Air In The Balance:
Rewriting The Clean Air Act’s New Source Review Program

by Caleb A. Jaffe

One of the most significant Clean Air Act battles of the last fifteen years is almost over. In December 2002, in response to industry criticisms of the permitting process, the U.S. Environmental Protection Agency (EPA) published changes to the federal regulations on New Source Review (NSR)—a core program of the Clean Air Act. In June 2005, after nearly three years of litigation, the U.S. Court of Appeals for the District of Columbia Circuit announced its ruling on challenges to those reforms. In the meantime, Virginia has been moving forward with its own plans to incorporate some of the federal changes into the state NSR program. The state process should be completed before the end of the calendar year. These milestones mean that for the first time since Congress amended the Clean Air Act in 1990, Virginia’s electricity providers, manufacturers, regulators and clean air advocates live in a dramatically new regulatory landscape.

Hazy Days in the Old Dominion
Today, 4.8 million Virginians—two-thirds of the state’s population—live in communities that fail to meet the EPA’s minimum air quality standards for protecting human health.2 Forty-two of Virginia’s cities and counties have been designated by the EPA as having unhealthy levels of fine particulate matter, ground-level ozone, or both.3 These “nonattainment areas” stretch from the Shenandoah National Park to the Chesapeake Bay, and from Washington, D.C., to the North Carolina state line. Electric utilities and other industrial sources are significant emitters of nitrogen oxides and sulfur dioxide, the primary precursors to ground-level ozone and fine particulate matter, respectively.4

The health and environmental impacts of Virginia’s air pollution problems are astounding. An independent analysis by Abt Associates, a firm frequently employed by the EPA, shows that pollution from coal-fired power plants causes approximately 1,000 deaths, 23,700 asthma attacks, and 140,600 lost work days every year in Virginia.5 Ozone pollution has turned Shenandoah National Park into the country’s third most polluted national park.6 The respected Frommer’s Virginia guidebook now warns vacationers against planning a summertime visit to Shenandoah, stating that “high ozone levels frequently create obscuring smog during the summer.”7 Hundreds of square miles of “dead zones” in the Chesapeake Bay—a region with too little oxygen to support a healthy aquatic ecosystem—are linked to excess nitrogen. One-third of that nitrogen pollution enters the bay from the air, with coal-fired power plants as the largest single source.8

The economic effects of air pollution are equally troubling. The designation of an area as “nonattainment” often deters business development because of the federal restrictions that accompany this designation. When an area falls into nonattainment, it is prohibited from bringing in new industrial development unless it can provide pollution reduction offsets to counterbalance increases in emissions. With so many cities and counties labeled as nonattainment, Virginia faces limits on economic growth if it does not improve air quality.

In addition to the difficulties for attracting new industry, dirty air also creates problems for maintaining existing businesses. Another Abt Associates study finds that a 25 percent increase in visitation at Shenandoah National Park due to increased visibility could yield as much as thirty million dollars annually in increased sales benefits and tax revenues, and eight hundred jobs for local communities surrounding the park.9 Ground-level ozone pollution also costs Virginia’s farmers up to nineteen million dollars annually in reduced crop yields of wheat, soybeans, cotton, peanuts and corn.10 This figure

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excludes costs of reduced yields in wine-producing grapes—a burgeoning Virginia industry and one that is particularly vulnerable to ozone damage.

Given the severity of air pollution problems statewide, many public health and environmental advocates maintain that now is the wrong time to relax the air pollution regulations through unproven NSR revisions. To the contrary, the DEQ needs to be given the necessary tools to clean up Virginia’s air.

A Brief History of New Source Review

In 1970, a package of congressional amendments gave birth to the modern Clean Air Act. The act outlined the National Ambient Air Quality Standards (NAAQS)—“the attainment and maintenance of which” would be “requisite to protect the public health” while “allowing an adequate margin of safety.” To meet these health-based air quality standards, Congress directed the EPA to administer a technology-based program of New Source Performance Standards (NSPS), which were designed to improve the environmental performance of pollution sources.

By 1976, however, it had become clear that the NSPS program was failing. Large portions of the country were still unable to attain the minimum requirements set by EPA for the NAAQS. As then-U.S. Senator Edmund S. Muskie, an author of the Clean Air Act, informed his Senate colleagues, “The record to date under the new source performance standards approach has been disappointing.” In the face of this disappointment, Congress set about supplementing the NSPS with a new program—New Source Review (NSR). Whereas NSPS had focused on the unit-specific “performance” of each source, the overriding concern for the NSR program would be to maintain or improve air quality within a given geographic area, considering the impact of all emitting facilities together in that area.

The EPA enacted regulations in 1978 to implement the NSR. Those regulations were immediately challenged in the U.S. Court of Appeals for the District of Columbia Circuit Court by a wide array of stakeholders, including major oil, coal and gas interests; electric utilities; manufacturers’ representatives; forest products industries; state governments; and environmentalists. The result was an opinion, *Alabama Power, et al., v. Castle*, that spanned nearly ninety pages in the *Federal Reporter*. Despite its length, breadth and detail, however, the D.C. circuit’s ruling did not end all disputes related to the application of NSR. Litigation related to the enforcement of the 1980 regulations has now lasted more than a quarter century, with the courts still divided on how to resolve some of the most pertinent issues. While the Fourth Circuit has required the EPA to interpret “modification” identically in both the NSR and NSPS regulations, the D.C. circuit has allowed the term to be defined differently within the two programs, observing that “the regulatory definitions in the NSPS and PSD programs already differed at the time of the 1977 [Clean Air Act] amendments.”

In December 2002, the EPA promulgated the first major overhaul of the NSR regulations since the revisions following the D.C. circuit’s 1979 decision in *Alabama Power*, sparking another round of litigation. The agency justified the changes as necessary to streamline the regulatory process, provide greater certainty of when NSR would be triggered, and allow increased flexibility to meet the necessary requirements. Although the regulated community applauded the EPA for its efforts, environmentalists, public health advocates and state regulators were not so enthusiastic. Critics of the December 2002 rules noted that the EPA dramatically expanded exemptions to NSR, failed to include essential record keeping and enforcement mechanisms to ensure that the process was not abused, and employed an unorthodox new method for calculating emissions increases. They maintain that these revisions would effectively repeal key portions of the Clean Air Act by giving industry substantial leeway to avoid NSR requirements in perpetuity.

The D.C. Circuit’s Ruling on the 2002 NSR Revisions

Citing failings in the federal rule, several citizens’ groups and states’ attorneys general challenged the 2002 changes in the D.C. Circuit Court of Appeals. The D.C. Circuit responded by striking down three major portions of the EPA regulations: the Clean Unit exemption, Pollution Control Projects and a record keeping exemption for facilities believing that they would have “no reasonable probability” of triggering NSR. At the same time, the court cautiously deferred to the EPA on designing a Plantwide Applicability Limit program and calculating a facility’s baseline emissions.

The Clean Unit exemption would have allowed a unit to qualify for “Clean Unit” status if the operator installed state-of-the-art emissions controls under the act, or controls that would have been “comparable to” what the act required. The Clean Unit designation would have remained in effect for ten years, and could have been renewed after expiration. The benefit to the operator would have been that once a unit was certified as “clean,” the operator could make unlimited modifications without triggering NSR—even if those modifications resulted in substantial increases in pollution. The court struck down this exemption, finding that it “contravened the plain meaning of the [Clean Air Act] because it measures ‘increases’ in terms of Clean Unit status instead of actual emissions.”

The court also struck down the exemption for Pollution Control Projects (PCPs), which the EPA had defined as projects that reduce the emissions of one regulated pollutant, but increase emissions of a second pollutant. If the project, taken as a whole, could produce a net environmental benefit, then the EPA would have allowed the project to avoid NSR requirements, despite the emissions increase. The D.C. circuit, again relying on the plain meaning of the statute, held that the PCP exemption was unlawful. The court said, “EPA lacks authority to create an exemption from NSR by administrative rule.”
The final exemption struck down by the court would have allowed operators maintaining that they had “no reasonable possibility of a significant net emissions increase” to avoid keeping any “records at all—neither the data on which they based their projections nor records of actual emissions going forward.” The court found this recordkeeping exemption to be arbitrary and capricious, and remanded the provision to the EPA for further consideration. The court observed, “If EPA actually knew which sources had no ‘reasonable possibility’ of triggering NSR, these sources would obviously have no need to keep records. The problem is that the EPA has failed to explain how, absent record-keeping, it will be able to make that determination.” The EPA had argued that it could use its enforcement authority to ensure compliance with NSR. The court saw the obvious flaw in this reasoning: “EPA certainly has such inherent enforcement authority, but even inherent authority depends on evidence.”

Noting the great deference owed an agency implementing a highly “technical and complex” regulatory scheme, the court did find that two major aspects of the 2002 revisions were permissible interpretations of the Clean Air Act. Specifically, the court found that the EPA is entitled to define “net emissions increase” using a five or ten year look-back period to establish a unit’s baseline, preproject emissions. Additionally, the court found that Plantwide Applicability Limits were also permissible.

Before a construction project at a facility triggers NSR, there must be a “net emissions increase.” This is because Congress has defined an NSR-triggering “modification” to be “any...change in...a stationary source which increases the amount of any air pollutant emitted...” To determine whether there has been an increase in the “amount of any air pollutant emitted,” the operator calculates its plant’s emissions before a change—what is known as its baseline emissions—and compares that baseline to the predicted future emissions after the change. Under the old rule, the baseline would be set using emissions data from the two years immediately proceeding construction of a project to determine the baseline figures for all measured pollutants. The EPA changed the rule to allow power plants—known as electric utility steam generating units (EUSGUs)—to select the highest polluting two-year period out of the last five years of operation preceding the change.

For other types of industrial sources—non-EUSGUs—operators would be able to select the highest polluting consecutive two years from the last decade of operation. The new rule also allows sources to use different baseline periods for different pollutants. The D.C. circuit concluded that the Clean Air Act “is silent on how to calculate such ‘increases’ in emissions,” and held that the EPA’s revised definitions were reasonable interpretations of this ambiguous statutory term.

The D.C. circuit also deferred to the EPA on the creation of a Plantwide Applicability Limit, or PAL. As the name suggests, this exemption allows an operator to obtain a plantwide permit, instead of obtaining multiple, unit-specific permits for a single plant. (One power plant or industrial facility is typically composed of multiple major emissions units.) The court observed that environmental petitioners had not challenged “EPA’s authority to establish a PAL program” in theory, but had instead focused their arguments on a claim that the EPA acted arbitrarily and capriciously in designing this specific PAL exemption. The court followed its analysis on the “net emissions increase” issue, noting again that the Clean Air Act was “silent on how to calculate emissions increases.”

Virginia’s Proposed Changes
The Virginia State Air Pollution Control Board, with the assistance of the Department of Environmental Quality (DEQ), is in the process of deciding whether to incorporate any of all of the 2002 federal rule changes into the state’s regulations on New Source Review. Because of the Clean Air Act’s emphasis on “cooperative federalism,” Virginia does not have to follow the federal lead. On the contrary, the state is free to develop its own program so long as the state plan is at least as stringent as the federal regulations. In an effort to address Virginia’s unique air quality and enforcement needs, the DEQ has proposed several important modifications to the federal rule changes. While the draft revisions proposed by the DEQ would add exemptions that make it more likely sources will be able to avoid NSR despite undertaking projects that significantly increase pollution, they are nevertheless better tailored to meet Virginia’s needs than the EPA’s federal program.

For example, the DEQ has proposed changes to the definition for “net emission increase” that would move Virginia away from the current method of using the two-year period immediately preceding a change to establish baseline emissions. Instead, the DEQ would limit the look-back period for EUSGUs and non-EUSGUs alike to five years. This five-year look back would also apply to the Clean Unit, PCP and PAL exemptions. As stated above, the federal rule now allows EUSGUs to select the highest twenty-four-month emissions period in the previous five years, while permitting non-EUSGUs to look back ten years. Studies of the emissions histories of major pollution sources subject to NSR suggest that limiting the look-back period for all sources to five years will significantly limit the potential quantity of pollution increases that could result from changes to facilities without triggering NSR. In addition, the DEQ would maintain the current state requirement that sources use the same baseline period for all regulated pollutants rather than allow sources to vary baselines in order to capture the highest two years of emissions for each pollutant as permitted in the federal rule. Finally, the DEQ would add basic common-sense preconstruction notice, recordkeeping, reporting and enforcement provisions absent from the federal rules. The DEQ deems these requirements as necessary to ensure compliance with the NSR program for the same reasons the D.C. circuit found the absence of notice and record-keeping requirements in the federal rule to be arbitrary and capricious. Ultimately, the State Air Pollution Control Board will have to decide whether to final-
ize the DEQ’s draft changes. The D.C. circuit’s ruling in *New York v. EPA*, of course, will affect the board’s final decision. The Clean Unit and PCP exemptions, for example, will almost certainly need to be deleted from the Virginia program. The board is expected to consider all of these issues at its December 2005 meeting.

**The Importance of NSR to Virginia’s Air Quality**

As explained at the outset of this article, nearly five million Virginians live in areas that fail to meet EPA’s health-based air quality standards. New Source Review has a critical role to play in addressing this and other related problems. NSR is unique in that it is a proactive environmental program, giving states the ability to assess potential impacts of new pollution sources before they are constructed, and to ensure that sources can be accommodated within an area’s overall plan for maintaining or achieving healthy air. The DEQ recognizes the importance of NSR, and as a result is now seeking more effective tools than those provided in the 2002 federal rule.58 For the first time in decades, a major new regulatory scheme is on the horizon. 59

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**Endnotes:**

1 The New Source Review program has two components: the Prevention of Significant Deterioration and Nonattainment New Source Review programs. These programs are referred to throughout collectively as NSR.


4 Based on the 2002 emissions profile, the DEQ calculates that Virginia sources emit 473,075 tons of nitrogen oxides each year, 38 percent of which come from power plants and other industrial sources. Virginia sources emit 328,402 tons per year of sulfur dioxide, almost all of which—93 percent—are attributable to point sources. See Virginia Emissions Inventory Briefing, State Air Pollution Control Board (June 22, 2005).

5 Clean Air Task Force, *Dirty Air, Dirty Power: Mortality and Health Damage Due to Air Pollution from Power Plants* (June 9, 2004).


7 *Formmers Virginia* at 144 (7th Ed. 2004).


13 123 Cong. Rec. 18,022 (June 8, 1977).

14 636 F.2d 325 (D.C. Cir. 1979).


17 In December 2003, the EPA also finalized changes to the Equipment Replacement Rule. These 2003 changes relate to one exemption from NSR that would allow an operator to avoid installing pollution controls if a modification could be labeled “routine maintenance, repair, and replacement.” The “routine maintenance” exemption has long been a part of the NSR process, but the EPA dramatically expanded it in 2003. According to EPA officials with decades of experience, a project would traditionally qualify for the “routine maintenance” exemption if its total cost was within 0.75% of the generating unit’s value. See Bruce Barrett, “Up In Smoke: The Bush Administration, the Big Power Companies, and the Undoing of 30 Years of Clean-Air Policy,” *New York Times Sunday Magazine* at 73 (Apr. 4, 2004). Thus, on a $1 billion facility, an operator could reasonably spend $7.5 million a year on modifications and still qualify for the “routine maintenance” exemption. In its December 2003 rule, the EPA expanded this ceiling by more than 100 times, to 20 percent of a facility’s value. Under the expanded rule, an electric utility could spend $200 million a year on so-called “maintenance” that would significantly increase pollution—without triggering the requirements of the Clean Air Act.

18 In a separate action, these same petitioners also challenged the EPA’s 2003 rulemaking. Implementation of that rule has been stayed by the D.C. Circuit and, therefore, has not been sent out to the states for consideration.


20 Id. at 62.

21 Id. at 66.

22 Id. at 52.

23 Id. at 53-54.

24 Id. at 55.

25 Id. at 53.


27 The change for calculating baseline emissions for ELGU’s was adopted in the base federal program in 1992, but was never incorporated into Virginia’s program.


29 Id. at 57.

30 Id.


35 For example, a study of the emissions history of 169 industrial facilities in North Carolina that qualified as “major” pollution sources under NSR regulations showed that higher baselines resulting from a ten-year look-back period would allow these facilities to increase SO2 emissions by as much as 18,000 tons, VOC emissions by as much as 10,000 tons, and NOx emissions by as much as 7,000 tons, compared to a baseline using a five-year look-back, without triggering NSR. Mays, R., *Evaluation of Potential Air Pollution Increases Under a Revised Baseline Emissions Rule in North Carolina’s Proposed Revisions to the New Source Review Program, Comments of Southern Environmental Law Center, et al., Attachment I, Proposed Amendments to the Prevention of Significant Deterioration Rule, 15A NCAC 02D:05:20, and the Major New Source Review Rule for Nonattainment Areas, 15A NCAC 02D:05:31* (Sept. 15, 2004).


38 Statement of Robert G. Burnley, Director, Virginia Department of Environmental Quality, at the State Air Pollution Control Board Meeting, Glen Allen, Virginia (Mar. 2, 2005) (explaining the DEQ’s decision to deviate from the federal rule in the Virginia draft regulations).

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