

Prevention of Significant Deterioration: A Scalpel, Not an Axe

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Citation to Publisher Oren, Craig N. (2018). Prevention of Significant Deterioration: A Scalpel, Not an Axe.

Version: *Environmental Law reporter* 48(4), 10288-10294. <https://elr.info/news-analysis/48/10288/prevention-significant-deterioration-scalpel-not-axe>.

Citation to *this* Version: Oren, Craig N. (2018). Prevention of Significant Deterioration: A Scalpel, Not an Axe. *Environmental Law reporter* 48(4), 10288-10294. Retrieved from <http://dx.doi.org/doi:10.7282/T3BP0611>.

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C O M M E N T S

Prevention of Significant Deterioration: A Scalpel, Not an Axe

by Craig N. Oren

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Does the United States need the Clean Air Act's (CAA's) Prevention of Significant Deterioration (PSD) program¹ to guard against degradation of air quality? In their recent Comment in these pages, John C. Evans and Donald van der Vaart say no,² but the right answer is more nuanced.

Evans and van der Vaart see PSD as unneeded and as essentially a growth-control scheme designed to hinder development in the Sun Belt region. I argue here that, while the program is flawed in some respects, PSD helps to protect national parklands, guard against pollution “hot spots,” and decrease air pollution emission levels in the United States, thus helping to remedy regional pollution problems. I also argue that current efforts to ease PSD permitting requirements need to avoid undercutting the goals of the program.

I. Background

The question of whether to have an antidegradation program first arose after enactment of the CAA Amendments of 1970.³ The Amendments established the basic framework of today's CAA.⁴ They authorized the U.S. Environmental Protection Agency (EPA) to set national ambient air quality standards (NAAQS) to protect public health and welfare.⁵ The Act also directed states to prepare state

implementation plans (SIPs) to show how the levels of the standards would be attained and maintained.⁶

All those involved in implementing the Amendments agreed that the SIPs had to show how dirty air areas (what we now call nonattainment areas) would be cleaned and kept clean, and that clean air areas (attainment areas) would have to be kept from violating the air quality standards in the future. But it was not clear whether the SIP had to ensure that attainment areas maintain their existing air quality, rather than just assure that they remain within the air quality standards.

EPA initially decided that states had no obligation to maintain existing air quality. But EPA's ruling was overturned by the U.S. District Court for the District of Columbia in *Sierra Club v. Ruckelshaus*.⁷ The court relied on language, first inserted into the CAA by the Air Quality Act of 1967,⁸ stipulating that one purpose of the Act is to “protect and enhance” air quality.⁹ The “protect” language, according to the court, meant that EPA could approve a SIP only if the SIP protected against degradation of superior air quality.¹⁰

Sierra Club was eventually affirmed without opinion by the United States Court of Appeals for the D.C. Circuit and, again without opinion, by an equally divided U.S. Supreme Court.¹¹ As a result, EPA wrote nondegradation regulations.¹² These regulations were codified in altered form in the CAA Amendments of 1977¹³ as the PSD program. EPA has published voluminous regulations implementing the program.¹⁴

1. CAA, 42 U.S.C. §§7470-7479; ELR STAT. CAA §§160-169. Unless otherwise stated, all statutory citations herein are to the CAA. For a longer summary of the PSD program's evolution and provisions, see Craig N. Oren, *Prevention of Significant Deterioration: Control-Compelling Versus Site-Shifting*, 74 IOWA L. REV. 1, 10-28 (1988). For a contemporary and more detailed summary of the PSD program's provisions, as well as the analogous new source review program for dirty air areas, see Bernard F. Hawkins Jr. & Mary Ellen Ternes, *The New Source Review Program, in THE CLEAN AIR ACT HANDBOOK* (Julie R. Domike & Alec C. Zaccaroli eds., American Bar Ass'n 4th ed. 2016).

2. John C. Evans & Donald van der Vaart, *Prevention of Significant Deterioration: A Case for Repeal*, 47 ELR 10742 (Sept. 2017).

3. Pub. L. No. 91-604, 84 Stat. 1676.

4. 42 U.S.C. §§7401-7671q.

5. Sections 108-109, 42 U.S.C. §§7408-7409.

6. Section 110, 42 U.S.C. §7410.

7. 344 F. Supp. 253, 2 ELR 20262 (D.D.C. 1972).

8. Pub. L. No. 90-148, §1, 81 Stat. 485.

9. Section 101(b)(1), 42 U.S.C. §7401(b)(1).

10. *Sierra Club*, 344 F. Supp. at 256.

11. *Sierra Club v. Ruckelshaus*, 4 Env't Rep. Cas. (BNA) 1815 (D.C. Cir. 1972), *aff'd by an equally divided court sub nom. Fri v. Sierra Club*, 412 U.S. 541, 3 ELR 20684 (1973).

12. Implementation Plans: Prevention of Significant Deterioration, 39 Fed. Reg. 42510 (Dec. 5, 1974).

13. Pub. L. No. 95-95, §127, 91 Stat. 685, 731-42.

14. 40 C.F.R. §51.166 (2016) (requirements for states in adopting the PSD program into their implementation plans); 40 C.F.R. §52.21 (2016) (al-

The PSD program applies to new or modified “major emitting facilities”—defined in terms of both the proposed facility’s potential to emit and the kind of facility it is—that locate in areas that meet at least one of the national air quality standards.¹⁵ Because every area is in attainment for at least one of the air quality standards, the PSD program applies everywhere in the United States.¹⁶

Anyone seeking to construct or modify a major emitting facility must obtain a preconstruction permit.¹⁷ There are two main conditions for obtaining a PSD permit. First, the applicant must show that the facility will emit at levels equivalent to those that can be reached using the best available control technology (BACT).¹⁸ BACT is determined on a case-by-case basis, and the determination must be at least as strict as any new source performance standard (NSPS) for the facility’s category.¹⁹ Under long-standing EPA guidance, BACT is set at the tightest limit attained in practice unless the source can show that to be infeasible.²⁰

The second condition is that the applicant must show both that the facility would not cause a violation of the air quality standards and that it would fit within increments restricting growth of air pollution above, roughly, the level prevailing when the first application was made for a PSD permit.²¹ The increments apply to increases in sulfur dioxide, fine particulate matter, and nitrogen oxides.²² The size of the increments varies according to the classification of

the area. The tightest increments are for Class I areas; the loosest are for Class III.²³

In the 1977 Amendments, the U.S. Congress designated almost the entire nation as initially being in the intermediate Class II classification, subject to reclassification by states or Indian tribes.²⁴ The chief exceptions were national parklands: Congress mandated that large national parks and wilderness areas created before 1977 be mandatory Class I areas.²⁵ Aside from several Indian tribes seeking to reclassify as Class I, there have been no reclassifications.²⁶ Similarly, no state or tribe has sought to have an area reclassified as Class III—a testament to how easy it generally is for new projects to fit within the Class II increments.

II. Why PSD?

The threshold question is: why have a PSD program at all? After all, emissions of all criteria air pollutants and many hazardous air pollutants have been steadily dropping since 1970,²⁷ and there is no sign that this trend will end. But there is the possibility (although it seems unlikely, given that clean sources of energy are supplanting dirty ones like coal) that, despite the national trends, the United States may develop “hot spots” with sharp increases in air pollution. In addition, there could be additional growth affecting Class I areas. Aside from these situations, PSD cannot be justified as a means to prevent the “graying of America” or as a way to protect diversity among areas in air quality,²⁸ for the lack of national emissions increases makes it unlikely that existing air quality or its diversity will be threatened.

But that does not make PSD pointless. PSD is an important way of bringing about that expected reduction in emissions. By requiring the use of BACT, increases from new and modified sources are limited, thus helping to bring about overall decreases in air pollution as older sources retire. These decreases help diminish air pollution effects—not just those that correlate with high concentrations of air pollutants, but also those, like acid rain and visibility damage, that are linked to total emissions in the atmosphere over broad areas. In effect, a program intended to prevent significant deterioration has become a program to help bring about diminutions in emissions to

most identical rules that EPA administers in areas that have not adopted the PSD program in their implementation plans). For a detailed and still useful explanation of many of the key parts of the program, see Requirements for Preparation, Adoption, and Submittal of Implementation Plans, 45 Fed. Reg. 52675 (Aug. 7, 1980).

15. See §165(a), 42 U.S.C. §7475(a) (stating requirements for the construction of a “major stationary facility”); §169(1), 42 U.S.C. §7479(1) (defining the term “major stationary facility”); §169(2)(C), 42 U.S.C. §7479(2)(C) (specifying that the term “construction” includes a “modification”). On the national applicability of PSD, see §161, 42 U.S.C. §7471 (specifying that the PSD program applies to every air quality control region that is designated attainment or unclassifiable for an air pollutant).
16. See Oren, *supra* note 1, at 19. For a current list of nonattainment areas for each air pollutant, see U.S. EPA, *Nonattainment Areas for Criteria Pollutants (Green Book)*, <https://www.epa.gov/green-book> (last updated Feb. 1, 2018).
17. Section 165(a), 42 U.S.C. §7475(a).
18. Section 165(a)(4), 42 U.S.C. §7475(a)(4).
19. See §169(3), 42 U.S.C. §7479(3) (defining “best available control technology”).
20. See Memorandum From John Calcagni, Director, Air Quality Management Division, U.S. EPA, to Director, Air Management Division, Regions I, III, and IX, U.S. EPA et al. (June 13, 1989) (Transmittal of Background Statement on “Top-Down” Best Available Control Technology (BACT)), <https://www.epa.gov/sites/production/files/2015-07/documents/topdown.pdf>.
21. See §165(a)(2), 42 U.S.C. §7475(2) (imposing the increment requirement); §169(4), 42 U.S.C. §7479(4) (defining the term “baseline concentration,” which determines the date for each area when the increments start to apply).
22. See §163(b), 42 U.S.C. §7473(b) (setting out increments for particulate matter and sulfur dioxide); Prevention of Significant Deterioration for Nitrogen Oxides, 53 Fed. Reg. 40656 (Oct. 17, 1988) (extending the increments to nitrogen oxides). The particulate matter increments originally covered “total suspended particulates”; they now cover only particles smaller than 10 micrograms, with additional increments for fine particles. For a current list of increments, see 40 C.F.R. §51.166(c) (2017).

23. See §163(b), 42 U.S.C. §7473(b) (setting out the three classes of areas).

24. See §162(b), 42 U.S.C. §7472(b). Reclassification procedures are set out in §164, 42 U.S.C. §7474.

25. See §162(a), 42 U.S.C. §7472(a).

26. Oren, *supra* note 1, at 25.

27. See U.S. EPA, *Air Pollutant Emissions Trends Data*, <https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data> (last updated Dec. 7, 2017).

28. See Richard B. Stewart, *The Development of Administrative and Quasi-Constitutional Law in Judicial Review of Environmental Decisionmaking: Lessons From the Clean Air Act*, 62 IOWA L. REV. 713, 750-58 (1977) (arguing that “environmental diversity” is required by constitutional and quasi-constitutional considerations).

protect against sources in attainment areas contributing to regional air pollution problems.

There is an additional powerful rationale for a PSD program: to preserve pristine air quality in national parks and wilderness areas.²⁹ There is simply no way to set national secondary ambient air quality standards at levels that would protect the parks; this would require standards below background levels in the East. And because of the East's high humidity as compared to the intermountain West, standards adequate to protect the West would not give the East the visibility found in the West. The only way to protect the parks from degradation, therefore, is to have a special program like PSD.

The two elements of PSD serve different functions in attempting to accomplish its goals. The BACT requirement is basically an augmentation of the technology-based NSPS that are set by EPA for categories of new and modified stationary sources.³⁰ Like the NSPS program, BACT assures that no state can attract industry by being a pollution haven. And like the NSPS program, BACT minimizes emissions from new industry, thus helping to solve air quality problems like interstate transport of air pollution and to assist in preventing present attainment areas from becoming nonattainment. BACT is a superior approach to NSPS alone because BACT is set case-by-case, and thus can take advantage of improvements in control technology since the setting of the NSPS, and can be based on the characteristics of an individual source.

The only difficulty is the possibility that strict standards for new sources that do not apply to existing sources—what is called vintage-differentiated regulation—may encourage industry to keep running older and dirtier equipment rather than replacing it with newer and cleaner facilities.³¹ If this effect is extreme enough, it eliminates or exceeds any environmental advantage from tight standards for new sources.³²

It is far from clear that strict controls on new sources generally do cause such a counterproductive result. Analysis by EPA in the 1970s did show that very tight standards on new power plants would actually raise the emissions from power plants as a whole.³³ Even the standards that

EPA eventually adopted have been shown to keep existing plants online longer.³⁴ Few new coal-fired power plants have been built to replace older plants; rather, plant operators did all they could to extend the lives of plants that were built before EPA's standards for new sources went into effect.

But this effect is largely a thing of the past. Beginning in 1990, existing power plants have been regulated under the acid rain, interstate transport, and hazardous air pollutant programs to the point where existing plants need scrubbers, and so there is little purpose in trying to extend the plants' lives. Moreover, natural gas and renewables have become so cheap that existing coal-fired plants are closing for economic reasons. Whatever the counterproductive effects in the past of singling out new electricity-generating plants for regulation, these seem only a minor factor in the future.

Electricity-generating plants are not the only industrial sector in which strict controls on new plants create the incentive to keep older, dirtier sources online longer.³⁵ But we do not know for these sectors whether the effects of encouraging old sources to stay online longer actually outweigh the environmental benefits of regulating new sources. Nor do we know if any outweighing, if it occurs, is short-term or permanent. As Profs. Richard Revesz and Jonathan Nash say, these are empirical questions for which the answers are not clear.³⁶

If the outweighing is long-term, then strict controls on new sources like the BACT requirement seem undesirable. But even here, the response might be not to weaken new source controls, but rather to augment controls on existing sources to eliminate the incentive to keep them online longer.³⁷ Indeed, the regulatory history of electricity-generating plants, in which existing plants have increasingly been subject to strict requirements, is an example of this kind of response.

III. Does PSD Need Reform?

Subject to the caveat about creating environmentally counterproductive effects, the BACT element of PSD is defensible. It is harder to say the same about the increments. Evans and van der Vaart argue that the increment system is designed to hinder growth in clean air areas, and thus to protect dirty air areas. They cite numerous statements from PSD advocates on the need for the program to avoid undue impacts on dirty air areas.³⁸

This argument, though, is belied by the fact that the U.S. Senate (where clean air states have considerable clout, since each state has the same representation regardless of

29. For a detailed explication of this theme, see Craig N. Oren, *The Protection of Parklands From Air Pollution: A Look at Current Policy*, 13 HARV. ENVTL. L. REV. 313 (1989).

30. See §111, 42 U.S.C. §7411. Evans and van der Vaart reject as "fascinating" an EPA ruling that a BACT determination cannot be weakened based on the source's expected lack of impact on air quality. Evans & van der Vaart, *supra* note 2, at 10743. But it is inherent in technology-based standards that their stringency is the same regardless of the extent to which a proposed source threatens environmental quality. The reason is that the point of technology-based standards is largely to provide insurance against future discoveries that a source is causing an environmental problem. Moreover, considering air quality would give clean air areas an advantage over dirty air areas in attracting industry, and preventing this advantage is a central purpose of technology-based standards.

31. See Art Fraas et al., *EPA's New Source Review Program: Time for Reform?*, 47 ELR 10026, 10030 (Jan. 2017).

32. See Robert N. Stavins, *Vintage-Differentiated Environmental Regulation*, 25 STAN. ENVTL. L. REV. 29 (2006), available at https://sites.hks.harvard.edu/m-rcbg/cephu/Vintage_Differentiated_Regulation2.pdf.

33. New Stationary Sources Performance Standards; Electric Utility Steam Generating Units, 44 Fed. Reg. 33580, 33607 (June 11, 1979).

34. See Stavins, *supra* note 32, at 50-54.

35. See Jonathan Remy Nash & Richard L. Revesz, *Grandfathering and Environmental Regulation: The Law and Economics of New Source Review*, 101 NW. U. L. REV. 1677, 1712 (2007).

36. *Id.*

37. *Id.*

38. Evans & van der Vaart, *supra* note 2, at 10743. Note that one of their prime quotes comes from Rep. David Satterfield (D-Va.) who, rather than being an advocate of PSD, was a fierce opponent.

its population) was much more aggressive than the U.S. House of Representatives (where urban areas are heavily represented) in pushing for enactment of the PSD program; Sen. Pete Domenici (R) of New Mexico, a Sun Belt state, praised the program in glowing terms after its codification in 1977.³⁹ Moreover, there seems virtually no evidence that the increments are interfering with growth in clean air areas; though there are some individual cases in which the increments have presented issues, these are usually overcome.⁴⁰ The lack of any pressure to make areas Class III confirms that the increments are not having any important growth-hindering effects. Consider also that dirty air areas are subject to even tighter rules than areas subject to PSD for the construction and modification of air-polluting facilities.⁴¹ The result has been to push development to PSD areas.⁴²

On the other hand, the increment system is problematic. The increment system is in effect a risk assessment device: it seeks to identify instances in which a proposed project should be forced by the prospect of an increment violation to move to a different area or to install especially advanced pollution controls. At the same time, the increment system creates tertiary air quality standards that vary from area to area, based on the area's baseline air quality and the area's increment classification. Thus, the increment system gives greater protection to areas with clean air than to those with air quality that violates the NAAQS.⁴³

Tertiary air quality standards are clearly warranted to preserve pristine air quality in national parks and wilderness areas for the reasons explained earlier: only nationally uniform air quality standards set at zero would protect the parks from damage. The present PSD scheme, though, is flawed in protecting the parks.⁴⁴ Much of the threat to the parks comes from existing sources, which are exempt from PSD regulation unless modified; from transport from urban areas like Los Angeles; or from sources too small to require PSD permits.

In addition, air quality increments protect only against effects whose occurrence correlates with the size of pollutant concentrations at particular locations; by contrast, as discussed above, acid rain and damage to visibility are linked to the total amount of emissions over a broad area without regard to point concentrations. Ideally, the Act's provision allowing projects affecting the parks to be stopped even if they satisfy the Class I increment would protect parks from air pollution damage not linked to specific concentrations, but there is no instance of this provision being used.

Evans and van der Vaart suggest that the long-term program to phase out all anthropogenic impairment of visibility makes it unnecessary to have the PSD program protect the parks.⁴⁵ This is unconvincing. The visibility program is supposed to reach its goal only in 2064, and EPA has delayed the date by which states must submit their visibility plans.⁴⁶ In addition, the Agency is now considering whether to rethink the visibility program.⁴⁷ Nor would a phaseout of visibility impairment necessarily protect the parks from all forms of degradation (e.g., harm to vegetation from high concentrations of air pollution).

Rather, what we need is administrative and legislative action to make the protections for parklands more effective. One modest step in this direction was EPA's 1996 proposal—never adopted—to flesh out the criteria used in deciding whether the federal government should press to have a project rejected even though it fits within the Class I increments, and in deciding which projects should be allowed even though violating the increments.⁴⁸ This would stop the Class I increments from being used as a rigid decision tool, and allow them instead to be utilized, as Congress intended, as devices to assign the burden of proof on whether to allow a source near a park to locate. But this proposal—which also contained elements designed to streamline the program—was not included in the new source review reform measures established by the George W. Bush Administration in 2002 and 2003.

Thus, the goal of protecting parklands justifies having a PSD program, although the present one falls short of achieving its objectives. The situation is different with respect to clean air areas other than parklands. While, as I have explained, the BACT element is defensible, there seems little to recommend the Class II and Class III increments.

Section 160 of the CAA specifies purposes for the PSD program other than park protection.⁴⁹ Chief among these is protecting the public from air pollution concentrations that are allowed by the NAAQS. Much research shows that health effects can occur even in areas with air quality superior to the ambient air quality standards.⁵⁰

The effect of the increment scheme, though, is to give greater protection to people living in clean air areas than in dirty air areas.⁵¹ It is not obvious why this is desirable. True, the costs of maintaining good air quality are less than the costs of cleaning up poor air quality, because there is no need to impose controls on existing sources to

39. See Pete V. Domenici, *Clean Air Act Amendments of 1977*, 19 NAT. RESOURCES J. 475, 480-81 (1979) ("I consider [nondegradation] 'my baby.'").

40. See E-mail to Author From Juan Santiago, Associate Division Director, Air Quality Policy Division, Office of Air Quality Planning and Standards, U.S. EPA (Nov. 16, 2017) (on file with author).

41. See §173, 42 U.S.C. §7503 (requiring the use of the lowest achievable emission rate and the furnishing of offsets for building in nonattainment areas). These requirements are even harsher in ozone nonattainment areas.

42. See Fraas et al., *supra* note 31, at 10028.

43. See Oren, *supra* note 1, at 28-30.

44. For elaboration, see Oren, *supra* note 29, at 344-68.

45. Evans & van der Vaart, *supra* note 2, at 10746.

46. See Protection of Visibility: Amendments to Requirements for State Plans, 82 Fed. Reg. 3078 (Jan. 10, 2017).

47. See Sean Reilly, *In Win for Utilities, EPA to Revisit Haze Regulations*, GREENWIRE, Jan. 19, 2018.

48. See Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR), 61 Fed. Reg. 38250, 38283-84 (July 23, 1996).

49. 42 U.S.C. §7470.

50. For a recent example, see Qian Di et al., *Association of Short-Term Exposure to Air Pollution With Mortality in Older Adults*, 318 JAMA 2446 (2017). For commentary, see Junfeng Zhang, Editorial, *Low-Level Air Pollution Associated With Death: Policy and Clinical Implementations*, 318 J. AM. MED. ASSOC. 2432 (2017).

51. See Oren, *supra* note 1, at 68-69.

protect presently clean air from experiencing violations of the standards. On the other hand, nonattainment areas are suffering greater health and welfare damage than are clean air areas, so one would think that the benefits of cleaning dirty air are great and perhaps offset the cost of controlling existing sources. More fundamentally, a cost-benefit rationale for special health protection for clean air areas in effect accepts the premise that cost-benefit analysis ought to be the basis for air quality standards, a premise that most environmentalists reject.

Moreover, the PSD increment system seems like an odd way to protect public health. Imagine a Class II area in which the baseline was 25 micrograms and there have been 20 micrograms of new development since the first application for a PSD permit. A new source would be barred from locating there because the Class II increment of 20 has been used up. But suppose there is another area with a baseline of 60, with no development at all. The source would in effect be encouraged to go from a lower-pollution area (with air quality of 45) to a higher-pollution area (with air quality at 60).

Probably the best explanation for why the PSD increments exist is what behavioral economists call the endowment effect: the tendency people have to put more value on preserving what they have than on acquiring something new.⁵² Thus, people see more value in maintaining a benefit of, say, \$1 million, than in acquiring the same benefit. This phenomenon explains the increment system perfectly, for that system is a way of helping people keep what they have, whether it be air quality much better than the ambient air quality standards, or just a little bit better. But while the appeal of the increment system can be explained, that cannot stand as a justification for the program, but rather only as a way to understand why the increment system exists.

Thus, the increment system is a poor way to identify the sources that need to be singled out for exceptional control. Ideally, the system would be replaced by something better. It is not clear what this would be. Fortunately, the need for such a risk assessment scheme is limited, because EPA's guidance tells permit writers to start their examination of BACT by assuming that the BACT should consist of the lowest emission limit reached in practice for that type of source; only infeasibility can justify a relaxation.⁵³ This limits the amount of variability in BACT determinations, and so there is little need for a special screening device (aside from the protection of national parklands).

52. See Daniel Kahneman et al., *Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5(1) J. ECON. PERSP. 193-206 (1991); Thucydides attributes the point to the Greek statesman Pericles, speaking 2,500 years ago. THUCYDIDES, ON JUSTICE, POWER, AND HUMAN NATURE: SELECTIONS FROM THE HISTORY OF THE PELOPONNESIAN WAR 45 (Paul Woodruff ed., trans., 1993) ("for sorrow is not for the want of a good never tasted, but for the loss of a good we have been used to having").

53. See *supra* note 21 and accompanying text.

IV. The Future of PSD

Despite the flaws in PSD, no one except Evans and van der Vaart seems interested in radically changing it. Rather, the action these days is in attempting to streamline the program and the nonattainment new source review (NNSR) program for nonattainment areas, collectively referred to as NSR. The changes would apply to modifications, defined in the CAA as physical changes that increase emissions. Such changes are much more frequent than the construction of new plants. Companies want to be able to make these changes quickly to meet market demand for new or altered products or to add energy efficiency and new pollution controls to their plants, and so wish to minimize the circumstances under which they would have to pass through a complicated permitting process.

The Trump Administration made clear in its opening days that it wished to minimize or eliminate barriers to projects to enhance manufacturing.⁵⁴ The U.S. Department of Commerce subsequently did an analysis of barriers in which NSR was prominently mentioned,⁵⁵ and EPA has since announced that it will seek to reform NSR.⁵⁶ The idea of easing permitting requirements is of long standing. In 1996, under the Clinton Administration, EPA proposed administrative changes to reduce the number of projects that are considered modifications and thus subject to the need for an NSR permit.⁵⁷

The Bush Administration tried to help industry by promulgating in 2002⁵⁸ and 2003⁵⁹ what it described as reforms to NSR.⁶⁰ These changes sought to exempt some projects from needing NSR permits, either by changing the Agency's method of calculating whether there would be an increase in emissions or by defining the project as not constituting a physical change. EPA's efforts met a mixed reception from the D.C. Circuit, which upheld only some of the 2002 changes⁶¹ and vacated the most important, the 2003 attempt to define "routine maintenance" so

54. See Presidential Memorandum, Streamlining Permitting and Reducing Regulatory Burdens for Domestic Manufacturing (Jan. 24, 2017).

55. See U.S. DEPARTMENT OF COMMERCE, STREAMLINING PERMITTING AND REDUCING REGULATORY BURDENS FOR DOMESTIC MANUFACTURING (2017).

56. See Jennifer Lu, *Pruitt Eyes Changes to Air Pollution Permitting Regime*, BLOOMBERG BNA, Sept. 20, 2017, <https://www.bna.com/pruitt-eyes-changes-n57982088234/>.

57. See *supra* note 48, at 38250.

58. Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Baseline Emissions Determination, Actual-to-Future-Actual Methodology, Plantwide Applicability Limitations, Clean Units, Pollution Control Projects, 67 Fed. Reg. 80186 (Dec. 31, 2002).

59. Prevention of Significant Deterioration (PSD) and Non-Attainment New Source Review (NSR): Equipment Replacement Provision of the Routine Maintenance, Repair, and Replacement Exclusion, 68 Fed. Reg. 61248 (Oct. 27, 2003).

60. Sometimes, as in the title to the EPA promulgations in the preceding footnote, EPA refers to the NNSR program as being NSR, but the Agency and commentators sometimes refer to both programs as NSR. NNSR is a better abbreviation for the nonattainment new source review program.

61. See *New York v. Environmental Prot. Agency*, 413 F.3d 3, 35 ELR 20135 (D.C. Cir. 2005).

broadly that many projects would not be considered physical changes.⁶²

The Trump Administration EPA has already issued guidance changing one portion of NSR. As we have seen, a major emitting facility that wishes to modify needs a PSD permit. The Act defines a modification as a physical change that increases emissions.⁶³ But what does it mean for a modification to increase emissions? This is a difficult question because the source and the permitting authority need to know ahead of time whether an increase will occur.

For many years, EPA required that the actual emissions from the facility before the change be compared to the potential emissions after the change.⁶⁴ This might mean that a permit would be required for a project that would not cause an increase in actual emissions, and might in fact discourage projects that would result in a decrease in emissions. In 2002, EPA switched to comparing the pre-change actual emissions with the projected actual emissions after the change.⁶⁵ The D.C. Circuit upheld this change, with the proviso that EPA had to reasonably explain its limited requirements for documentation by major facility operators of the basis for their projections.⁶⁶

To what extent, though, can EPA question these projections? This issue has come up in the *DTE Energy* litigation.⁶⁷ Here, a utility claimed that it did not need an NSR permit because its projections showed that its renovations would not increase its emissions. EPA challenged the projections. The utility argued that EPA could not question the projections. The court held (and later reaffirmed) that the Agency could do so, at least when the utility had blatantly violated EPA's rules for making the projections. In both decisions, the court was divided 2-1 and five different opinions were written in the two combined. All the same, the Supreme Court denied certiorari.⁶⁸

The *DTE Energy* decisions mean that, as with the actual-to-potential test, a permit might be needed for a project that would never actually increase emissions. EPA has responded with recent guidance from Administrator Scott Pruitt.⁶⁹ The guidance states that EPA will not second-guess preconstruction emissions projections, and will act before construction only if the facility has committed clear error in following EPA's regulations for making

projections. Otherwise, the Agency will not act unless it appears that the project in fact did increase emissions.⁷⁰

We can expect more attempts to limit what changes require NSR (including PSD) permits. The most important issue currently involves another question of how to determine whether a physical change would increase emissions. Currently, EPA's regulations call upon permit writers to measure emissions increases in terms of projected increases in annual emissions. This method is not used in the NSPS program. There, EPA's regulations stipulate that an increase in emissions is considered to have occurred only if the change would increase maximum hourly emissions.

It makes a big difference which approach is used. Consider a plant running 50% of the time. Suppose it engages in a physical change that makes the plant more efficient. It may even emit fewer emissions hourly than before the change. Suppose that the owner decides to run the plant 75% of the time because of its greater efficiency. There may be no increase in hourly emissions, but the additional utilization may cause a considerable increase in annual emissions. Thus, a project that requires a PSD permit under the annual emissions approach—thus mandating the use of BACT to curb emissions—might very well not under the hourly emissions approach.

In 2005, the U.S. Court of Appeals for the Fourth Circuit ruled that EPA had to use the NSPS hourly definition in PSD and other NSR programs.⁷¹ The court reasoned that when Congress codified PSD and the nonattainment NSR program in 1977, Congress had in effect ratified EPA's extant NSPS regulations governing how emission increases are determined in that program. EPA promptly issued a proposal to adopt this approach nationally for electricity-generating plants.⁷²

But the Supreme Court reversed in 2007.⁷³ There, the Court said that there was no reason to suppose that Congress in 1977 had mandated that EPA use the NSPS regulatory approach for the NSR programs. But the Court left it open for EPA to adopt the NSPS hourly emissions approach in the NSR programs if it could show that was reasonable. The Bush Administration EPA promptly proposed a rule adopting for existing electricity-generating plants the NSPS approach for the NSR programs.⁷⁴ This rule, though, was not adopted before the end of the Bush Administration, and died during the Obama Administration.

The issue will no doubt reemerge. Adoption of the hourly emissions approach might even be broader than under the Bush Administration's proposal; it is not impossible that the hourly emissions test could be used for all

62. See *New York v. Environmental Prot. Agency*, 443 F.3d 880, 36 ELR 20056 (D.C. Cir. 2006), cert. denied, 550 U.S. 928 (2007).

63. Section 111(a)(5), 42 U.S.C. §7411(a)(5). While this definition applies on its face only to the NSPS program, Congress stipulated that the definition also applies to the PSD program. See §169(2)(C), 42 U.S.C. §7479(2)(C).

64. See *Environmental Prot. Agency*, 413 F.3d at 15.

65. See *id.* at 16.

66. See *id.* at 34-36.

67. *United States v. DTE Energy*, 711 F.3d 643, 43 ELR 20070 (6th Cir. 2013); *United States v. DTE Energy*, 845 F.3d 735, 47 ELR 20007 (6th Cir. 2017).

68. *DTE Energy v. United States*, 138 S. Ct. 555 (2017).

69. See Memorandum From E. Scott Pruitt, Administrator, U.S. EPA, to Regional Administrators, U.S. EPA (Dec. 7, 2017) (New Source Review Preconstruction Permitting Requirements: Enforceability and Use of the Actual-to-Projected-Actual Applicability Test in Determining Major Modification Applicability), https://www.epa.gov/sites/production/files/2017-12/documents/policy_memo.12.7.17.pdf.

70. See *id.* at 7-8.

71. *United States v. Duke Energy Corp.*, 411 F.3d 539, 35 ELR 20121 (4th Cir. 2005), *aff'g*, 278 F. Supp. 2d 619, 32 ELR 20741 (M.D.N.C. 2003).

72. Prevention of Significant Deterioration, Nonattainment New Source Review, and New Source Performance Standards: Emissions Test for Electric Generating Units, 70 Fed. Reg. 61801 (Oct. 20, 2005).

73. *Environmental Def. Fund v. Duke Energy Corp.*, 549 U.S. 561 (2007).

74. See Supplemental Notice of Proposed Rulemaking for Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NSR): Emissions Increases for Electric Generating Units: Proposed Rule, 72 Fed. Reg. 26202 (May 8, 2007).

existing sources, not just electricity-generating plants. And, as discussed above, the change could considerably diminish the reach of PSD and other NSR programs.

In proposing the switch to the hourly test, EPA argued that because almost all electricity-generating plants are covered by subsequently adopted and more efficient programs (such as the Clean Air Interstate Rule (CAIR) and EPA's visibility programs) the annual test was no longer necessary.⁷⁵ This assumes that those programs provide enough protection so that BACT is not needed. That assumption seems suspect. The CAIR program has since been superseded by the more stringent goals of the Cross-State Air Pollution Rule (CSPAR), suggesting that the CAIR program does not afford sufficient protection from utility air pollution. Even if CSPAR's emissions goals are substituted, there is no reason to assume that this or similar programs substitute for the air pollution-cleansing effects of the PSD program; they are rather an adjunct to PSD. Moreover, CAIR and CSPAR are trading programs, and hence do not

take into account localized harms from sources that are able to trade their way out of pollution control.

There may well be other areas in which streamlining is sought. For instance, the routine maintenance issue might reemerge; though, given the D.C. Circuit's invalidation of EPA's 2003 rule, congressional action would probably be needed.⁷⁶ Another example is the treatment of pollution control projects, which can increase emissions of a pollutant even while reducing emissions of others. This change probably also requires congressional action, since the D.C. Circuit also rejected as unauthorized by the statute EPA's attempt to exempt such projects.⁷⁷

In these and allied issues, EPA and Congress will have to balance the purposes of the PSD program with the needs of the operators of major sources of air pollution. Given the rhetoric and behavior so far of Administrator Pruitt, it is hard to be optimistic that a reasonable balance will be struck. Yet, that is precisely what is needed.

75. See *id.* at 26404.

76. See *New York v. Environmental Prot. Agency*, 443 F.3d 880, 36 ELR 20056 (D.C. Cir. 2006), *cert. denied*, 550 U.S. 928 (2007). The House subcommittee with legislative jurisdiction over the CAA recently held a hearing on reform of the NSR programs, but there was no consensus. Thus, legislation appears unlikely. See Sean Reilly, *New Source Review Hearing Ignites Old Divisions*, E&E NEWS (Feb. 15, 2018).

77. See *New York v. Environmental Prot. Agency*, 413 F.3d 3, 40-42, 35 ELR 20135 (D.C. Cir. 2005).