determine compliance with the certificate.[368] This involved a monitoring process that helped solidify the regulatory program for air emissions from cars and trucks.[369] Procedures for suspension of certificates, hearings, judicial review, inspection, testing, and information disclosure were all essential parts of this program.[370] This amendment led to EPA's development of the Selective Enforcement Audit (SEA), a procedure for which EPA has promulgated regulations.[371]

C. Appropriations

The 1970 Act provided an increase in the level of authorized appropriations. For research relating to fuels and vehicles, Congress authorized appropriations of $75,000,000 for 1971, $125,000,000 for 1972, and $150,000,000 for 1973.[372] In 2014 dollars, this would correspond to

362 Int'l Harvester Co. v. Ruckelshaus, 478 F.2d 615, 623 (D.C. Cir., 1973) ("Congress was aware that these 1975 standards were 'drastic medicine,' designed to 'force the state of the art.'") (footnotes omitted).

363 OFFICE OF MOBILE SOURCES, U.S. ENVTL. PROT. AGENCY, MILESTONES IN AUTO EMISSIONS CONTROL 2 (1994), *available at* http://www.epa.gov/otaq/consumer/12-miles.pdf (noting that in 1975, "[t]he first catalytic converters appear, and with them, unleaded gasoline, in response to HC and CO standards").

364 *Id.* (noting that in 1981, "[n]ew cars meet the amended Clean Air Act standards for the first time").

365 § 8(a), 84 Stat. at 1694–96 (amending the existing CAA to create a new section 206).

366 Clean Air Act of 1965, Pub. L. No. 89-272, § 206, 79 Stat. 992, 994.

367 *See* § 8(a), 84 Stat. at 1694–96 (amending the existing CAA to create a new section 206).

368 *Id.* at 1694–95 (amending the existing CAA to create a new section 206(b)).

369 *See id.* at 1694–96 (amending the existing CAA to create a new section 206).

370 *Id.* (amending the existing CAA to create a new section 206(b)–(e)) (granting EPA authority to test vehicles and engines, make public test results, and suspend or revoke a certificate of conformity).

371 40 C.F.R. §§ 1068.401–.455 (2012).

372 § 13(a), 84 Stat. at 1709 (Appropriations).

$438,400,000 for 1971, $707,942,000 for 1972, and $799,783,000 for 1973.[373] Given that the 1967 Act had already authorized appropriations of $90,000,000 for 1969, the increases authorized by the 1970 amendments were modest.[374] The level of authorization actually declined from 1969 to 1971, and subsequent increases for 1972 and 1973 reflected a vision of a more centralized federal role in the years to come.

With respect to general appropriations under the 1970 Act, Congress authorized $125,000,000 for 1971, $225,000,000 for 1972, and $300,000,000 for 1973.[375] In 2014 dollars, this would correspond to $730,666,000 for 1971, $1,274,296,000 for 1972, and $1,599,567,000 for 1973.[376] Given that the 1967 Act had already authorized appropriations of $134,300,000 for 1970, the increase in authorizations was modest.[377] The level of authorization actually declined from 1970 to 1971, and subsequent increases for 1972 and 1973 reflected a vision of a more centralized federal role in the years to come.

VIII. TRENDS IN THE EVOLUTION OF THE CLEAN AIR ACT

It is an oversimplification to view the pre-1970 federal air pollution acts as weak and ineffectual, and the 1970 Act as representing a completely new approach. Moreover, this view does not explain how the statute was constructed. The reality is that the five acts between 1955 and 1970 represented an evolution of a highly complex regulatory program. There are four important trends worth noting, which necessarily required years to play out.

First, the relationship between air quality criteria and ambient air quality standards evolved as a critical feature of the federal regulatory program. While air quality criteria describe the effects of ambient air concentrations of a particular air pollutant over a specific time period, ambient air quality standards prescribe concentrations of a particular air pollutant that may not be exceeded legally over a specific time period.[378] In the 1960s, Congress intended to regulate the medium of air through air quality standards, an approach that paralleled the use of water quality standards to address water pollution.[379] First, there had to be a basis for standards. In 1963, Congress directed the Department to develop criteria that could form a basis for a judgment for the setting of air quality standards.[380] But it did not direct the Department to set actual air quality

373 *See CPI Inflation Calculator*, *supra* note 55.

374 *See* Air Quality Act of 1967, Pub. L. No. 90-148, § 104(c), 81 Stat. 485, 488 (Appropriations).

375 § 13(b), 84 Stat. at 1709.

376 *See CPI Inflation Calculator*, *supra* note 55.

377 § 309, 81 Stat. at 506–07 (Appropriations).

378 *See* Hon. Edmund S. Muskie, *Role of the Federal Government in Air Pollution Control*, 10 ARIZ. L. REV. 17, 22 (1968) (quoting Dr. John Middleton, Director of the National Center for Air Pollution Control).

379 1 RODGERS, *supra* note 8, at 174; *see supra* note 93.

380 Clean Air Act of 1963, Pub. L. No. 88-206, § 3(c), 77 Stat. 392, 395.

standards.[381] The complexity of the problem, combined with the limitations of science in establishing causes and effects, were a constraint on the ability to develop air quality criteria and air quality standards.[382] In 1967, Congress refined the approach by creating a program for states to develop air quality standards protective of public health.[383] In the 1970 Act, Congress continued the prevailing approach of setting ambient air quality standards based on air quality criteria.

Second, after settling on an approach that would base ambient air quality standards on air quality criteria, Congress had to decide who would set air quality standards. In theory, there were a number of possibilities: villages, towns, cities, counties, states, regions, or the federal government. In contrast, the 1963 Act determined that the federal government, the Department, would develop air quality criteria.[384] The 1967 Act determined that states should have the first opportunity to develop air quality standards.[385] This was consistent with the fundamental premise that states and local governments have primary responsibility for the prevention and control of air pollution.[386] Still, Congress included provisions that allowed the Department to develop federal air quality standards, where a state failed to do so.[387] In the 1970 Act, Congress refined this approach by withdrawing this discretion from the states, and granting the authority exclusively to EPA.[388]

Third, to regulate the medium of air, Congress had to identify the geographical areas to which ambient air quality standards would apply. Again, there were a number of possibilities: villages, towns, cities, counties, states, regions, or the entire nation. Congress chose not to define regions according to political boundaries, but according to physical and social factors.[389] In 1967, Congress directed the Department to define air quality control regions according to meteorological, atmospheric, and demographic considerations.[390] The premise was that local airsheds generate air pollution problems when the equilibrium between the generation of air pollutants and the dispersal of air pollutants is disturbed.[391] In the 1970 Act, Congress

381 *See id.* §§ 2–3 at 393–95.

382 Joseph D. Coons, *Air Pollution & Government Structure*, 10 ARIZ. L. REV. 48, 54 (1968) ("Thus it is clear that much of the knowledge of cause and effect relationships is still in a rudimentary stage of development.").

383 *See* § 108, 81 Stat. at 491–92.

384 § 3, 77 Stat. at 395.

385 § 108, 81 Stat. at 491–92.

386 *See, e.g.*, *id.* § 101, 81 Stat. at 485 ("[T]he prevention and control of air pollution at its source is the primary responsibility of States and local governments . . . ").

387 *Id.* § 108, at 491–92.

388 Clean Air Amendments of 1970, Pub. L. No. 91-604, § 4(a), 84 Stat. 1676, 1679 (amending the existing CAA to create a new section 109).

389 Muskie, *supra* note 377, at 22–23.

390 *Id.* § 107, 81 Stat. at 490–91.

391 Coons, *supra* note 381, at 52 ("Air Pollution becomes evident in specific localities when the rate of generation of one or more contaminants exceeds the rate of dispersal to the general global atmosphere over a given period of time."). In the previous paragraph of that article, the author made an avant garde observation for students of global warming, suggesting that there could be a worldwide disequilibrium in carbon dioxide. *Id.* ("Overloading of the total

continued the approach of using the air quality control region as a basic unit of analysis.[392]

Fourth, while Congress initially approached the problem of regulating air through ambient air quality standards, it gradually realized the need to supplement air quality standards with national emissions standards for particular industrial sectors. A key point of contention in the debate over the 1967 Act was whether ambient air quality standards or national emission standards should form the cornerstone for federal regulation.[393] President Johnson proposed the Air Quality Act of 1967, which would have directed the Department to develop and publish national emissions levels for particular industrial sectors.[394] Ironically, the Senate Subcommittee on Air and Water Pollution rejected this approach for a number of reasons, including the fact that it would treat all areas of the country the same, to the neglect of serious problem areas.[395] In other words, the subcommittee felt the proposed law did not go far enough. Still, the 1967 Act directed the Department to study the need for national emissions standards, which paved the way for the passage of the section 111 new source performance standards program and the section 112 hazardous air pollutants program. Those programs helped to consolidate EPA's newly granted authority in the 1970 Act.[396]

XI. CONCLUSION

This new analysis demonstrates that the CAA was not constructed in 1970 during the Year of the Environment, but rather evolved through a number of federal acts dating back to 1955. A review of those acts reveals layers of ideas for addressing air pollution control, which explain how the modern CAA was formed.

The 1970 Act refined major concepts and principles that had already been established in previous acts. The fundamental premise that the states and local governments have primary responsibility for the prevention and control of air pollution had already been established by the 1955 Act. The concepts of air quality criteria, air quality standards, air quality control regions, and implementation plans had already been established by the 1967 Act. In addition, the principle that the federal government should preempt state regulation of mobile sources, subject to the California waiver, had been

atmosphere of the earth is not a present problem; it does not appear to be even a long-term problem for most contaminants, with the possible exception of carbon dioxide and long-lived radioactive materials.").

392 § 4(a), 84 Stat. at 1678 (amending the existing CAA to create a new section 107).

393 Muskie, *supra* note 377, at 20 ("The 1967 statute was, in some ways, the most controversial air pollution control legislation enacted by the Congress. The disagreements centered on the question of whether the national program should be based on national emission standards or a national ambient air quality program.").

394 *Id.* at 20–21.

395 *Id.*

396 *See id.* at 22; Air Quality Act of 1967, Pub. L. No. 90-148, § 211, 81 Stat. 485, 503.

established by the 1967 Act, after the promulgation of federal emissions standards in 1966.

To be sure, the 1970 Act involved some significant departures from previous approaches. Congress strengthened the powers of the federal government over the identification of air pollutants and the development of air quality standards. This was reflected in the development of the "cooperative federalism" framework in sections 108, 109, and 110 of the modern CAA.[397] With respect to stationary sources, Congress introduced new programs for direct federal regulation of individual sectors—the section 111 program for new source performance standards and the section 112 program for hazardous air pollutants.[398] With respect to mobile sources, Congress mandated that EPA issue regulations requiring the automobile industry to reduce emissions of certain air pollutants by 90% over a five-year period, a legislative fiat that ultimately turned out to be successful, despite a delay of several years.[399] Still, these achievements were largely the result of legal approaches already codified or contemplated in previous federal air pollution acts.

397 § 4(a), 84 Stat. at 1678–83 (amending the existing CAA to create new sections 108–111).

398 *Id.* at 1683–86 (amending the existing CAA to create new sections 111–112).

399 *Id.* § 6(a), at 1690 (amending the existing CAA to create a new section 202).