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Billboards and Big Utilities: Borrowing Land-Use Concepts To Regulate “Nonconforming” Sources Under the Clean Air Act

Deepa Varadarajan

I. INTRODUCTION

For more than thirty years, numerous coal-fired, electric utility plants have enjoyed “grandfathered” status under the Clean Air Act (CAA), leaving them virtually untouched by the dictates of increasingly stringent air pollution regulation in the United States. The Clean Air Act of 1970, which essentially codified the federal regulatory approach toward air pollution, established a two-tiered framework for the regulation of major stationary sources of air pollution.¹ This approach mandated stricter federal pollution-control technology requirements on power plants built after the passage of new regulatory standards than those applicable to existing plants. This bifurcated approach, often called the “old-new division”² in pollution-control regulation, continues to the present day, despite two subsequent rounds of amendments to the CAA in 1977 and 1990.

The Clean Air Act Amendments of 1977 introduced two programs, New Source Review (NSR) and Prevention of Significant Deterioration (PSD), which attempted to narrow the old-new divide in control technology requirements. Any major modification of an old source would render it “good as new” for federal regulatory purposes, leading to the imposition of the same control technology requirements that new sources were obligated to follow in a given area. Despite this subsequent “narrowing,” many old sources, particularly coal-burning utility plants, predominantly located in the Midwest, continue to operate under more lenient pollution-control

1. Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676 (codified as amended at 42 U.S.C. §§ 7401-7642 (2000)).

2. Peter Huber, *The Old-New Division in Risk Regulation*, 69 VA. L. REV. 1025 (1983).

requirements. Together, these old sources are responsible for approximately two-thirds of the nation's sulfur dioxide emissions, forty percent of carbon dioxide emissions, and one-third of the nation's nitrogen oxide and mercury pollution.³ Moreover, if these plants were subject to the same federal technology requirements imposed on their new source counterparts, their emissions figures would diminish by several orders of magnitude.⁴ Unfortunately, the last major round of amendments to the Clean Air Act, which took place in 1990, did little to further narrow the old-new divide in federal pollution-control technology requirements for major stationary sources of air pollution.⁵

The continued grandfathering of old sources runs afoul of not only the stated purpose of the CAA to improve the nation's air quality, but also its larger policy goal of stimulating investment in and growth of cleaner technologies. Even if the original motivations behind a two-tiered approach in the 1970 CAA were justifiable both from a policy and constitutional standpoint,⁶ a contention that even some current critics of grandfathering seem to support, much doubt exists as to its continued utility or validity. In 1998, two congressional bills were introduced that would have eliminated the grandfathered status of coal-fired power plants under the Clean Air Act.⁷ However, these bills were unable to withstand the arguments of electricity-generation firms and their allies in Congress. A cynical observer might attribute (and, indeed, many have) the failure of such bills to the

3. See *Harmonizing the Clean Air Act with Our Nation's Energy Policy: Hearing Before the Senate Subcomm. on Clean Air, Wetlands, Private Property, and the Nuclear Safety Comm. on Environment and Public Works*, 107th Cong. (2001) (statement of David Hawkins, Director, Air and Energy Program, Natural Resources Defense Council), at <http://www.nrdc.org/air/pollution/tdh0301.asp> [hereinafter *NRDC Report*]; see also Arnold W. Reitze, Jr., *State and Federal Command-and-Control Regulation of Emissions from Fossil-Fuel Electric Power Generating Plants*, 32 ENVTL. L. 369, 372 (2002). Reitze states:

In 1999, coal was used to generate 52.8% of the electricity generated in the United States; petroleum was used to produce 2.56%; and natural gas was used to produce 10.78%. . . . Most of the nation's coal-burning plants were constructed between 1950 and 1980, and these plants are the nation's most significant stationary source of air pollution. New electric power plants almost always use gas-fired turbines because such plants are less expensive to construct, have a higher thermal efficiency, and produce far less pollution. This offsets the need for gas, which is more expensive than coal.

Id. (footnotes omitted).

4. See Shi-Ling Hsu, *Reducing Emission from the Electricity Generation Industry: Can We Finally Do It?*, 14 TUL. ENVTL. L.J. 427, 434 n.35 (2001).

5. See *infra* note 33 and accompanying text.

6. See *infra* Section II.D. See generally Huber, *supra* note 2 (discussing the reasons underlying the popularity of two-tiered regulation).

7. Senate Bill 2636, introduced in October 1998 by Senator Leahy (a Democrat from Vermont), would have required existing generating units to meet New Source Review within ten years, as well as meet other emissions and efficiency standards for NO_x, CO₂, and mercury. S. 2636, 105th Cong. (1998). Senate Bill 2610, introduced in October 1998 by Senator Lieberman (a Democrat from Connecticut), would also have required grandfathered generating units to meet New Source Review. S. 2610, 105th Cong. (1998); see also Hsu, *supra* note 4, at 36 (discussing Congress's failure to enact the above-mentioned bills).

lobbying power of the energy industry and, while lamenting the power of big money to influence environmental legislation, accept this aspect of American politics and focus the scholarly discourse on approaches more attuned to political realities, such as market-driven, cap-and-trade programs, which have become increasingly popular in recent decades.⁸

This outright dismissal is simplistic, however, because the old-new distinctions were originally adopted in the 1970 CAA with a variety of motives.⁹ Their original inclusion was due in large part to Fifth Amendment takings considerations, as well as some undoubtedly political motives. It is this former takings argument, not the political motivations¹⁰ behind the old-new distinctions in technology requirements under the CAA, that will serve as the focus of my analysis. Insofar as the takings argument continues to validate (or invalidate) old-new distinctions in the regulation of utilities, the land-use context can serve as a useful conceptual guide.

In the land-use context, zoning law has been forced to contend with a theoretical problem akin to that presented by the regulation of old sources under the Clean Air Act. Namely, when local governments pass zoning ordinances designating the permitted land uses in a given area, certain land uses will likely already exist on the regulated properties that are inconsistent with the new zoning ordinances. These preexisting uses, deemed “nonconforming” uses, cannot be eliminated outright by local governments without compensation, due to the constitutional protection afforded property owners against unjust takings. However, if these uses were allowed to continue indefinitely, they would threaten the very purpose of Euclidian zoning—to ensure an orderly pattern of local development through the separation of conflicting uses.¹¹ In response to this conundrum, a land-use doctrine evolved over the past half century to deal with the issue of nonconforming uses. In many respects, its pattern of evolution bears a striking resemblance to the development of the regulatory regime designed

8. Cap-and-trade programs place a limit on total emissions of a given pollutant in a given area, and then allow firms that emit this pollutant to trade emissions allowances (each allowance entitles the user to emit a certain amount) with each other and with other third-party traders. These types of programs can be contrasted with command-and-control programs, which tend to be more prescriptive, requiring the installation of certain types of pollution-control equipment. See *infra* Section V.C (outlining the arguments commonly offered by proponents and critics of command-and-control programs).

9. See *infra* Section II.D.

10. The exclusion of “political” motivations from the analysis is not intended to understate their importance in the creation of grandfather clauses by legislatures. Air pollution regulation, in the language of public choice theory, presents a classic example of regulation that generates distributed benefits and concentrated costs. This type of regulation is typically met with ferocious resistance and intense lobbying efforts from those special-interest groups that have the most to lose—in this case, the owners of existing electric utilities. For a discussion of public choice theory, see WILLIAM N. ESKRIDGE ET AL., *CASES AND MATERIALS ON LEGISLATION* 54-60 (3d ed. 2001).

11. See DANIEL P. SELMI & JAMES A. KUSHNER, *LAND USE REGULATION: CASES AND MATERIALS* 68 (1999).

to address old sources of air pollution, from the lenient 1970 CAA to the comparatively stringent 1977 CAA Amendments.

Regulations emerged in the zoning context that allowed a nonconforming use to continue provided there were no major alterations to the use.¹² Zoning regulators believed that these restrictions would cause the gradual disappearance of such nonconforming uses.¹³ Similarly, the 1977 Amendments to the CAA attempted to bring more old sources within the ambit of the new source-control technology regime under the NSR and PSD programs, in which “major modifications” to old sources would result in the loss of grandfathered or protected status. Again, the expectation behind such restrictions was the gradual replacement of old sources by newer, cleaner sources. Interestingly, in both cases, such restrictions failed to bring about the desired goal: the elimination of the nonconforming use.¹⁴ In fact, the opposite has occurred due to the unique economic advantages unwittingly bestowed upon owners of old sources and nonconforming uses alike by these types of regulations. They have created incentives to continue nonconforming uses in the land-use context, and in the air pollution context, to extend the life of old, coal-burning utilities beyond what was originally envisioned in the CAA.¹⁵

Land-use regulation, however, has given birth to one technique that, in many cases, has successfully resulted in the elimination of nonconforming uses—amortization. Zoning laws can require the termination of nonconforming uses provided that the owner is given a sufficient time period in which her property investment can be amortized. Although it is often a controversial technique, tolerated in different measure by the courts of different states, it is generally accepted provided that the amortization period is a “reasonable” one. Thus, one can say that the general concept of amortization has survived takings challenges in the land-use context. Interestingly, it has never been incorporated into the highly analogous air pollution context, and takings arguments continue to carry weight in the legislative debate over the elimination of old-new distinctions in technology requirements.

In Part II of this Note, I will provide an overview of how the regulatory framework has developed with regard to federal control technology

12. 7 PATRICK ROHAN, ZONING AND LAND USE CONTROLS, § 41.01[2], at 41-7 (1978); see also *Hinves v. Comm’r of Pub. Works*, 172 N.E.2d 232 (Mass. 1961) (finding that the owner’s use of property as a catering service did not constitute a continuance of the nonconforming use of property as a grocery store); 7 ROHAN, *supra*, § 41.01[5], at 41-19 (“In the absence of a specific statute to the contrary, an existing nonconforming use will be permitted to continue only if it is a continuance of substantially the same use made before the zoning enactment.”).

13. See 7 ROHAN, *supra* note 12, § 41.01[2], at 41-7.

14. See 7 *id.* § 41.01[2], at 41-7 to -8; see also *infra* note 60 (discussing the reasons why the expected retirement of old coal-fired plants has not occurred).

15. See *infra* note 60.

requirements governing major stationary sources. I will focus on the statutory language of the 1970 CAA and the 1977 CAA Amendments and subsequent administrative and judicial interpretations. In Part III, I will examine the development of land-use doctrine governing the regulation of preexisting nonconforming uses and highlight its theoretical similarities to the air pollution context. In Part IV, I will look specifically at the jurisprudence surrounding the use of amortization provisions in the zoning context. By and large, a court's acceptance of an amortization provision in the majority of cases hinges on a determination of the reasonableness of an amortization period based on (1) a balancing of public good against private loss and/or (2) the length of the amortization period in relation to the investment. Another important vein of judicial reasoning that emerges on the "reasonableness" of amortization provisions in the takings calculation is what I term the "amortization-compensation equation." This line of reasoning, popularized in the context of billboard amortization, suggests that the monopolistic position afforded to the owner of a nonconforming use during the amortization period is itself a type of compensation for future loss. In Part V, I will propose that the incorporation of amortization provisions into the Clean Air Act could provide a viable solution to the problem posed by old sources and, if applied properly, is a solution that is both preferable to several proposed alternatives and one that should successfully withstand constitutional takings arguments. Finally, I will frame this proposal within the context of a larger debate between the proponents and critics of command-and-control regulation.

II. THE "GRANDFATHERING" OF OLD SOURCES: AN OVERVIEW

A. *Clean Air Act Amendments of 1970*

The Clean Air Act Amendments of 1970 established the basic regulatory framework of air pollution control in the United States. This legislation directed the newly created Environmental Protection Agency (EPA) to establish two sets of National Ambient Air Quality Standards (NAAQS) for six criteria pollutants.¹⁶ Depending on whether air quality regions in a state met or fell short of these uniform, federally prescribed NAAQS, they were designated as "attainment" or "nonattainment" areas.¹⁷

16. Clean Air Amendments of 1970, Pub. L. No. 91-604, §§ 108-109, 84 Stat. 1676, 1678-80 (codified as amended at 42 U.S.C. §§ 7408-7409 (2000)). The EPA sets primary standards, which limit allowable pollution to levels that will not endanger public health, and secondary standards, which set maximum levels of pollution that will not endanger the public welfare. Criteria pollutants are essentially widespread pollutants that endanger public health. They include carbon monoxide (CO), particulate matter, hydrocarbons, nitrogen oxides (NO_x), and photochemical oxidants (i.e., ozone).

17. § 107, 84 Stat. at 1678.

In addition, the 1970 Act established new source performance standards (NSPS) for certain categories of new sources. Section 111 of the CAA directs the EPA to set numerical emissions limitations designed to reflect "the best system of emission reduction" available based on the pollution-control technology that has been "adequately demonstrated" to be the best.¹⁸ NSPS standards would be established for various categories of new sources based on a determination that such a source would pose a major contribution to air pollution.¹⁹ Moreover, the Act defined "new" sources as those whose construction or modification commenced after the *proposal* of NSPS for that source category.²⁰ Although both new and old sources would still be subject to ambient air quality regulation implemented by states, only new sources would be forced to install more stringent pollution-control equipment in order to meet NSPS requirements. Thus began the two-tiered regulatory system distinguishing old and new sources of air pollution under the Clean Air Act.

B. *Clean Air Act Amendments of 1977*

The deficiencies of the 1970 Act became clear by the middle of the decade. Not only were many air quality regions throughout the country in violation of the NAAQS, but the 1970 Act also "failed to address how the states were to meet the need for economic development, which might include the construction of new sources of pollution."²¹ While the Act remained ambiguous on the subject of new source growth in attainment areas,²² it forced states to "prevent the construction or modification of any new source . . . which the State determines will prevent the attainment or maintenance" of the NAAQS.²³ Thus, it seemed to mandate the prohibition of new source growth in nonattainment areas. Although a 1976 EPA interpretive ruling known as the "emissions offset policy" attempted to fill

18. § 111(a)(1), 84 Stat. at 1683.

19. § 111(b)(1)(A), 84 Stat. at 1684.

20. § 111(a)(2), 84 Stat. at 1683; *see also* THE CLEAN AIR ACT HANDBOOK 259-60 (Robert J. Martineau, Jr. & David P. Novello eds., 1998) (noting that even if a regulation is not final at the time a source is constructed or modified, so long as it has been proposed, the source is subject to the NSPS regulation because it has been effectively put "on notice" of the impending regulation). As the editors of the handbook note:

This is contrary to the typical regulatory approach with respect to grandfathering sources before issuance of a *final* rule. Congress chose this approach to prevent a flurry of activity to grandfather sources just shortly after proposal of a rule as a means to avoid being subject to a new standard.

Id. at 260.

21. Jack L. Landau, *Chevron, U.S.A. v. NRDC: The Supreme Court Declines To Burst EPA's Bubble Concept*, 15 ENVTL. L. 285, 290-91 (1985).

22. *See* Leslie Maxfield & Jerry Nyc, *Comment, Non-Degradation and Pollution Control Alternatives Under Clean Air Act of 1970*, 9 LAND & WATER L. REV. 507, 512 (1974).

23. § 110(a)(4), 84 Stat. at 1681.

this gap by establishing provisions for new source growth in nonattainment areas, it only further strengthened the old-new divide by placing responsibility for the financing of old source emissions reduction on new sources.²⁴ The “emissions offset policy” allowed states to permit the construction of new sources of pollution in nonattainment areas so long as either the states or new sources could procure emission reductions from existing sources to offset new pollution.

The 1977 Clean Air Act Amendments not only clearly specified the manner in which new source growth would be allowed in both attainment and nonattainment areas, but they also forced old sources to shoulder more responsibility for emissions reduction. First, regarding state implementation programs, these Amendments required states to impose emission limits on existing pollution sources (i.e., old sources) in nonattainment areas based on “reasonably available control technology” (RACT).²⁵ Moreover, while the Amendments continued to incorporate new source performance standards, they also introduced two new permitting programs for the construction or modification of “major” sources in attainment and nonattainment areas.

In nonattainment areas, the New Source Review program allowed the growth of new sources as well as major modifications to existing sources provided that they submit to a stringent permitting process and preconstruction requirements. Codified in part D to title I of the 1977 CAA Amendments, NSR requires “major stationary sources” in nonattainment areas to meet the “lowest achievable emission rate” (LAER),²⁶ which encompasses “the most stringent emission limitation” possible, irrespective of the costs of compliance.²⁷ LAER imposes the strictest of control technology requirements under the CAA. In addition, the 1977 Amendments mandate emissions “offsetting” by new or modified sources in nonattainment areas.²⁸

In attainment areas, the Prevention of Significant Deterioration program established a permitting process that attempted to preserve existing air quality. The PSD program requires new or modified “major emitting facilit[ies]” to implement the “best available control technology” (BACT) for the emissions of every criterion pollutant it will increase by more than a de minimis amount.²⁹ BACT requirements, while exacting, differ from LAER requirements in that they “take[] into account energy,

24. Requirements for Preparation, Adaptation, and Submittal of Implementation Plans, 41 Fed. Reg. 55,524, 55,524-26 (Dec. 21, 1976) (codified as amended at 40 C.F.R. pt. 51 (2003)).

25. 42 U.S.C. § 7502(c)(1) (2000). RACT is the least stringent type of control technology regulation imposed by the CAA.

26. *Id.* § 7503(a)(2).

27. *Id.* § 7501(3)(A).

28. *Id.* § 7503(c)(1).

29. *Id.* § 7475(a)(4).

environmental, economic, and other costs."³⁰ Moreover, PSD further requires a new or modified source to demonstrate that it will not exceed the increment of allowable air quality deterioration prescribed by the EPA.³¹ Unmodified old sources in attainment areas are subject only to state ambient standards, however.

Together, the NSR and PSD programs have been identified by "[b]oth commentators and members of Congress . . . as the most significant foci of the 1977 Act" and "the method by which the EPA most often exerts direct control over emissions."³² In and of itself, however, the language of the 1977 Act seems to do little to bridge the old-new source gap. Aside from the imposition of RACT requirements on old sources in nonattainment areas and the more stringent LAER and BACT requirements triggered by major modifications of old sources, the statutory language itself seems to leave the two-tiered regulatory framework codified by the 1970 Act more or less intact. More than the actual language of the 1977 Amendments, however, it has been subsequent judicial and EPA interpretations of the statutory language that have attempted to narrow the old-new source divide in the imposition of federal pollution-control technology requirements.³³

C. *Subsequent Interpretations of the 1977 Amendments*

The ambiguous language of the Act, even after the 1977 Amendments, left several questions to be resolved by EPA rulemaking and, upon industry challenge, by courts.³⁴ Among the questions most pertinent to the application of PSD and NSR to old sources were, first, what constitutes a *major* modification of an existing source and, second, what constitutes a

30. See Landau, *supra* note 21, at 295.

31. 42 U.S.C. § 7475(a)(7). The PSD program establishes three different classes of attainment areas and allows varying amounts of air quality degradation in each. For instance, in Class I areas, which include national parks and wilderness area, very little air quality deterioration is permitted. In Class III areas, which encompass urban or industrial locations, PSD permits larger amounts of air quality degradation. See *id.* §§ 7472-7473.

32. Josh Drew, Comment, *Calculating Potential To Emit Under the Clean Air Act: The Importance of Federal Enforceability*, 91 NW. U. L. REV. 1114, 1123 (1997); see also DAVID P. CURRIE, AIR POLLUTION: FEDERAL LAW AND ANALYSIS § 6.14, at 6-40 (1981) (discussing the significance of the NSR/PSD programs).

33. Although the 1990 Amendments have done little in the way of further narrowing this old-new gap, one change is worth mentioning. Section 7412 outlines 189 toxic air pollutants that must be regulated by means of "maximum achievable control technology," and it applies to *all* major stationary sources. 42 U.S.C. § 7412(b).

34. One of the first questions addressed upon passage of the 1970 Amendments was what constituted a *major* emitting facility for purposes of PSD. The 1977 Act defined a major emitting facility as one of twenty-eight types of stationary sources that "emit, or have the potential to emit, one hundred tons per year or more of any air pollutant," as well as "any other source with the potential to emit two hundred and fifty tons per year or more of any air pollutant." *Id.* § 7479(1). The EPA's liberal interpretation of this statutory language was upheld by the D.C. Circuit in *Alabama Power Co. v. Costle*. 636 F.2d 323 (D.C. Cir. 1979).

significant net increase in emissions. The CAA provides that a facility undertaking a “major modification” that causes a “significant net emissions increase” is subject to NSR and PSD review and must install the requisite control technology.³⁵ Moreover, the CAA defines a modification as “any physical change, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted.”³⁶ Although no explicit exemption exists in the statute for routine maintenance activities, subsequent EPA regulations exempted “routine maintenance, repair and replacement” from the definition of a “major modification.”³⁷ Such an exemption was necessary to make the Act administratively feasible,³⁸ or as the EPA subsequently explained, without such an exemption, the definition would “encompass the most mundane activities at an industrial facility (even the repair or replacement of a single leaky pipe).”³⁹

However, even the definition of “routine maintenance, repair and replacement” proved a highly contentious issue. The D.C. Circuit in *Alabama Power Co. v. Costle* seemed to restrict the EPA’s routine maintenance exemption to “de minimis” activities,⁴⁰ for this was necessary in order to assure that the grandfathering of existing sources would not “constitute a perpetual immunity from all standards under the PSD program.”⁴¹ Although the EPA did not specify the meaning of “routine maintenance” in its regulation, it attempted to define the concept further in subsequent interpretive memoranda and industry NSR determinations.⁴² These subsequent interpretations would prove the subject of much industry litigation.

Historically, the EPA has looked to four factors in determining whether a modification was routine rather than major: the nature and extent of the modification, its purpose, frequency, and cost.⁴³ For the most part, this administrative analysis has survived two decades of court challenges, most notably in *Wisconsin Electric Power Co. v. Reilly*⁴⁴ (*WEPCO*). A more in-

35. 42 U.S.C. § 7411(a)(4).

36. *Id.*

37. 1977 Clean Air Act Amendments To Prevent Significant Deterioration, 43 Fed. Reg. 26,388, 26,404 (June 19, 1978) (codified at 40 C.F.R. § 52.21(b)(2)(iii)(a) (2002)).

38. Requirements for Preparation, Adoption and Submittal of Implementation Plans, 57 Fed. Reg. 32,314, 32,316-19 (July 21, 1992); see also John P. Dwyer, *The Pathology of Symbolic Legislation*, 17 *ECOLOGY L.Q.* 233 (1990) (discussing the frequent lack of administrative feasibility in environmental legislation as written by Congress).

39. Requirements for Preparation, Adoption and Submittal of Implementation Plans, 57 Fed. Reg. at 32,316.

40. 636 F.2d 323, 355-61 (D.C. Cir. 1979).

41. *Id.* at 400.

42. See Peter Lehner, *Clean Air Litigation in a Restructuring Electricity World*, 18 *PACE ENVTL. L. REV.* 309, 314 n.17 (2001).

43. See *Wis. Elec. Power Co. v. Reilly*, 893 F.2d 901, 910-11 (7th Cir. 1990).

44. *Id.*

depth examination of the “purpose” factor reveals an intent to “smoke out” old sources intent on prolonging their lives indefinitely, a message reminiscent of *Alabama Power*. Namely, in assessing the purpose of a modification, the *WEPCO* court distinguished routine maintenance activities from those modifications intended to “extend the life expectancy” of the plant, finding the latter to trigger NSR/PSD requirements.⁴⁵

Moreover, EPA interpretations of what constitutes a “significant net increase” in emissions have also attempted to clarify ambiguities in the CAA, but, again, these interpretations have given rise to industry challenge. For nitrogen oxide and sulfur dioxide emissions, a significant net emissions increase is defined as more than forty tons per year in attainment areas and somewhat less in nonattainment areas.⁴⁶ In calculating these emissions changes, “the basic concept . . . for power plants is to compare pre-modification actual emissions to the actual emissions as they would be projected after the change.”⁴⁷ In the projection of future emissions, however, any emissions increases due solely to increased demand, rather than those attributable to the proposed change, are exempted from the calculation.⁴⁸ This rule, known as the “demand growth exclusion” rule, which allows electric utilities to ignore coincidental emissions increases that result from other factors such as growth in electricity demand, has been questioned by the EPA in recent years,⁴⁹ but has nonetheless remained intact.

Despite these administrative and judicial attempts to bring more existing sources within the purview of stringent federal technology requirements, many existing electric utility plants have continued to escape the NSR/PSD provisions. Among the reasons for this failure are, first, “the rules themselves contain too many loopholes that allow sources to avoid NSR even though they continue to make significant investments year after year,”⁵⁰ and, second, some old sources have unlawfully misclassified

45. *Id.* at 912; see also *In re Tenn. Valley Auth.*, No. CAA-2000-04-008, 2000 WL 1358648, at *52 (Env'tl. Prot. Agency Sept. 15, 2000) (defining “maintenance projects” as “those projects that merely restore tangible assets to serviceability” as opposed to capital projects, which are “projects that add tangible new assets or leave existing assets in ‘better condition’ than when the original asset was installed for profitable service”).

46. 40 C.F.R. § 52.21(b)(2) (2002).

47. See *Lehner*, *supra* note 42, at 316. The calculation of premodification emissions is based on the highest two of the previous five years of emissions. *Id.*

48. 40 C.F.R. § 52.21(b)(33)(ii).

49. See *infra* text accompanying notes 129-130.

50. See *NRDC Report*, *supra* note 3, § IV. Such loopholes include the following: (1) categorical exemptions and exclusions; (2) weak rules for calculating emissions increases; and (3) broad provisions for “netting” out of review, which allow existing sources to count “reductions” from grandfathered pieces of polluting equipment in calculating whether a new project will result in an emissions increase that would trigger NSR. Introduced in 1981, “[n]etting allows a grandfathered pollution source to ‘bequeath’ its pollution privileges to its descendant, the new piece of equipment.” *Id.*

projects in order to escape NSR requirements.⁵¹ Thus, the current picture is fairly dismal. Electric power plants built more than twenty years ago are responsible for “84% of total US nitrogen oxides (NO_x) pollution from that sector and 88% of sulfur dioxide (SO_x). In contrast, 20-year-old cars contribute less than 7% of US car NO_x pollution and 3% of that sector’s VOC (volatile organic compounds) pollution.”⁵²

D. *Motivations for Grandfathering: Historical and Legislative Perspective*

In light of its regressive effects in the air pollution context, it merits asking: What led to the adoption of a bifurcated, old-new approach in the first place? The fact is, grandfathering is hardly uncommon in the regulatory context; the “old-new division cuts deeply into our legislative landscape.”⁵³ Peter Huber describes the general reasons underlying the popularity of two-tiered regulation:

Old risks derive from settled production and consumption choices and from established technology. Their regulation therefore often faces large economic and social obstacles and incurs transition costs. . . . New risks, on the other hand, may be regulated with less direct disruption of settled expectations. Their regulation incurs a different type of costs—lost opportunity costs [that] are usually difficult to measure, and the bearers of these costs may be neither identifiable nor self-aware. . . . Regulatory statutes thus systematically treat new risks more stringently than old ones.⁵⁴

Thus, according to Huber, the common perception among legislators is that regulating new risks more stringently is the “cheaper” alternative to the regulation of old ones, in terms of transition, political, and social costs. Even though this might be true in certain contexts, the old-new division can sometimes promote “regulatory decisions that are technologically regressive [and] may aggravate hazards they are intended to avoid.”⁵⁵ Thus, while it is important to keep the social and political costs in the calculus of such legislation, the formula should be constantly reassessed in view of changing circumstances.

Looking specifically at the air pollution context, how can the legislative history of the Clean Air Act be reconciled with Huber’s general assessment

51. Such misconduct has become the subject of enforcement actions by the EPA in recent years. See Christopher W. Armstrong, *EPA’s New Source Review Enforcement Initiative*, 14 NAT. RESOURCES & ENV’T 203, 204 (2000); *infra* Section V.B.

52. See *NRDC Report*, *supra* note 3, § IV.

53. Huber, *supra* note 2, at 1028.

54. *Id.* at 1027-28.

55. *Id.* at 1028.

of the motivations underlying old-new divisions? The motivations behind the initial adoption of two-tiered regulation in the 1970 Clean Air Act amendments (i.e., imposition of federal new source performance standards) were essentially threefold.⁵⁶ First, legislators sought to avoid some of the transition costs associated with the expensive retrofitting of old sources that would be necessary if NSPS were applied to them. It was thought that the expenses associated with retrofitting would be at their minimum if imposed at the time of major modifications to an old source.⁵⁷

Second, legislators assumed that the natural turnover of power plants obviated the need for extensive old source regulation⁵⁸ because “[p]ower plants have typically been built to last thirty to forty years, and environmental policy has been developed with the assumption that thirty-year-old plants would soon be phased out of production.”⁵⁹ This has not occurred, however, due to the economic incentives for owners of older, coal-fired electricity generation firms to continue production,⁶⁰ incentives that are in part created by old-new distinctions in pollution-control technology requirements, which exempt old power plants from more stringent and costly regulation faced by their new source counterparts.

Finally, legislators were concerned with the property rights of the owners of existing sources and the potential takings claims associated with immediate application of new source performance standards. This can be

56. Again, the overtly “political” motivations behind the old-new division in the CAA are not the focus of this Note. Undoubtedly, grandfathering is also a tool by which legislators are able to enact forward-thinking legislation that would be politically impossible without some cooperation and support from the regulated entities. For a general discussion on public choice theory and interest groups, see *supra* note 10.

57. See Rachel Zaffrann, *New York’s Novel Strategy for Combating Air Pollution*, 11 FORDHAM ENVTL. L.J. 59, 66-67 (1999); see also *Wis. Elec. Power Co. v. Reilly*, 893 F.2d 901, 909 (7th Cir. 1990) (acknowledging that “Congress chose not to subject existing plants to the requirements of NSPS and PSD” because of the expenses associated with retrofitting compared to the lesser costs of incorporating control technology during “new or modified construction”).

58. See BRUCE BIEWALD ET AL., GRANDFATHERING AND ENVIRONMENTAL COMPARABILITY: AN ECONOMIC ANALYSIS OF AIR EMISSION REGULATIONS AND ELECTRICITY MARKET DISTORTIONS 2 (1998), at <http://www.synapse-energy.com/publications.htm>; see also Hsu, *supra* note 4, at 435 (discussing regulators’ assumption of the natural turnover of plants).

59. Hsu, *supra* note 4, at 435.

60. For a cost comparison of operating older, coal-fired plants versus newer, natural-gas-fired plants, see *id.* at 434-36. Hsu notes:

An examination of the economics of power plant operation reveals why the expected retirement of old coal-fired power plants has not occurred. While natural gas-fired plants are much cheaper to build and only slightly more expensive to operate and maintain, older coal-fired plants have no capital costs at all because they have been fully amortized. . . . While the per-kWh capital and operating costs of natural gas-fired plants have been as low as 3 cents/kWh, the operating cost of old coal-fired power plants is estimated to be, on average, a paltry 2.1 cents/kWh. This cost advantage has tilted the playing field in coal’s favor.

Id. at 435-36 (footnotes omitted). Also, for a discussion of the incentives for continued operation of old, coal-fired power plants created by subsidies for plants that achieve emissions reductions through use of scrubber technology, see generally BRUCE A. ACKERMAN & WILLIAM T. HASSLER, CLEAN COAL/DIRTY AIR (1981).

placed within Huber's "disruption of settled expectations" category.⁶¹ Or in the language of regulatory takings scholarship, the original adoption of a two-tiered regulatory framework was an attempt to balance considerations of fairness as well as efficiency.⁶²

Although these are generally accepted explanations for the old-new distinction in the 1970 Act, it is difficult to assess the degree of interplay among these three motivations in the grandfathering of old sources. Perhaps if the natural turnover of plants had not been assumed, fairness or expense considerations would have carried less weight in the legislative analysis. This is because the stakes of future air pollution would have seemed higher: An old plant would serve as a threat to the goals of the CAA not just for its natural life span of thirty or forty years, but decades longer. The takings rationale is the focus of this Note, however, and whatever the legitimacy of fairness or takings considerations in the formulation of the 1970 Act, their continued merit in the legislative analysis is another story altogether. To the degree that takings considerations bear any continued role in the justification of old-new divisions in the Clean Air Act, the regulation of preexisting nonconforming uses in the land-use context can serve as a useful conceptual guide.

III. FINDING ANALOGIES IN LAND USE: THE REGULATION OF PREEXISTING NONCONFORMING USES

A. *Early History of Zoning Law*

The purpose behind comprehensive Euclidean zoning was to ensure an orderly pattern of local development through the separation of conflicting land uses. Thus, each comprehensive zoning ordinance compartmentalized a community into districts and limited each district to a particular type of land use, usually residential or commercial.⁶³ The authority to enact zoning legislation was local and "derived from state enabling legislation or from home rule provisions of state constitutions."⁶⁴ Early in its history, proponents of zoning recognized the problem posed by nonconforming uses, land uses that lawfully existed before a particular zoning regulation was enacted:

61. See Huber, *supra* note 2, at 1027.

62. On the balancing of fairness and efficiency in regulatory takings analysis, see WILLIAM A. FISCHER, *REGULATORY TAKINGS: LAW, ECONOMICS, AND POLITICS* 217 (1995).

63. See Richard F. Babcock, What Should and Can Be Done with Nonconforming Uses, Lecture Before the Institute on Planning, Zoning and Eminent Domain at the Southwestern Legal Foundation (Oct. 21-22, 1972), in *PROCEEDINGS OF THE INSTITUTE ON PLANNING, ZONING, AND EMINENT DOMAIN* 23, 25 (Southwestern Legal Found. ed., 1972).

64. See 7 ROHAN, *supra* note 12, § 41.04(4), at 41-11.

[I]t was feared that the whole philosophical justification for zoning would be impaired if nonconforming uses, *i.e.*, preexisting uses that did not conform with these homogeneous zoning districts, were legitimized. If the goal of the regulations was to ensure uniformity of all uses in a particular district, dissimilar existing uses would detract from that purpose as much as new uses.⁶⁵

Despite early recognition of the problem posed by nonconforming uses, options for addressing the problem were limited due to the constitutional rights of nonconforming-use owners.

Beginning with the landmark *Pennsylvania Coal Co. v. Mahon* decision in 1922,⁶⁶ the Supreme Court has recognized that even in the absence of a physical occupation of property, a regulation that goes too far in restricting a landowner's use constitutes a compensable regulatory taking. Thus, the application of a zoning ordinance to terminate a lawful, existing use without compensation would constitute an unjust taking by the government if the ordinance substantially diminished the property's value.⁶⁷ Although some early zoning advocates argued that little theoretical difference existed between the power to terminate future uses and existing uses,⁶⁸ such arguments advocating the retroactive application of zoning ordinances carried little weight in judicial and political arenas.⁶⁹

B. Restrictions on Nonconforming Uses

The result of this theoretical and practical conundrum was a compromise of sorts, one not unlike that which evolved in the Clean Air

65. 7 *id.* § 41.01[2], at 41-6 to -7 (footnote omitted); *see also* Gordon Whitnall, Abatement of Nonconforming Uses, Lecture Before the Second Annual Institute on Planning and Zoning at the Southwestern Legal Foundation (Oct. 26-28, 1961), in PROCEEDINGS OF THE 1961 INSTITUTE ON PLANNING AND ZONING 131, 134 (Southwestern Legal Found. ed., 1961) (noting that "conformity . . . is sought as a means of preventing conflicts that would depreciate the desirability and value of property for certain uses because of the intrusion of noncompatible forms of use").

66. 260 U.S. 393 (1922). For a general discussion of landmark regulatory takings cases, *see* SELMI & KUSHNER, *supra* note 11.

67. *See, e.g.*, *Lewis v. City of Atlantic Beach*, 467 So. 2d 751, 754 (Fla. Dist. Ct. App. 1985) (upholding the constitutional rights of a nonconforming-use owner); *Redfean v. Creppel*, 455 So. 2d 1356 (La. 1984) (same); *Bachman v. Zoning Hearing Bd.*, 494 A.2d 1102 (Pa. 1985) (same).

68. *See, e.g.*, 7 ROHAN, *supra* note 12, § 41.02[2], at 41-6; *Babcock*, *supra* note 63, at 25 (stating that "[t]he landowner's expectation that he will be able to build a factory on his vacant land is not fundamentally different from his expectation that he can continue to operate his existing factory, and both expectations should be subject to the same constitutional standards").

The power to terminate future uses, or zoning, was itself the subject of constitutional objections, which were rejected by the Supreme Court in the landmark case *Village of Euclid v. Ambler Realty Co.* 272 U.S. 365 (1926) (upholding ordinances regulating future uses as a proper exercise of the state's police power). For a general discussion of this issue, *see* ROBERT C. ELLICKSON & VICKI L. BEEN, *LAND USE CONTROLS: CASES AND MATERIALS* (2000).

69. *See* 7 ROHAN, *supra* note 12, § 41.01[2], at 41-6; *see also* Comment, *Retroactive Zoning Ordinances*, 39 YALE L.J. 735, 737 (1930) (discussing the unpopularity of retroactive application of zoning ordinances).

Act and its subsequent amendments. While nonconforming uses would be allowed to continue due to the constitutional rights of their owners, regulators could impose statutory provisions designed to bring about the gradual termination of protected nonconforming-use status. Such restrictions included prohibitions on “[s]ubstantial physical changes which extend or prolong the life of nonconforming uses.”⁷⁰ As the Connecticut Supreme Court noted, capturing the prevailing judicial acceptance of such restrictions:

[T]he nonconforming use should, consistently with the property rights of the individuals affected and substantial justice, be reduced to conformity as quickly as possible. The general method of accomplishing this end is to prevent any increase in the nonconformity and eventually to lessen and do away with the nonconforming use.⁷¹

However, even in the land-use context, the definition of a “substantial” change to the nonconforming use has proven a contentious one. Many courts have found that “while nonconforming uses must be contained so as to be consonant with the spirit of a unified zoning plan, a change which is *de minimis* would not be detrimental.”⁷² While courts vary in their definitions of substantial changes, courts generally allow ordinary repairs, maintenance, and minor alterations.⁷³

70. See 7 ROHAN, *supra* note 12, § 41.01[5], at 41-23 (footnote omitted). Other provisions designed to terminate nonconforming uses included those that prohibited extensive rebuilding of nonconforming uses after fires or natural disasters, the resumption of nonconforming uses after discontinuance for a certain period of time, and changes to a different nonconforming use. 7 *id.* § 41.01[5], at 41-24 to -25.

71. *Beerwort v. Zoning Bd. of Appeals*, 137 A.2d 756, 758 (Conn. 1958); see also *Baird v. Bradley*, 240 P.2d 1016 (Cal. Dist. Ct. App. 1952) (upholding an ordinance that prohibited alterations to nonconforming buildings in excess of fifty percent of value unless they conformed to all of the requirements for new buildings); *Bird v. City of Colorado Springs*, 489 P.2d 324 (Colo. 1971) (holding that a zoning ordinance may restrict a landowner’s right to enlarge and/or extend a nonconforming use); *Selligman v. Von Allmen Bros., Inc.*, 179 S.W.2d 207 (Ky. Ct. App. 1944) (holding that replacing decayed wooden walls with brick walls on a nonconforming milk plant in a residential neighborhood constituted an unlawful alteration).

72. 7 ROHAN, *supra* note 12, § 41.03[2], at 41-67.

73. See, e.g., *Crawford v. Bldg. Inspector*, 248 N.E.2d 488 (Mass. 1969). A test for “substantiality” used by Maryland appellate courts is instructive on this point. In determining whether an expansion should render the loss of nonconforming-use status, four criteria are considered:

(1) to what extent does the current use of these lots reflect the nature and purpose of the original non-conforming use; (2) is the current use merely a different manner of utilizing the original non-conforming use or does it constitute a use different in character, nature, and kind; (3) does the current use have a substantially different effect upon the neighborhood; (4) is the current use a “drastic enlargement or extension” of the original non-conforming use.

McKenny v. Baltimore County, 385 A.2d 96, 104 (Md. Ct. Spec. App. 1978).

Moreover, courts often read “natural expansion” exemptions into these zoning restrictions. The doctrine of natural expansion in this context prevents municipalities from prohibiting a nonconforming use simply because of an increase in its volume of business due to a growth in demand.⁷⁴ Here again, however, a sort of purposive test has evolved, in which courts look to see if what is “couched as a natural expansion of a nonconforming use . . . actually entails a new or different use,” in which case it can be prohibited by a municipality.⁷⁵

The original assumption behind statutory limitations on nonconforming uses was that such restrictions would soon lead to the gradual disappearance of nonconforming uses.⁷⁶ That belief proved a misguided one in many cases, however. In spite of restrictions on alterations and modifications, “nonconforming uses have not only continued to exist but have prospered.”⁷⁷ Although the reasons for their continued vitality are not perfectly clear, some scholars have speculated that “[t]he favorable, sometimes monopolistic, position accorded them, together with municipal requirements that all buildings meet certain standards of fitness, militates against their elimination.”⁷⁸

C. *Comparing Evolutions of Doctrine: Zoning Law and the CAA*

The similarities in the evolution of land-use doctrine regulating nonconforming uses and of federal control technology standards on old sources under the Clean Air Act are striking in many respects. Their progression can be summarized as follows. First, a two-tiered regulatory

74. See, e.g., *In re Freid-el Corp.*, 383 A.2d 1286 (Pa. Commw. Ct. 1978) (affirming a lower court’s holding that an owner’s right to natural expansion of a nonconforming use is protected by the Due Process Clause). For further discussion on the natural expansion exemption, see ELLICKSON & BEEN, *supra* note 68, at 225.

75. 7 ROHAN, *supra* note 12, § 41.03[2], at 41-67.

76. See *Grant v. Mayor & City Council of Balt.*, 129 A.2d 363, 365 (Md. 1957) (noting that at the “inception of zoning,” nonconforming uses “were not regarded as serious handicaps to its effective operation; it was felt they would be few and likely to be eliminated by the passage of time and restrictions on their expansion” (emphasis added)).

77. See 7 ROHAN, *supra* note 12, § 41.04[1], at 41-147; see also *Grant*, 129 A.2d at 365 (describing the continued existence of nonconforming uses despite regulation restricting the expansion and alteration of such uses); *Hoffmann v. Kinealy*, 389 S.W.2d 745, 750 (Mo. 1965) (stating that “pre-existing lawful nonconforming uses have not faded out or eliminated themselves as quickly as had been anticipated”); *Babcock*, *supra* note 63, at 29-30 (describing the continued existence of nonconforming uses despite restrictions on expansion and alteration).

78. Note, *Amortization of Property Uses Not Conforming to Zoning Regulations*, 9 U. CHI. L. REV. 477, 479 (1942); see also *Grant*, 129 A.2d at 365 (“Nonconforming uses have not disappeared as hoped and anticipated because the general regulation of future uses and changes, with some existing uses uncontrolled, have put the latter in an entrenched position often with a value that is great—and grows—because of the artificial monopoly given it by the law.”); *Vill. of Valatie v. Smith*, 632 N.E.2d 1264, 1266 (N.Y. 1994) (“While it was initially assumed that nonconforming uses would disappear with time, just the opposite proved to be true in many instances, with the nonconforming uses thriving in the absence of any new lawful competition.”).

framework is adopted, subjecting new uses or sources to regulations that are different from those for old uses or sources, due in some measure to the interests of fairness. Second, restrictions are put upon the preexisting uses or sources prohibiting alterations or modifications with the purpose of gradually eliminating their protected status. And, in both cases, such restrictions are based on a faulty assumption that the nonconforming uses will naturally “die out.” Third, a fine-tuning of the regulatory and/or judicial interpretations of restrictive statutes occurs in order to bring more old uses or sources within the “new” regulatory framework. Moreover, even particular exemptions to the restrictions, initially adopted for practical or fairness reasons, such as the “demand growth” exemption to calculations of emissions increases under the CAA, are mirrored in the zoning context: e.g., the “natural growth exemption” in the elimination of nonconforming-use status.

Perhaps in one way these nearly identical evolutions are unsurprising. Federal technology control standards are, in one sense, a zoning ordinance that is national in scope, prescribing the lawfully permitted use of particular facilities throughout the United States. It makes sense, then, that the evolution of zoning regulations in the land-use context would inform its development. The two contexts differ in one important way, however. Zoning regulation has incorporated a technique that has proven useful in the elimination of certain nonconforming uses, particularly when they have acute implications for public health, safety, or even aesthetics: “amortization” provisions. This is one regulatory technique that has not been incorporated into federal air pollution regulation. The development of amortization provisions in the zoning context and an analysis of their potential usefulness in the air pollution context will be addressed in the following Part.

IV. AMORTIZATION AND THE TERMINATION OF NONCONFORMING USES

A. *Amortization Provisions: An Overview*

The failure of statutory limitations to bring about the gradual disappearance of nonconforming uses led many municipalities to experiment with a more drastic and effective technique: amortization. Amortization regulations provide nonconforming-use owners with a discrete period of time to continue the nonconforming use, during which the owner can amortize or recoup her investment. After the allotted time, however, the nonconforming use must either cease or come into compliance with the zoning regulation.

Amortization provisions are based on “the principle that the property owner should be given time to recoup his investment in land before being

forced to discontinue the use without compensation.”⁷⁹ In *State v. Joyner*, a decision upholding the constitutionality of amortization provisions, the Supreme Court of North Carolina made the following observation regarding the rationale behind the amortization technique:

Municipalities which seek to terminate nonconforming uses through amortization proceed on the assumption that the public welfare requires that such uses cease, but that summary termination is illegal, impractical, or unfair. They find a middle ground, between immediate cessation of use and the indefinite continuance thereof. . . . The term “amortization” is derived from the notion that the nonconforming user can amortize his investment during the period of permitted nonconformity. It is reasoned that *this opportunity to continue for a limited time cushions the economic shock of the restriction, dulls the edge of popular disapproval, and improves the prospects of judicial approval.*⁸⁰

Although amortization provisions have been controversial throughout their use, they have been fairly common since the 1950s and have been upheld by a majority of U.S. courts, both state and federal, provided that the adopted time periods are “reasonable.”⁸¹ The time period established by amortization regulations varies depending on the type of land or structure involved in the nonconforming use. The range is generally from “a few months or years (as in the case of billboards) up to fifty or sixty years (for very substantial structures).”⁸² Moreover, it is usually the complaining party that has the burden of proving that an amortization period is unreasonable.⁸³

79. 7 ROHAN, *supra* note 12, § 41.04[1], at 41-148.

80. *State v. Joyner*, 211 S.E.2d 320, 324 (N.C. 1975) (emphasis added, internal quotation marks and citation omitted).

81. See 7 ROHAN, *supra* note 12, § 41.04[1], at 41-152. A minority of courts, however, have refused to uphold amortizations on the grounds that such provisions are not authorized by the zoning enabling act of the state. See *State v. Bates*, 305 N.W.2d 426 (Iowa 1981) (holding that the enactment of a county zoning ordinance eliminating nonconforming uses was beyond the authorization of Iowa Code § 358A.3); ELLICKSON & BEEN, *supra* note 68, at 22-23 (“Dissenters from the majority view augment their constitutional and authority arguments with dire predictions that amortization of nonconforming uses will deter investment by putting any landowner’s reasonable expectations at risk and will result in deterioration as owners refuse to maintain their properties.”). For further discussion, see, for example, Craig A. Peterson & Claire McCarthy, *Amortization of Legal Land Use Nonconformities as Regulatory Takings: An Uncertain Future*, 35 WASH. U. J. URB. & CONTEMP. L. 37, 37 (1989) (explaining that “state courts have generally upheld amortization provisions since the 1950’s”).

82. 7 ROHAN, *supra* note 12, § 41.04[1], at 41-148; see also Richard P. Holme, *Billboards and On-Premise Signs: Regulation and Elimination Under the Fifth Amendment*, Lecture Before the Institute on Planning, Zoning and Eminent Domain at the Southwestern Legal Foundation (Nov. 7-9, 1973), in PROCEEDINGS OF THE INSTITUTE ON PLANNING, ZONING, AND EMINENT DOMAIN 247, 283-91 (Southwestern Legal Found. ed., 1974).

83. 7 ROHAN, *supra* note 12, § 41.04[1], at 41-152.

While there is no “fixed formula for determining what constitutes a reasonable period,”⁸⁴ courts generally make this determination in one of two ways. The “test most commonly employed by courts . . . is based upon a balancing of public good against private loss.”⁸⁵ For instance, a California appellate court in *City of Los Angeles v. Gage* upheld an amortization plan as reasonable, finding that “[a] legislative body may well conclude that the beneficial effect on the community of the eventual elimination of all nonconforming uses . . . more than offsets individual losses.”⁸⁶ Understandably, the ambiguities and judicial discretion inherent in such a balancing test have made it the object of scholarly attack.⁸⁷

Alternatively, courts make a determination of reasonableness based on the length of the amortization period relative to the owner’s investment.⁸⁸ This type of analysis, in which courts use the depreciation for income tax purposes in order to measure whether the owner will be able to recoup her original investment, was upheld by the Supreme Court of California in *Metromedia, Inc. v. City of San Diego*,⁸⁹ one of the pivotal cases regarding billboard amortization, which I will discuss further in the following Section. This type of judicial formula for “reasonableness” has also garnered criticism, however, due in part to the formula’s particular evolution. The “recoupment of investment” calculation in determining a reasonable amortization provision was not a natural outgrowth of the amortization concept. In the infant stages of the application of amortization provisions to land-use regulation, municipalities based the amortization period on a

84. *Vill. of Vatalie v. Smith*, 632 N.E.2d 1264, 1267 (N.Y. 1994).

85. *Bd. of Supervisors v. Miller*, 170 N.W.2d 358, 362 (Iowa 1969); *see also Vill. of Oak Park v. Gordon*, 205 N.E.2d 464, 466 (Ill. 1965) (invalidating a zoning ordinance establishing amortization provisions for nonconforming rooming, boarding, and lodging houses under the public interest/private loss balancing test); *McKinney v. Riley*, 197 A.2d 218, 222 (N.H. 1964) (upholding an amortization provision requiring termination of a nonconforming use of land for a junkyard upon balancing public interest against private loss).

A minority of courts have ruled, however, that amortization provisions are per se unconstitutional, even if they are “reasonable.” *See, e.g., Hoffmann v. Kinealy*, 389 S.W.2d 745 (Mo. 1965) (invalidating a six-year amortization period for the termination of a nonconforming use as an unjustified exercise of the police power).

86. 274 P.2d 34, 44 (Cal. Dist. Ct. App. 1954).

87. *See Michael M. Berger, Amortization as “Just Compensation”: If It Works for Billboards, Can Office Buildings Be Far Behind?*, Lecture Before the Institute on Planning, Zoning and Eminent Domain at the Southwestern Legal Foundation (Nov. 20-22, 1991), in *PROCEEDINGS OF THE INSTITUTE ON PLANNING, ZONING AND EMINENT DOMAIN 7-1, 7-7* (Carol J. Holgren ed., 1992).

88. *See, e.g., Art Neon Co. v. City of Denver*, 488 F.2d 118, 123 (10th Cir. 1973) (suggesting that an owner’s investment should be used as a factor to determine reasonableness of an amortization period); *City of University Park v. Benners*, 485 S.W.2d 773, 779 (Tex. 1972) (same).

89. 610 P.2d 407 (Cal. 1980), *rev’d*, 453 U.S. 490 (1981); *see also Christine Venezia, Comment, Looking Back: The Full-Time Baseline in Regulatory Takings Analysis*, 24 B.C. ENVTL. AFF. L. REV. 199 (1996) (discussing the use of the recoupment of investment analysis).

determination of the actual useful life remaining for a given land use.⁹⁰ Because the term “amortization” was borrowed from a technique in tax accounting, in which businesses were allowed to compensate for the loss in usefulness of their property by deducting that loss from their taxes, basing the amortization period on actual useful life seemed a natural and proper extension of the concept into the land-use arena.⁹¹ Thus, several older amortization cases required that a reasonable amortization provision bear a relationship to the actual useful life of the nonconforming use.⁹²

Over time, however, the requirement of an amortization period’s link to an actual useful life calculation became increasingly rare in judicial analysis. Viewing the conceptual replacement of “actual useful life” with “recoupment of investment” in light of the Supreme Court’s pivotal regulatory takings decision in *Penn Central Transportation Co. v. New York City*,⁹³ one begins to see the merits of scholarly takings criticism on this score.⁹⁴ In *Penn Central*, the Court declared that the determination of whether a regulation amounts to a taking depends, among other things, on the property owner’s “distinct investment-backed expectations.”⁹⁵ It is indeed questionable that a recoupment of the original investment in and of itself satisfies a property owner’s distinct investment-backed expectation. Even a reasonable investment-backed expectation would likely include an expectation of profits above and beyond the original investment itself, for it is unlikely that one would embark on such an investment solely with the intent or expectation of recouping that investment. And yet, a determination of an amortization period’s reasonableness based on a recoupment of investment rests on the plausibility of such an assumption. Then again, it is entirely plausible that the investment-backed expectation of an investor would also include the possible risk of losing one’s investment. Thus, perhaps the “recoupment of investment” test of reasonableness is more closely aligned with the ex ante expectations of an investor than critics suggest.

90. See Joseph A. Katarincic, *Elimination of Non-Conforming Uses, Buildings and Structures by Amortization—Concept Versus Law*, 2 DUQ. L. REV. 1 (1963); Samuel B. Hickman, Note, *Harbison v. City of Buffalo*, 44 CORNELL L.Q. 450, 453 (1959).

91. See Berger, *supra* note 87, at 7-7.

92. See, e.g., *City of La Mesa v. Tweed & Gambrell Planing Mill*, 304 P.2d 803, 808 (Cal. Dist. Ct. App. 1956) (finding that a five-year amortization period for a building with a useful life of twenty-one years is not reasonable).

93. 438 U.S. 104 (1978).

94. For a rather scathing criticism of this conceptual replacement, see Berger, *supra* note 87, at 7-18 to -22.

95. 438 U.S. at 127.

B. *Billboard Regulation and the "Amortization Compensation Equation"*

Finally, a subtler, but nonetheless noteworthy, line of analysis that recurs in several judicial rulings on the "reasonableness" of amortization provisions is what I will term the amortization-compensation equation. Although not a clearly recognized judicial test for reasonableness in the manner of "balancing public good against private loss" or "recoupment of investment," the amortization-compensation equation is nevertheless a line of analysis that has often played an important role in the validation of amortization provisions. This approach suggests that the monopolistic position afforded to owners of nonconforming uses⁹⁶ during the amortization period *itself* may amount to a type of compensation for future loss, sufficient to survive takings challenges. For instance, the *Gage* court made the following observation:

Use of a reasonable amortization scheme provides an equitable means of reconciliation of the conflicting interests in satisfaction of due process requirements. . . . The loss [the owner] suffers, if any, is spread out over a period of years, and *he enjoys a monopolistic position by virtue of the zoning ordinance as long as he remains.*⁹⁷

Although such a line of analysis lends additional support to the general constitutionality of the amortization technique, the use and development of the amortization-compensation equation has seen both its apex and decline in the context of billboard regulation. Since the introduction of the Highway Beautification Act of 1965,⁹⁸ which pushed states to develop programs restricting new billboard construction and to remove existing, nonconforming billboards within "federal corridors,"⁹⁹ local and state programs limiting billboards have been "one of America's most litigated forms of land-use regulation."¹⁰⁰ The Act provides that "[j]ust compensation shall be paid upon the removal of any outdoor advertising sign, display, or device lawfully erected,"¹⁰¹ where removal came as a result

96. Such a "monopolistic" position generally occurs in the context of a change from a commercial use district to a residential district, when the nonconforming use is allowed to continue.

97. *City of Los Angeles v. Gage*, 274 P.2d 34, 44 (Cal. Dist. Ct. App. 1954) (emphasis added).

98. Pub. L. No. 89-285, § 101, 79 Stat. 1028, 1028 (codified as amended at 23 U.S.C. § 131 (2000)). The impetus for billboard control emerged in the 1960s as a response to the "proliferation of billboards in suburban and rural America." ROBERT MELTZ ET AL., *THE TAKINGS ISSUE: CONSTITUTIONAL LIMITS ON LAND-USE CONTROL AND ENVIRONMENTAL REGULATION* 426 (1999).

99. Federal corridors are designated areas "within 660 feet of interstate and federally funded primary highways." MELTZ ET AL., *supra* note 98, at 426.

100. *Id.* at 427.

101. 23 U.S.C. § 131(g).

of the Act. The determination of just compensation, however, was left largely to states until 1978, at which point Congress amended the statute.

Between 1965 and 1978, amortization provisions were commonly used by states in the regulation of billboards.¹⁰² Significantly, in this period, it was the very inclusion of amortization provisions combined with a greater judicial acceptance of the amortization-compensation equation that saved much billboard regulation from unjust takings rulings. As one commentator notes:

From a legal perspective, the existence of an amortization component allows government defenders of billboards programs to argue that such programs don't cause an economic "wipeout" that would trigger the *Lucas*, virtual per se rule of takings liability; instead, the program can be characterized as one that *limits* economic return and therefore falls under *Penn Central's* ad hoc, balancing approach.¹⁰³

The relationship between the inclusion of amortization provisions and the upholding of billboard regulation is documented in numerous cases.¹⁰⁴ The overriding theme in such cases is the equating of amortization with just compensation. Namely, the monopolistic existence of a nonconforming use within a grace period was *itself* regarded as tantamount to compensation.

In 1978, a pivotal amendment was added to the Highway Beautification Act "requiring compensation" for removal of billboards within 660 feet of interstate or primary highways *regardless* of the existence of an amortization period.¹⁰⁵ This amendment has been widely acknowledged as a concession to the well-mobilized, politically potent billboard lobby.¹⁰⁶ The passage of this amendment has frustrated the attempts of states and municipalities to carry out effective billboard regulation.¹⁰⁷ Moreover, as

102. Most state and local programs that impose limitations on billboards have replicated the amortization provisions in the Highway Beautification Act. See MELTZ ET AL., *supra* note 98, at 433.

103. *Id.*

104. See, e.g., *Naegle Outdoor Adver., Inc. v. City of Durham*, 844 F.2d 172, 177 (4th Cir. 1988) ("The allowance of an amortization period . . . is one of the facts that the district court should consider in defining the character of governmental action, which is the third factor mentioned in *Penn Central*."); *Tahoe Reg'l Planning Agency v. King*, 285 Cal. Rptr. 335, 351 (Ct. App. 1991) ("[A]n ordinance prohibiting existing billboards may be enforced as a constitutionally valid exercise of the state's police power which does not require compensation if a reasonable amortization period for discontinuance of use is provided."); *Newman Signs, Inc. v. Hjelle*, 268 N.W.2d 741, 757-58 (N.D. 1978) ("The North Dakota Act also provides within its statutory scheme an amortization period during which a sign owner is allowed to maintain his sign without its being subject to removal. This type of provision is common in many States and has been upheld against constitutional attack.")

105. See Charles F. Floyd, *The Takings Issue in Billboard Control*, 3 WASH. U. J.L. & POL'Y 357, 375 (2000).

106. *See id.*

107. *See id.* at 375-78.

discussed below, it has also led to increased, and oftentimes grudgingly administered, judicial scrutiny of the amortization technique in the elimination of nonconforming uses.

The opinion of the California Supreme Court in *Metromedia, Inc. v. City of San Diego*¹⁰⁸ provides a fascinating illustration of judicial willingness to validate the “amortization as compensation” rationale absent legislative interference in the billboard context. In this case, the court upheld a San Diego ordinance requiring abatement of all off-site billboards (within 500 feet of freeways or scenic highways) following a 90-day amortization period. The court broke with earlier findings that amortization provisions of less than a year for billboards were “generally unreasonable,”¹⁰⁹ and reasoned that the city’s justification for the amortization periods was “not facially unreasonable.”¹¹⁰

This provision [of 90 days] is based on the fact that such signs were rendered nonconforming uses by prior city zoning ordinances. Since those prior zoning ordinances had been in force for about 3 years before the effective date of Ordinance No. 10795, the signs in question received an actual amortization period of at least 3 years and 90 days.¹¹¹

Thus, in this ruling, the court not only accepted the amortization-compensation equation in its reasoning but also suggested a potentially stronger interpretation of it: So long as the regulated entity is aware of its nonconforming-use status, its existence during that period, even before amortization provisions are introduced, could be considered as part of the compensation “package” for takings analysis.

The opinion of the California Supreme Court in *Metromedia*, however, stands not only for the highpoint of judicial acceptance of the amortization-compensation equation but also for the formula’s legislatively mandated decline in the billboard context.¹¹² While liberal in its interpretation of provisions regarding the removal of billboards untouched by the Act, the California Supreme Court paradoxically concluded that the “Highway

108. 610 P.2d 407 (Cal. 1980), *rev’d*, 453 U.S. 490 (1981). The San Diego ordinance was found unconstitutional on its face by the Supreme Court as an abridgement of protected, noncommercial speech. *Metromedia, Inc.*, 453 U.S. 490. Potential “takings” issues regarding the reasonableness of amortization provisions were not considered by the Supreme Court in this case, however.

109. *Metromedia, Inc.*, 610 P.2d at 427 (citing various previous cases).

110. *Id.* at 428. The court notes, however, that its “conclusion that the amortization schedule established in the San Diego ordinance is not facially unreasonable does not demonstrate its validity as applied to each of plaintiffs’ signs. The reasonableness of an amortization period as applied to each billboard depends in part upon facts peculiar to that structure.” *Id.* (citations omitted).

111. *Id.* at 427.

112. See Floyd, *supra* note 105, at 375-78.

Beautification Act as amended requires the payment of compensation for removal of all billboards existing . . . on November 6, 1978, *located within 660 feet of federal interstate or primary highways.*"¹¹³ The court, however, pointedly noted, "We reach that conclusion reluctantly, since its effect in this case and in future cases will probably frustrate the original intent of the Highway Beautification Act."¹¹⁴ Thus, *Metromedia* provides two important insights. First, it demonstrates the potential willingness of courts to adopt the amortization-as-compensation rationale, particularly when the contested use has existed, and its owner has been aware of its nonconforming-use status, for a significant period of time prior to the amortization period. Secondly, this case suggests that any decline in the validity of amortization without compensation in the billboard context has been a result of legislative fiat and is often read narrowly and applied grudgingly by state courts.¹¹⁵

Lest the proponents of amortization begin celebrating too early, however, the example posed by billboard regulation is sobering in that it also demonstrates the inability of the amortization-compensation equation to withstand the fruits of successful lobbying efforts: legislation expressly mandating compensation. Thus, while this Note has focused on the potential usefulness of borrowing land-use concepts in the regulation of air pollution, it must also be acknowledged that air pollution regulation is subject to similar political constraints as its land-use counterpart—intense, and oftentimes successful, opposition by regulated entities. The purpose of this Note, however, is not to explore the politics of air pollution regulation so much as to analogize its evolution to that of land-use doctrine in order to shine a skeptical light on one problematic justification for continued grandfathering: takings.

V. AMORTIZATION AS A POTENTIAL SOLUTION TO THE PROBLEM POSED BY OLD UTILITIES: CALLING FOR A LEGISLATIVE RESUSCITATION OF THE AMORTIZATION COMPENSATION EQUATION

Coal-burning utilities built prior to the original CAA remain a potent threat to the nation's air pollution goals. The framers of the Act, who predicted the gradual disappearance of old stationary sources, have been proven wrong, and, perversely, it has been the continuation of a two-tiered

113. *Metromedia, Inc.*, 610 P.2d at 425 (emphasis added).

114. *Id.*

115. See Frank Easterbrook, *The Supreme Court, 1983 Term—Foreword: The Court and the Economic System*, 98 HARV. L. REV. 4, 14-15 (1984) (discussing why judges should construe "rent-seeking" statutes in as narrow a manner as possible). Easterbrook states that "a judge . . . implements the bargain as a faithful agent but without enthusiasm; asked to extend the scope of a back-room deal, he refuses unless the proof of the deal's scope is compelling." *Id.*

system of control technology requirements first established in the original CAA that has allowed these factories to avoid a "natural death." It is thus imperative to reassess the motivations behind continued grandfathering of old sources, and to look toward solutions that have proven useful in eliminating and/or bringing nonconforming entities into compliance in conceptually similar areas of regulation.

In the following Section, I suggest the use of amortization provisions as a potential solution to the continued emissions problem posed by coal-burning electric utilities built prior to the Clean Air Act of 1970. I propose a legislative incorporation of amortization provisions into the CAA, mandating the imposition of best available control technology by a fixed date, which would replace NSR and PSD in the treatment of control technology requirements for grandfathered electric utilities, as a viable strategy. Moreover, I will suggest that it is a solution preferable to proposed alternatives and one that carries a new urgency given recent interpretive changes announced by the Bush EPA, which threaten to further cement the "old-new" divide in air pollution regulation. Finally, I suggest a way of understanding this plan in light of the ongoing debate between proponents of command-and-control regimes and more "finely tuned" regulatory strategies.

A. Replacing NSR and PSD with a Uniform System of Amortization Provisions for Old Electric Utilities

In light of the failure of the New Source Review and Prevention of Significant Deterioration programs to bring many old sources within the ambit of stricter control technology requirements, the following plan poses a potential solution. While the NSR and PSD programs should continue to deal with the permitting of new sources in attainment and nonattainment areas, insofar as the "major modification" language has been unsuccessful in narrowing the old-new source divide, it should be replaced with a uniform system of amortization provisions for old, coal-burning utilities to comply with BACT¹¹⁶ requirements by a set date or face shutdown for noncompliance. Although this Note attempts to suggest the potential of the amortization technique at a general level rather than to offer specific details on the mechanics of such a program, a few points are worth mentioning. They concern the feasibility and effectiveness of applying this land-use technique to coal-burning utilities constructed before passage of the 1970 CAA.

116. Although new sources in nonattainment areas are required to meet LAER, an even more stringent requirement than BACT, this is perhaps an area where there needs to be a bit of flexibility toward old sources, at least for an interim period, depending on political considerations and the costs of implementation.

In the case of electric utilities, because they exist in a finite and identifiable number, setting amortization provisions for such facilities, either individually or en masse, according to their size, generating capacity, and year in which they were built, would be administratively feasible.¹¹⁷ Moreover, such a program would eliminate certain problems that frequently occur under the NSR and PSD programs. Such problems include the nonreporting or misreporting of “major modifications” and the invocation of the “demand-growth” exclusion by old sources to escape stricter control technology requirements.¹¹⁸

Also, a great deal of potential exists for shared state responsibility in the administration of such an amortization program.¹¹⁹ While guidelines for “reasonable” amortization provisions for old, coal-burning facilities, perhaps varying on the basis of size, generating capacity, and year of construction, could be set by the EPA, state agencies could share responsibility for administering and enforcing such guidelines as well as for addressing the special circumstances of individual plants, for example, by hearing petitions for variances. However, it is important to address one particular consideration, without which even the idea of an amortization program for old electric utilities would become impotent as a practical matter: choosing effective chronological baselines.

At the theoretical and constitutional level, applying the idea of amortization to control technology requirements for old electric utilities seems like a valid proposition. As a practical matter, however, it is important to note that amortization for big structures has become all but nonexistent in the zoning context. Municipalities commonly limit the application of the amortization technique to a nonconforming use where there has been little substantial investment in the regulated entity. The reason for this limitation is rooted more in practical constraints than in theoretical or constitutional ones. During the 1950s, several major cities in the United States adopted amortization provisions for a wide range of

117. Extensive information is already available on the number and location of electric utility plants in the United States, as well as their construction dates, size, generating capacity, and contribution to total pollution in a given region. For example, the Southern Environmental Law Center “reported that in the eight states in the Southeast United States there are about 375 power plants, but the twelve worst polluters who generate 17% of the region’s electric power contribute 31% of the region’s SO₂ emissions and 44% of the region’s NO_x.” Reitze, *supra* note 3, at 385. Moreover, while this Note focuses on the problem posed by electric utilities, there is no reason why a program of amortization could not be useful in dealing with other problematic stationary sources as well, such as those in the wood products sector.

118. See *supra* Section II.C.

119. This is particularly important because some states already have stricter pollution-control requirements in place for grandfathered plants than are currently mandated by federal regulations. For example, Texas requires grandfathered plants to reduce NO_x emissions by fifty percent and SO₂ emissions by twenty-five percent. The issue of state/federal coordination thus becomes even more important. TEX. UTIL. CODE ANN. § 39.264 (Vernon Supp. 2002); see also Karen Masterson & Dina Cappiello, *Industry Pollution Eased by Bush*, HOUSTON CHRON., Nov. 23, 2002, at A1.

industrial and commercial structures. Because of the sizeable investments involved, however, the adopted amortization periods based on a “reasonable investment-backed expectations” theory were incredibly long, ranging in some cases from forty to sixty years.¹²⁰ This led several municipalities to abandon the idea of amortization provisions for major structures altogether.

This is where the idea of the amortization-compensation equation suggested in *Metromedia* becomes a particularly useful and necessary device. To satisfy the “investment-backed expectations” guideline in setting a “reasonable” amortization period, it becomes necessary to choose a chronological baseline.¹²¹ Namely, in fixing a reasonable amortization period, does the administrator choose a “full-time” baseline, which looks back to the original time of purchase of the entity to determine the potential impact of a regulation on the owner’s investment-backed expectations, or an “aftermath-time” baseline, which starts the clock, so to speak, at the time the regulation takes effect? The question boils down to the following: Does one look at the owner’s expectations on the day she bought the property or on the day the regulation that renders it a “nonconforming” use is passed? Clearly, the aftermath-time baseline puts the owner in a much more favorable position because her investment-backed expectations on the day the regulation is enacted would necessitate a thirty- or forty-year amortization period from that day.¹²² If an amortization period is decided upon with a full-time baseline in mind, however, then it seems entirely

120. Margaret Collins, *Methods of Determining Amortization Periods of Non-Conforming Uses*, 3 WASH. U. J.L. & POL’Y 215, 230 (2000).

121. See Venezia, *supra* note 89, at 200.

122. *Id.* Venezia presents the following useful scenario as an illustration of how the choice of baseline can affect a consideration of a regulation’s impact on the owner’s investment-backed expectations:

Jim, a developer, buys for \$100,000 fifty acres near a lake for the purpose of building summer homes on the land. Jim develops thirty-five acres, building seventy summer homes at a cost of \$3.6 million. He then sells the homes for \$7 million, giving him an overall profit of \$3.4 million. A regulation, zoning the land as protected wetlands, then prevents Jim from developing the remaining fifteen acres. Although he could have developed the remaining land at a profit of approximately \$1.5 million, Jim’s fifteen acres are now valued at a little over \$10,000, with no potential for greater profit.

In such a case, if a court were to choose to measure the effect of the regulation against the investor’s expectations on the day before the regulation took effect, the court probably would find that the regulation had “wiped out” Jim’s investment. If, on the other hand, the court shifts its focus to a full-time baseline and begins its inquiry when Jim made his investment, the result is much different. Jim made \$3.4 million in profit on a \$100,000 investment. . . . Although he did not realize all of his potential profit, Jim was able to make . . . a reasonable return on his investment. By providing a more complete picture of the owner’s investment history in the property, the full-time baseline reveals that the owner largely achieved his investment-backed expectation, thereby undercutting arguments about unconstitutional takings . . .

Id. at 200-01.

plausible that an owner of an electric utility built prior to the 1970 CAA has more likely than not recouped her original investment. Thus, using a full-time baseline, a "reasonable" amortization period could be relatively short, and facilities could be brought into compliance in a practical, effective, yet nonetheless fair time frame.

Moreover, in the context of old, coal-burning utilities, the view of amortization as *Metromedia*-style compensation has increased validity. It has been the very promulgation of bifurcated control technology requirements that has extended the natural lives of these old plants, conferring upon them a false competitive advantage and creating within the owner expectations of the original investment that might not have been there originally, at the time a pre-1970 plant was built.¹²³ This is all the more reason to adopt amortization periods that incorporate the notion that these plants became "nonconforming" in the truest (though not technical) sense of the word in 1970, the year the old-new divide was set in place. Seen in such a light, amortization of these major structures seems practicable. The existence of lenient control technology requirements over the past thirty years would itself be regarded as a form of compensation, allowing for the promulgation of amortization periods of a brief enough length to satisfy the nation's air pollution goals in a timely manner. In this way, one can conceive of these sources being brought into compliance within a few years of a new "amortization" regulation being passed rather than within a few decades.

B. *Benefits of Amortization over Current Approaches:
Administrative Rulemaking Efforts and Ad Hoc Inclusion
Under the "Major Modification" Umbrella*

An amendment mandating the amortization of "nonconforming" electric utilities, which would result in the un-grandfathering of old sources in the electric utility sector, is also preferable to the administrative rulemaking and enforcement efforts that have arisen in the past decade and that have generated much political controversy. In the absence of effective legislation designed to bring more old sources within the purview of stricter control technology requirements, there have been various efforts in recent years to achieve similar results via administrative rulemaking and federal and state enforcement initiatives. Upon pressure from industry and environmental advocacy groups, the EPA under President Clinton established the Clean Air Act Advisory Subcommittee on NSR Reform in

123. For a detailed explanation, see *supra* note 60 and accompanying text.

1996 and proposed various changes to the NSR program.¹²⁴ The proposed reforms, however, were never finalized, and subsequent efforts to reform the NSR program under the Clinton Administration were unsuccessful.¹²⁵

By 1998, an EPA clearly determined to narrow the old-new divide sought to achieve its goals for NSR program revision through alternate means.¹²⁶ By reinterpreting the regulatory definition of a “major modification” to old stationary sources,¹²⁷ the Clinton Administration EPA began a series of NSR enforcement initiatives against the electric utility industry, with the goals of extracting civil penalties and, even more significantly, to impose stricter emissions-control requirements.¹²⁸ New interpretations of the term “major modification” broke with the agency’s former interpretations of NSR rules in a variety of ways.

First, the new interpretations essentially eliminated the demand growth exclusion, which had previously allowed electric utilities to “disregard coincidental emission increases resulting from other factors such as growth in electricity demand” in assessing whether a physical or operational change to a plant resulted in a “significant net emissions increase” sufficient to trigger NSR rules.¹²⁹ Whereas prior interpretations included a causation component, in which NSR rules could be avoided by showing that the cause of the emissions increase was natural growth rather than the physical or operation change itself, the new interpretations eliminated the causation component. Instead, the EPA adopted the assumption that any emissions increase following such a change “can ultimately be tied to and must be due to that particular physical or operational change.”¹³⁰

Moreover, the new interpretations attempted to restrict the routine maintenance exemption to cover only those activities “not unusual in the life of a given unit,”¹³¹ a reading much narrower than the EPA’s previous case-by-case evaluations, which took into consideration whether the

124. See Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR), 61 Fed. Reg. 38,249 (proposed July 23, 1996).

125. See, e.g., Armstrong, *supra* note 51, at 203.

126. *Id.*

127. For a discussion of the term “major modification,” see *supra* notes 35-45 and accompanying text. Under NSR, facilities may not make “major modifications” without first obtaining the appropriate NSR permits and installing the requisite emissions-control technology—i.e., BACT if located in an attainment area and LAER if located in a nonattainment area. See *supra* Section II.B.

128. See Armstrong, *supra* note 51, at 203; see also Elliot Elder & Robin L. Juni, *Has EPA Fired Up Utilities To Clear the Air?*, 15 NAT. RESOURCES & ENV'T 8, 9 (2000) (discussing NSR enforcement initiatives). EPA enforcement initiatives were also directed against the wood products and petroleum refining industries.

129. Armstrong, *supra* note 51, at 204.

130. *Id.*

131. *In re Tenn. Valley Auth.*, No. CAA-2000-04-008, 2000 WL 1358648, at *27 (Env't Prot. Agency, Sept. 15, 2000).

activity was routinely undertaken at facilities *throughout the industry*.¹³² Armed with these new interpretations, the EPA filed lawsuits against eight major utilities in November 1999 for failure to comply with NSR permitting requirements.¹³³ The EPA under the Bush Administration promised to continue these initial lawsuits, but recently announced its intention to abandon the reinterpretation of “major modification” adopted by the previous Administration.¹³⁴

The enforcement initiative approach has been lauded by some, particularly political leaders of Northeastern states that have long borne the brunt of “traveling” air pollution from other states.¹³⁵ It has also generated harsh criticism, however, from those who believe the enforcement actions to be an unjustifiable effort by the EPA to circumvent the traditional administrative rulemaking process under the guise of “reinterpreting” existing rules.¹³⁶ The traditional rulemaking process under the APA requires “(1) publication of the proposed rule in the Federal Register; (2) agency receipt of comments from interested persons; and (3) publication of the final rule along with a statement of basis and purpose for the rule.”¹³⁷ Clearly, none of these requirements is met in the enforcement measures, and absent the notice-and-comment rulemaking process, challenges to the Clinton EPA’s reinterpretation of NSR rules can only be brought through

132. See Kevin A. Gaynor & Benjamin S. Lippard, *Environmental Enforcement: Industry Should Not Be Complacent*, 32 ENVTL. L. REP. 10,488, 10,491 (2002).

133. Gaynor and Lippard go on to say:

Seven companies were initially sued in various federal courts, while the Tennessee Valley Authority (TVA) was sued administratively. To date, one utility has settled its lawsuit with EPA (Tampa Electric Company). Other utilities (Cincergy and Virginia Power, which was not sued in the initial round of 1999 lawsuits) have reached “agreements in principle” with EPA, which, despite the passage of many months, still have not resulted in final consent decrees. However, on January 23, 2002, EPA announced it lodged a consent decree with a New Jersey utility (PSEG) covering alleged NSR violations.

The TVA administrative hearing is concluded, and the EPA Environmental Appeals Board (EAB) rendered a decision supporting EPA’s position in the enforcement initiative; the TVA is appealing the EAB’s decision before the U.S. Court of Appeals for the Eleventh Circuit. . . .

Finally, six utilities are still actively and aggressively challenging EPA’s claims (these utilities are American Electric Power, FirstEnergy, Duke Power, Illinois Power, Southern Company, and the Southern Indiana Gas & Electric Company (SIGECO)).

See *id.* at 10,489-90 (footnotes omitted). For more information about the complaints themselves, EPA press releases regarding the complaints, and statements of then-EPA Administrator Browner, see Env’tl. Prot. Agency, Environ\$en\$e, at <http://es.epa.gov/compliance/civil/programs/caa/coal/> (last visited Mar. 10, 2003).

134. Matthew L. Wald, *E.P.A. Says It Will Change Rules Governing Industrial Pollution*, N.Y. TIMES, Nov. 23, 2002, at A1 (“The announcement of the rules triggered a storm of criticism from environmentalists, Democrats, and some Republicans.”).

135. See Zaffrann, *supra* note 57, at 59; see also Editorial, *Rollback on Clean Air*, N.Y. TIMES, Jan. 9, 2002, at A22.

136. See Elder & Juni, *supra* note 128, at 10-11.

137. Armstrong, *supra* note 51, at 205; see also 5 U.S.C. § 553(b)-(d) (2000) (listing the requirements of the administrative rulemaking process).

litigation. Moreover, this retroactive enforcement approach has earned criticism for violating various rule-of-law considerations embodied in the APA, particularly the doctrine of fair notice.¹³⁸

In a radical break with the policy of the previous Administration, the Bush Administration EPA recently proposed new rules that would allow grandfathered electric power plants and refineries to “change operations under a broader definition of routine maintenance.”¹³⁹ The current EPA claims that this change of policy is motivated not only by “rule of law” concerns, but by a belief that the existing NSR program discourages old plants from modernizing their facilities for fear of coming under the “major modification” umbrella and its accompanying federal scrutiny.¹⁴⁰ If these are the true motivations behind the Bush Administration’s environmental “reform” plan, rather than pure, unabashed rent-seeking behavior,¹⁴¹ then such a gigantic step backward from the Clinton-era enforcement actions only seems justified if it is replaced by a genuine and deliberative legislative effort to achieve an un-grandfathering of old, coal-burning sources in a way that is fair to regulated parties, effective, and consistent with the original intentions behind the regulation of stationary sources under the Clean Air Act. A legislative restructuring of the NSR/PSD framework, which would incorporate amortization provisions for old electric utilities to become conforming—i.e., to meet the control technology standards of their new source counterparts—by a date reflective of the advantageous status held by these plants for the past thirty years, poses just such a solution.

138. See, e.g., Jason Nichols, Note, “*Sorry! What the Regulation Really Means Is . . .*”: *Administrative Agencies’ Ability To Alter an Existing Regulatory Landscape Through Reinterpretation of Rules*, 80 TEX. L. REV. 951 (2002). The author notes that while administrative interpretive rules are not necessarily subject to the fair notice doctrine, as opposed to legislative rules by agencies that do require notice under § 553 of the APA, a “complete interpretive turnaround . . . following decades of industry reliance” may certainly trigger a higher fair notice standard. *Id.* at 976.

139. See Masterson & Cappiello, *supra* note 119.

140. See, e.g., Wald, *supra* note 134.

141. These actions have already generated immense criticism on a variety of fronts. A particularly damning aspect of the new rules is their intended implementation absent any replacement plan. The recently proposed “Clear Skies” initiative, which focuses on the use of market strategies like tradable emissions credits to achieve reductions of sulfur dioxide, nitrogen oxide, and mercury emissions from power plants, would not fully be in effect for another fifteen years at least, and even then, its likely impact on grandfathered plants is uncertain. See Sierra Club, *Clean Air: Facts About the Bush Administration’s Plan To Weaken the Clean Air Act*, at http://www.sierraclub.org/cleanair/clear_skies.asp (last visited Apr. 9, 2003) (describing the details and deficiencies of the “Clear Skies” proposal). Even the most generous observer would be hard-pressed to view this as a “clean hands” rules change.

C. *Amortization as a First-Line Strategy: Anticipating the Command-and-Control Critics*

This Note has thus far relied on one giant assumption: the continued legitimacy of technology-based standards as a regulatory approach toward air pollution. The problem presented in this Note has been that of incorporating more old sources within a stricter control technology regime. But this begs the overarching question of whether air pollution regulation should continue down this path, or, as its critics suggest, shift toward alternate approaches, such as cost-benefit-based standards or market approaches. This Section will provide a brief overview of the arguments of both the proponents and critics of technology-based standards as well as a description of how the amortization plan advocated in this Note should be understood within the context of the larger debate regarding “command-and-control” approaches to regulation.

The most common criticisms of technology-based standards, notably argued by Professors Ackerman, Stewart, and Sunstein,¹⁴² can be summarized as follows. First, technology-based controls are not cost-effective, for their insistence on national uniformity fails to take account of the “variations among plants and industries in the cost of reducing pollution,” as well as “geographic variations in pollution effects.”¹⁴³ Moreover, technology-based standards create disincentives for the “development of new, environmentally superior strategies”¹⁴⁴ by firms and incentives for regulated entities to invest in litigation in order to avoid or delay regulatory compliance.¹⁴⁵ Also, because technology-based standards often impose disproportionate standards on new entities, they discourage new investment.¹⁴⁶ Furthermore, a technology-based regime discourages “intelligent priority setting”¹⁴⁷ by the EPA because the cost of recognizing a new threat to the environment is prohibitive; this, Ackerman and Stewart argue, leads to “administrative inertia.”¹⁴⁸ In addition, Sunstein argues that

142. See, e.g., Bruce A. Ackerman & Richard B. Stewart, *Reforming Environmental Law*, 37 STAN. L. REV. 1333, 1334-40 (1985); Cass R. Sunstein, *Administrative Substance*, 1991 DUKE L.J. 607, 627-31.

143. Ackerman & Stewart, *supra* note 142, at 1335; see also Sunstein, *supra* note 142, at 628 (describing the economic inefficiency of technology-based regulation).

144. Ackerman & Stewart, *supra* note 142, at 1336.

145. *Id.* at 1337.

146. *Id.* at 1336; see also Sunstein, *supra* note 142, at 628 (describing the investment disincentives caused by technology-based standards).

147. Ackerman & Stewart, *supra* note 142, at 1359.

148. *Id.* at 1360. Ackerman and Stewart note that “the defect of the [best available technology (BAT)] system is that it tends to select, more or less arbitrarily, relatively few pollutants and devotes enormous administrative and control resources to regulating them to the hilt.” *Id.* However, the authors also acknowledge that, as exemplified by air toxics regulation, it is “feasible to do a better job of goal-setting—by introducing cost-effectiveness considerations in evaluating

technology-based strategies decrease opportunities for citizen participation by focusing unnecessary attention on “largely incidental and nearly impenetrable questions about currently available technologies, rather than on the appropriate levels of reduction.”¹⁴⁹ In short, the main criticisms levied against technology-based standards are that they are inefficient, are detrimental to technological innovation, and misdirect the attention and priorities of regulators and the public.

In response to these criticisms, the proponents of technology-based standards, notably, Professors Wagner and Latin, offer the following, compelling justifications.¹⁵⁰ Wagner begins her analysis with a useful categorization of pollution-control measures:

Some pollution control measures are stop-gap or foundation types of innovations; others may be considered secondary innovations that perfect or fine-tune the more primitive foundation controls. The first category of innovations I call base innovations because they are at the core or foundation of an environmental regulatory program.¹⁵¹

Focusing on base innovations, she argues that “technology-based standards are generally the first and best answer to pollution control” and are “such dependable base innovations that they should be the first tool considered.”¹⁵² The “outstanding” characteristics of this regulatory tool include the moral imperative it imposes on regulated entities to “do their best,”¹⁵³ as well as the relative ease of promulgation,¹⁵⁴ enforcement,¹⁵⁵ predictability,¹⁵⁶ and adaptability.¹⁵⁷

control options for different risks and setting priorities even more intelligently—even within the BAT system.” *Id.* at 1363.

149. Sunstein, *supra* note 142, at 629. *But see* Lisa Heinzerling, *Selling Pollution, Forcing Democracy*, 14 STAN. ENVTL. L.J. 300, 303 (1995). Heinzerling describes the legislative process that led to the sulfur dioxide trading program created by the 1990 Clean Air Act Amendments as one that did not “force democratic deliberation about the environment” as Sunstein, Ackerman, and Stewart would contend, but that illustrated Congress’s focus on “satisfying powerful interest groups through its allocation of permits.” *Id.*

150. *See* Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and “Fine-Tuning” Regulatory Reforms*, 37 STAN. L. REV. 1267 (1985) (offering justifications for the use of technology-based standards); Wendy E. Wagner, *The Triumph of Technology-Based Standards*, 2000 U. ILL. L. REV. 83 (describing the benefits of technology-based standards); *see also* Sidney A. Shapiro & Thomas O. McGarity, *Not So Paradoxical: The Rationale for Technology-Based Regulation*, 1991 DUKE L.J. 729 (responding to the critics of technology-based standards, and suggesting the continued validity of technology-based standards both on normative and practical grounds).

151. Wagner, *supra* note 150, at 87.

152. *Id.* at 88.

153. *Id.* at 92.

154. *See id.* at 95-96 (“[T]echnology-based standards still significantly outpace—generally by a factor ranging from three to ten times—the promulgation rate of most alternatives, such as standards based on environmental needs, health-related needs, or a cost/benefit analysis of what level of protection is appropriate.”). Although “incentive-based environmental innovations, such

The notion of adaptability is particularly important. As Wagner argues, technology-based standards are uniquely compatible with most secondary innovations and “thus serve as quintessentially hospitable and adaptable base innovations.”¹⁵⁸ Therefore, “one can add a pollution market to technology-based standards but would face great difficulty attempting the reverse.”¹⁵⁹ Moreover, their uniformity and applicability across geographic locations “can be used to ensure that at least some environmental protection is in place if pollution markets do not work or are slow to become operational.”¹⁶⁰

Professor Latin offers similar arguments, suggesting that critics’ “excessive preoccupation with theoretical efficiency” disregards the fact that “any system for environmental regulation must function despite pervasive uncertainty, high decisionmaking costs and manipulative strategic behavior resulting from conflicting private and public interests.”¹⁶¹ In such a “second-best” atmosphere, technology-based controls, while not the most “theoretically efficient” device, often prove to be the most effective in practice. Moreover, Latin warns that while scholars, with the genuine intention of improving efficiency, may advocate fine-tuning strategies, “[a]dministration officials may advocate ‘fine-tuning’ precisely because they believe it will seldom work in practice and would therefore accomplish *sub rosa* deregulation.”¹⁶² In light of the recently proposed EPA actions and the Bush Administration’s frequent professions of market-based preference, one could view Latin’s warning as carrying an uncomfortable ring of truth.

as markets and information-disclosure approaches, may be developed and implemented considerably more quickly than technology-based standards . . . , it is not clear that meaningful pollution reduction is achieved more quickly.” *Id.* at 98.

155. *See id.* at 101 (“[B]ecause the reference point is a definable technology for which numerical standards have been nationally developed, technology-based requirements are almost always clear, easy to codify, and easy to reflect in permit requirements.”). This also facilitates environmental enforcement by private citizens. “Technology-based standards employ a common sense, moral approach to pollution control that can be readily understood by citizen-onlookers.” *Id.* at 103.

156. *See id.* at 101 (“Even markets (at least as they operate today) cannot give sources a dependable outlay of pollution abatement costs over the future, since the cost of pollution permits can vary dramatically from year to year.”).

157. *Id.* at 106.

158. *Id.*

159. *Id.*

160. *Id.* The trading regime for sulfur dioxide emissions, established in Title IV of the 1990 Amendments, highlights the potential importance of technology-based standards as a backup regulatory regime. “Chicago Board of Trade figures for 1999, for example, suggest that about seventy percent of current allowances and ninety-eight percent of future allowances (2004 and after) were purchased by utilities based in the Midwest.” *Id.* at 99. This creates interstate pollution problems, particularly for Northeastern states that receive the brunt of downwind pollution from Midwestern utilities, which, under a trading regime, have little incentive to reduce their emissions or install pollution-control technology.

161. Latin, *supra* note 150, at 1270.

162. *Id.* at 1272.

In suggesting the use of amortization provisions to bring more old sources within the technology regime, I support the justifications posed by the proponents of command-and-control approaches. In particular, technology-based standards are an important first-line strategy, which can be supplemented with secondary, more "finely-tuned" approaches. At the same time, they serve as a kind of safety net regulatory strategy, which like "circuit breakers," can "pre-empt the anticipated failure of another instrument."¹⁶³ The proposal of this Note, which relies on the continued utility of technology-based standards as a first-line approach, is not meant to ignore the potential usefulness of market-based or alternate approaches as secondary or supplemental measures. Rather, the need to have some effective, first-line strategy in place seems all the more important while regulators are in the process of experimenting with, expanding upon, and "fine-tuning" the more "finely-tuned," market-based strategies.¹⁶⁴

VI. CONCLUSION

I have suggested the incorporation of amortization provisions as a potential solution to the continued emissions problem posed by coal-burning electric utilities built prior to the original Clean Air Act. Thirty years after the Act's passage, these problematic sources have not, as the original framers of the Act hoped, died after a "natural life" of thirty or forty years. Instead, the Act's "old-new" division in pollution-control technology requirements has, perversely, conferred unforeseen economic advantages and extended the lives of these outdated plants. Although the New Source Review and Prevention of Significant Deterioration programs have had minor success in narrowing the old-new divide, the majority of old sources remain untouched by the dictates of increasingly stringent control technology requirements imposed upon their new source counterparts.

Today, the threat of an expanding old-new divide looms even larger. A broadening of the interpretation of "routine modification" proposed by the Bush Administration EPA would serve to further cement the grandfathered status of old electric utilities. Proponents of the rules change contend that owners of these utilities face a Hobson's choice, deterring them from modernizing their plants and making efficient changes for fear of triggering

163. Wagner, *supra* note 150, at 106; *see also* NEIL GUNNINGHAM, SMART REGULATION: DESIGNING ENVIRONMENTAL POLICY 407-08 (1998).

164. Even the proponents of market-based emissions trading systems acknowledge their dangerous potential to create "hot-spots," which result when "large numbers of polluters who receive permits through trades . . . locate in the same areas." Sunstein, *supra* note 142, at 636. For a discussion of this and other difficulties regarding emissions trading, *see* STEPHEN BREYER, REGULATION AND ITS REFORM 171-74, 271-84 (1982) (discussing difficulties such as strategic bidding, monitoring, initial allocation of rights, and future price uncertainty).

NSR/PSD pollution-control technology requirements. Indeed, the incentives for making efficient changes to grandfathered sources are perverse. It is a perversity that has evolved from trying to achieve un-grandfathering through the back door, so to speak. But, it is also a perversity that has arisen and been addressed in another context: the land-use context. Using the evolution of zoning law as a guide, a takings-friendly solution to this "Hobson's choice" becomes visible: the imposition of uniform amortization provisions.

The conceptual problem posed by old, coal-burning utilities in the context of air pollution regulation has proven highly analogous to the problem of nonconforming uses in the zoning context. Preexisting nonconforming uses in the land-use context could not be abolished outright without compensation due to the constitutional protection afforded property owners against unjust takings. In response to this problem, a pattern of land-use doctrine emerged that is remarkably similar to the evolution of air pollution regulation over the past thirty years. Namely, restrictions were put upon the ability of a nonconforming-use owner to make changes to her property. If the owner made any significant changes to the nonconforming use, the use would no longer be permitted to continue. Similarly, after the enactment of the NSR and PSD programs in the 1977 CAA Amendments, any "major modification" would render a grandfathered facility "good as new" for regulatory purposes. In both cases, these attempts to rein in old, nonconforming facilities proved insufficient. In the zoning context, however, the technique of amortization emerged as a way to eliminate nonconforming uses provided that the amortization period was reasonable. This technique was never incorporated into the air pollution context, and, in this Note, I contend that this omission was a mistake that should be remedied through immediate legislative action.

While the specifics of an amortization program, which would replace the NSR and PSD programs in dealing with the electric utilities built prior to the original CAA, are beyond the scope of this Note, I highlight one important guideline in the establishment of "reasonable" amortization periods—the use of full-time baselines, which would mandate that BACT requirements be met in a few years. Also, because old plants have been afforded unforeseen economic advantages as a result of the two-tiered framework established thirty years ago, the "amortization compensation equation," a vein of judicial reasoning that emerged in the billboard context, has particular relevance. Although the view of amortization as compensation due to the monopolistic position afforded the owners of a nonconforming use has decreased in popularity in the context of aesthetic billboard regulation, the shift is a result of a highly contentious and questionable amendment to the Highway Beautification Act. If ever a situation merited the legislative resuscitation of the amortization

compensation equation, the problem posed by grandfathered electric utilities seems the ideal scenario. In this way, through the careful incorporation of amortization provisions mandating the imposition of best available control technology for old sources, the thirty- to forty-year un-grandfathering erroneously imagined by the original framers of the 1970 Clean Air Act can at last become a plausible, effective, and long awaited reality.
