Air Quality and Electricity: Enforcing New Source Review

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Summary

On November 3, 1999, the Justice Department filed seven lawsuits against electric utilities in the Midwest and South charging them with violations of the New Source Review (NSR) requirements of the Clean Air Act (CAA). In addition, the Environmental Protection Agency (EPA) issued an administrative order against the Tennessee Valley Authority (TVA), alleging similar violations. Through a "preconstruction" permitting process, NSR is designed to ensure that newly constructed facilities, or substantially modified existing facilities, do not result in violation of applicable air quality standards.

The suits represent a continuing effort by EPA to reduce pollution from existing sources, particularly coal-fired electric generating facilities. The primary pollutants of concern have been nitrogen oxides (NOx), and sulfur dioxide (SO_2). The question the EPA lawsuits raise is whether the specified facilities have engaged in rehabilitation actions that represent "major modifications" of the plants, in which case the CAA would require the installation of best available pollution control equipment. The crucial definition of "major modification" derives from an EPA ruling that a life extension project by Wisconsin Electric Power Company (WEPCO) triggered NSR requirements. Since 1992, after considerable litigation and congressional debate, the "test" to determine the applicability of NSR compares whether a facility's projected actual emissions after the modification are more than its actual emissions before the modification. Utilities argue that the "modifications" that EPA cites in the suits were just routine maintenance, which do not trigger NSR.

NSR is an attractive enforcement tool because EPA can ask the court to impose substantial monetary penalties, and to require a violating source to install best available control technology. Thus EPA states that these facilities could be required to reduce their emissions of sulfur dioxide and nitrogen oxides by 85 to 95%.

Because the CAA is a complex piece of legislation built up over time, however, the reductions that might result from successful prosecution of the NSR suits may not be completely realized. In the case of SO_2, any reduction achieved under NSR would interact with a cap on emissions set under title IV of the CAA; because of the system of tradable allowances established under title IV, reductions from NSR compliance might be shifted to unaffected facilities. The situation with respect to NOx is also confused, largely because of inconsistencies in EPA's new and existing source NOx regulations as a result of a partial remand of regulations by a court.

By seeking to enforce NSR requirements, EPA exploits an existing authority that holds the potential for reducing emissions. EPA clearly believes that some sources have been evading NSR requirements. However, the action appears to raise the classic enforcement issue: will the outcome be reduced emissions, or just costly litigation? The suits expose the complex interactions of NSR with other provisions of the CAA – complexities that might compromise air pollution reductions sought through the NSR suits. Knowledge gained through 30 years of CAA implementation suggests options for updating the Act's approach to regulating the utility industry's emissions; however, many of these require Congressional action to amend the Act.

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On November 3, 1999, the Justice Department filed seven lawsuits against electric utilities in the Midwest and South charging them with violations of the New Source Review (NSR) requirements of the Clean Air Act (CAA).[1] The seven utilities affected are American Electric Power (AEP), Cinergy, First Energy, Illinois Power, Southern Indiana Gas & Electric Company, Southern Company, Tampa Electric Company, or their subsidiaries. Filed on behalf of EPA, the lawsuits represent one of the largest CAA enforcement actions ever taken by EPA. Additional lawsuits have been filed by the State of New York and Connecticut (jointly), Vermont, and New Jersey against AEP,[2] and by a coalition of environmental groups also against AEP.[3] In addition, the Environmental Protection Agency (EPA) issued an administrative order against the Tennessee Valley Authority (TVA), alleging similar violations.[4]

Enacted as part of the 1977 CAA Amendments and modestly modified in the 1990 CAA Amendments, NSR is designed to ensure that newly constructed facilities, or substantially modified existing facilities, do not result in violation of applicable air quality standards. The NSR provisions establish permit requirements for constructing new major pollution sources as well as for making major modifications to existing major pollution sources. The specific requirements dictated by NSR depend on where the facility is sited. In attainment areas – those meeting the National Ambient Air Quality Standard (NAAQS) for a pollutant – the governing requirements are the Prevention of Significant Deterioration (PSD) provisions of the CAA. In non-attainment areas – those not in compliance with a NAAQS for one or more pollutant – the governing requirements are covered by non-attainment provisions. Some facilities can be subject to a combination of both, if the area is in attainment for some criteria pollutants,[5] but not others. Meeting these permitting requirements can be a long and complex process, depending on the specific project, the pollutants involved, and the specific state and federal regulatory authorities involved.[6] In 1996, EPA proposed changes to NSR to streamline it. However, the proposals have been subject to considerable controversy, and a final rule has not yet been issued.[7] These complexities and controversies, particularly with respect to major modifications of existing sources, become manifest in the enforcement suits filed by the Justice Department for EPA, and in the responses to them.

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[1] The lawsuits also allege violation of the major modification provisions of section 111, involving the New Source Performance Standards (NSPS). Copies of the lawsuits can be found at EPA's website: http://es.epa.gov/oeca/ore/aed/coal/index.html.

[2] *New York and Connecticut v. American Electric Power Co*., S.D. Ohio, No. C2-99-1182 (November 29, 1999).

[3] The environmental groups involved are the Natural Resources Defense Council (NRDC), Citizens Action Coalition of Indiana, the Clean Air Council of Pennsylvania, the Hoosier Environmental Council, the Izaak Walton League, the Ohio Citizen Action, the Ohio Public Interest Research Group, Ohio Valley Environmental Coalition, the Sierra Club, U.S. Public Interest Research Group, and the West Virginia Environmental Council.

[4] *In re TVA*, EPA, No. CAA-2000-04-0008 (November 3, 1999).

[5] Pollutants for which EPA has set NAAQS are often called "criteria pollutants" after the criteria documents EPA prepares for setting the standard. For background on NAAQS and the criteria air pollutants and how the CAA is structured to ensure attainment of clean air, see *Environmental Laws: Summaries of Statutes Administered by the Environmental Protection Agency*, CRS Report RL30022, pp. 7-13; and CRS Report 97-722, *Air Quality Standards: The Decisionmaking Process*, by (name redacted) and (name redacted).

[6] Many of the activities under the CAA, including many requirements specifically involving NSR, either reside with or can be and have been delegated to states (which can include territories, Indian tribal governments, and the District of Columbia). In essentially all cases, EPA can act in lieu of states to which authorities have not been delegated, or whenever states fail to take required actions.

[7] 61 *Federal Register* 38249-38344 (July 23, 1996).

The suits represent a continuing effort by EPA to reduce pollution from existing sources, particularly coal-fired electric generating facilities. The primary pollutant of concern has been nitrogen oxides (NOx), a criteria air pollutant that is also a precursor to ozone (itself a criteria pollutant), acid rain, fine particulates, and regional haze; other pollutants of concern include sulfur dioxide (SO_2), a criteria air pollutant and precursor to acid rain, fine particulates, and regional haze, and particulate matter (also a criteria air pollutant). Efforts by EPA and other groups to reduce these emissions have intensified recently both as a result of new regulatory proposals – to increase the stringency of the ozone and particulate NAAQS[8] and to reduce haze[9] – and as a result of the restructuring of the utility industry which some fear may result in increased emissions from existing plants.[10]

EPA's recent enforcement action raise several questions with respect to the NSR and efforts to further control emissions from existing sources. Three of them are discussed in this report: Why is EPA taking this action? Why use the NSR provisions? How does the NSR interact with other EPA actions currently underway?

Why EPA's Enforcement Action?

> *"The EPA believes that there should be a significantly higher rate of NSR permits authorizing the construction of new or expanded facilities than is currently taking place."*[11]

The CAA requires a preconstruction review of, and a permit for, almost any major modification of an air polluting source or any major new source. Assuming that a state has an EPA-approved State Implementation Plan (SIP), which spells out the state's strategy for complying with NAAQS, regulatory approval to construct the new source or modify the existing source must come from the appropriate state agency. To receive this "Permit to Construct," the applicant must show that the proposed source or modification will not result in, or exacerbate, violation of a NAAQS, either locally or downwind. In addition, applicants must show that their proposal will not result in local or downwind exceedences of increments of increased air pollution allowed under Prevention of Significant Deterioration (PSD) regulations in areas complying with NAAQS. It is this preconstruction review process that is called New Source Review (NSR).[12]

The NSR process is triggered for any new source that potentially could emit 100 tons annually (or less in some areas[13]) of any criteria air pollutant, and by any modification that will cause a

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[8] See John E. Blodgett and Larry B. Parker, *Air Quality Standards: EPA's Final Ozone and Particulate Matter Standards*, CRS Report 97-721 ENR.

[9] See (name redacted), John E. Blodgett, and Larry B. Parker, *Regional Haze: EPA's Proposal to Improve Visibility in National Parks and Wilderness Areas*, CRS Report 97-1010 ENR.

[10] For more information on air quality and electricity restructuring, see: (name redacted) and (name redacted), *Electricity Restructuring: The Implications for Air Quality*, CRS Report 98-615 ENR (July 16, 1999).

[11] Steven A. Herman, Assistant Administrator for Enforcement and Compliance Assurance, EPA. Letter to Chairman Inhofe (March 26, 1999), p. 2.

[12] Some restrict the term "NSR" to the review process in a non-attainment area only; the review process in an attainment area being called "PSD pre-construction review". This paper will use the term to indicate both. In addition, new and modified sources must meet New Source Performance Standards (NSPS).

[13] Title I of the 1990 CAA Amendments reduced the threshold definition of a major source for areas of the country substantially out of compliance with ambient air quality standards for ozone, carbon monoxide, and particulate matter.

significant increase in annual emissions (regulatorily defined as 40 tons for SO_2 and NOx[14]). The specific NSR requirements for affected sources depend on whether the sources involved are subject to the PSD or the non-attainment provisions.[15] If covered by PSD, the source is required to install Best Available Control Technology (BACT), which is determined on a case-by-case basis, and which cannot be less stringent than the federally determined New Source Performance Standard (NSPS) for that pollutant. If covered by non-attainment provisions, the source is required to install Lowest Achievable Emission Rate (LAER) and obtain applicable offsets for that particular area.[16] Like BACT, LAER must not be less stringent than the federal NSPS.

Despite the breadth of coverage suggested by NSR, few preconstruction permits have been issued to coal-fired power plants over the program's history.[17] If this situation is examined from the perspective of new construction, the lack of permits is not too surprising. Current U.S. coal-fired electric generating capacity is about 300,000 megawatts (MW), and has remained steady at that level for the last ten years.[18] As indicated in **Table 1**, additions to coal-fired capacity, while greater than retirements, have not been significant. Capacity that began operation between 1989-1998 constitutes about 3% of total current coal-fired capacity.

Table 1. Capacity Additions and Retirements: 1989-1998

(net summer capacity)

Year	Capacity Additions (MW)	Retirements (MW)
1989	1,967	379
1990	3,063	175
1991	792	377
1992	498	254
1993	0	104
1994	540	461
1995	1,036	2
1996	1,611	16
1997	0	293
1998	0	2
Total 1989-1998	9,507	2,063

Source: Energy Information Administration, *Inventory of Power Plants in the United States*, various years.

[14] 40 CFR 52.24

[15] It should be noted that a source can be affected by the PSD requirements for one pollutant, and by the non-attainment requirements for another pollutant.

[16] For details on these provisions and their requirements, see *Clean Air Act, Part C – Prevention of Significant Deterioration of Air Quality, sections 160-169;* and, *Part D – Plan Requirements for Nonattainment Areas, sections 171-178.*

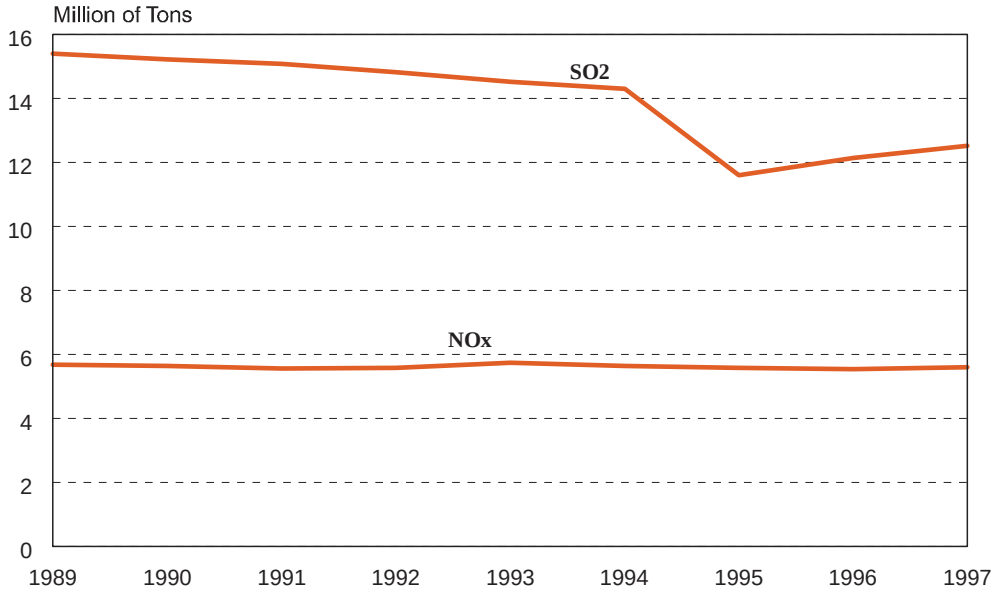
[17] Letter to Chairman Inhofe, p. 2.

[18] Data represent net summer capacity. Energy Information Administration, *Annual Energy Review 1998*, DOE/EIA-0384(98) (July 1999), p. 219.

At first glance, emissions trends for electric utilities appear to confirm the generally static situation with respect to coal-fired capacity. As shown in **Figure 1**, emissions of NOx from coal-fired electric generating facilities have remained constant over the last ten years. In contrast, SO_2 emission trends indicate a significant drop in emissions in 1995, the first year of the acid rain control program under title IV of the 1990 CAA Amendments. Under title IV, 111 powerplants were required to reduce their emissions by about 30% from baseline levels specified in the title. In addition, many units were required to install Low-NOx burners to reduce NOx emissions.[19] According to EPA, the affected phase 1 units emitted about 10 million tons of SO_2 in 1990, a number reduced to 5.3 million tons in 1995. Likewise, the NOx provisions reduced emissions from these plants in 1996 by about 0.4 million tons from their 1990 levels.[20]

However, comparing the reductions achieved under title IV with the trends indicated in **Figure 1** shows that some of the title IV reductions have been offset by increases in emissions from other plants: specifically, while title IV caused a 4.7 million ton SO_2 reduction by 1995, emissions data indicates that overall emissions only went down about 3.6 million tons, as shown by **Figure 1**; likewise, while title IV led to a 0.4 million ton reduction in NOx by 1996, **Figure 1** reveals an overall reduction of only about 0.1 million tons. This slippage is not surprising as phase 1 does not cover all coal-fired facilities, but it does imply that within the relatively flat trends for coal-fired capacity and for air emissions, there are some sources of increasing emissions.

Figure 1. SO2 and NOx Emissions from Coal-Fired Electric Generating Facilities



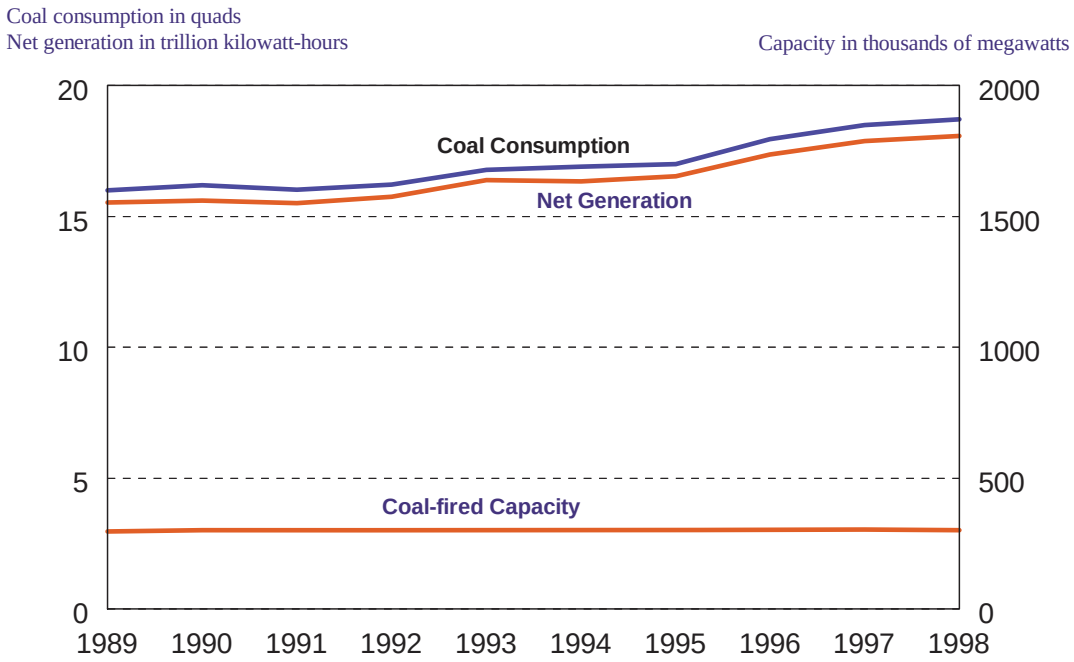
The dynamism in coal-fired generation is the continuing operation of existing coal-fired facilities. As indicated by **Figure 2**, despite the general lack of new plant construction, coal-fired electricity generation and related coal consumption has continued to climb over the past decade. This

[19] Because of regulatory delays, the NOx requirement was not implemented until 1996.

[20] U.S. EPA, *Acid Rain Program: Technology and Innovation* (May 1996); EPA, 1996 *Compliance Report: Acid Rain Program* (June 1997). Compliance reports for 1997 and 1998 are also available.

increase results from utility efforts to optimize performance of existing coal-fired facilities despite their increasing age. Historically, as plants age they become less reliable and less efficient, leading utilities to derate them and move them from baseload to cycling duties. However, as indicated in **Table 2**, contrary to historical expectations, utilization of coal-fired capacity has increased over the past decade, and the efficiency of units has not decreased.

Figure 2. Coal-Fired Capacity, Generation, and Coal Consumption: 1989-1998



This suggests that the economics of plant maintenance has changed fundamentally over the past decade or so, making it economic for utilities to spend more to maintain their coal-fired capacity than was the case previously. The question the EPA lawsuits raise is whether these efforts to maintain or even to expand generation from existing coal-fired facilities – compared to the degradation of capacity that would be expected – represent "routine maintenance" or a "major modification" of those facilities under the CAA. If such maintenance does represent a "major modification," then the CAA would require the installation of pollution control equipment; "routine maintenance," on the other hand, would not trigger the requirement for new controls. With the restructuring of the electric utility industry placing ever-greater focus on plant economics, this issue is likely to intensify in the future.[21]

Table 2. Coal-fired Generation Capacity Factors and Heat Rates: 1989-1998

(based on net summer capacity)

Year	Capacity Factor	Heat Rate
1989	59.8%	10,290

[21] See: (name redacted) and (name redacted), *Electricity Restructuring: The Implications for Air Quality*, CRS Report 98-615 ENR (July 16, 1999).

Year	Capacity Factor	Heat Rate
1990	59.4%	10,378
1991	59.1%	10,335
1992	59.9%	10,286
1993	62.2%	10,244
1994	62.0%	10,336
1995	62.8%	10,278
1996	65.6%	10,334
1997	67.6%	10,347
1998	68.7%	10,354

Source: Net summer capacity, net generation, coal consumption data from Energy Information Administration, *Annual Energy Review 1998* (July 1999).

Why NSR?

> *"There are signs that many utilities will not use the term "life extension" to describe their spending on old power plants, even though extended life is one of the major goals of the spending program.*
>
> *"The reason for the aversion to the term lies in the 1970 Clean Air Act. That federal law requires all power plants constructed after August, 1971 to restrict emissions of air pollutants such as sulfur dioxide. Plants built prior to 1971 are exempt, which includes most of the early candidates for life extensions. The problem is that the law also says that grandfathered plants can lose their exemption if they are "modified" or "reconstructed" in a major way and emission of proscribed pollutants are increased."*[22]

Currently, there is considerable regulatory activity (and judicial response) with respect to electricity generation and air quality. Regulatory activities include the Ozone Transport Rule (also called the NOx SIP Call), several Section 126 Petitions, a Regional Haze Rule, new NAAQS for Fine Particulates and a revised Ozone NAAQS, a new NSPS for NOx for electric utilities, initiatives by the Ozone Transport Commission, and several legislative initiatives. Why add NSR enforcement to the list?

As the primary permitting vehicle for stationary sources, NSR is also a primary enforcement tool. Thus, the Department of Justice/EPA lawsuits under NSR represent an attempt to enforce existing laws and regulations, not add new ones. In this sense, the NSR actions are fundamentally different from the activities listed above. Indeed, a different office within EPA handles enforcement as opposed to regulatory development. EPA has explicitly stated that the enforcement action under NSR is not linked or tied with the regulatory activities listed above.[23]

[22] Robert Smock, Editor, "Power Plant Life Extension Trend Takes New Directions," *Power Engineering* (February 1989), p. 21.

[23] Steven A. Merman, Letter to Chairman Inhofe (March 26, 1999), p. 3.

According to EPA, the action results from an examination of coal-fired utilities that commenced in late 1996.[24]

As an enforcement tool, NSR is attractive because of the remedial actions EPA can seek the court to impose on affected utilities. Besides substantial monetary penalties, EPA can ask the court to require an affected source that violates NSR to install the most recent BACT at its facilities. For SO_2, this would involve meeting the percentage reduction requirement promulgated by EPA in 1978. This requirement generally involves installing flue-gas desulfurization (FGD) units (commonly called scrubbers) on coal-fired utility boilers. Likewise, EPA recently promulgated a new NOx NSPS for new utility boilers; if this were imposed on existing boilers that EPA alleges have been modified, it could require them to install selective catalytic reduction (SCR) units in order to comply. These control devices would reduce emissions by about 70-90% depending on the specific case.

For EPA, these controls could lead to substantial reductions in SO_2 and NOx emissions. Noting that the powerplants named in the lawsuits would emit 2.2 million tons of SO_2 and 0.66 million tons of NOx in 2000, Administrator Browner stated:

> Controlling the sulfur dioxide and nitrogen oxides from these plants could lead to an 85 to 95 percent reduction respectively in these pollutants. Taken together, these reductions would be the equivalent of taking 26 million cars off the road and reduce acid rain by an estimated 15 percent.[25]

Besides the potential payoff in terms of emissions reductions, the focus on NSR reflects a belief that continuing operation of aging coal-fired plants is not a short-term event, but a wave of the future under electric utility restructuring. As indicated in a previous CRS analysis, extending the life of existing coal-fired capacity is a very cost-effective alternative to constructing new capacity.[26] The more competitive generating market of a restructured industry could further encourage the existing trend to renovate existing coal-fired capacity. One means of mitigating the environmental effects of such a trend would be to require BACT on such facilities through NSR.

Why Not Earlier?

> *"The agency [EPA] is bringing legal actions against the utilities for the very maintenance activities it has approved implicitly for nearly three decades."*[27]

The trend toward renovating existing coal-fired capacity is not new, but an increasing trend in the industry for almost two decades.[28] Likewise, the potential emissions impact of such life extension

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[24] Steven A. Merman, Letter to Chairman Inhofe, Answer to Questions #5 and #6 (March 26, 1999), p. 14.

[25] Carol M. Browner, Administrator, EPA, "Remarks Prepared for Delivery," Clean Air Enforcement Press Conference, (Washington, D.C.: November 3, 1999), p. 2.

[26] (name redacted) and (name redacted), *Electricity Restructuring: The Implications for Air Quality*, CRS Report 98-615 (ENR, July 16, 1999).

[27] Edison Electric Institute, *Straight Talk About Electric Utilities and New Source Review* (January 2000), p. 11.

[28] As CRS noted in 1985: "However, over the last five years, it has become apparent that the actual lifespan of powerplants is not set, but relatively elastic. With new powerplants costing over $1000 a Kilowatt to construct, utilities have powerful incentives to avoid construction and to rehabilitate older facilities instead. This incentive is partially reinforced by environmental regulations which permit facilities to be rehabilitated up to 50 percent of their assessed (continued...)

efforts were also recognized early in this time period.[29] However, it wasn't until October 1988 that EPA made a serious attempt to enforce NSR on existing coal-fired electric generating facilities.

This apparent difficulty in enforcing NSR for existing coal-fired facilities could be ascribed to several causes, including EPA budget constraints and priorities. However, the primary substantive difficulty with NSR has been the definition of a major modification. The CAA first used the term "modification" in the 1970 CAA Amendments with respect to the NSPS program. The Act defined modification as "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted."[30] In subsequent regulations, EPA defined modification as any physical or operational change that resulted in any increase in the maximum hourly emission rate (kilograms per hour) of any controlled air pollutant.[31] In addition, EPA regulations stated that any replacement of existing components that exceeded 50% of the fixed capital costs of building a new facility placed the plant under NSPS, regardless of any change in emissions.[32] With the advent of NSR in 1977, a different approach to defining modification was appropriate as the focus was shifted from enforcing NSPS emission rates to compliance with NAAQS and PSD. In promulgating regulations for the PSD and non-attainment programs, EPA defined "significant" increase in emissions in terms of tons per year emitted by a major source. For sulfur dioxide and nitrogen oxides, the threshold is 40 tons.[33] Facilities that exceed that threshold are subject to NSR.

Enforcing these thresholds has been more difficult than their apparent clarity would suggest. EPA's thresholds for the NSPS program generally represent no practical constraint on life extension efforts by utilities. Most life extension efforts improve the availability and reliability of generating units, not their capacity to generate. Thus, their maximum hourly emission rate would not change. Likewise, most life extension efforts cost far less than the 50% asset value threshold.

NSR review has a far more sensitive trigger – a tonnage increase in pollutant output. Because life extension does improve availability and reliability, it is likely to increase emissions over levels emitted before the life extension activities were undertaken. But how does one measure the change? What are the baselines[34]?

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value without being required to install NSPS (i.e., scrubbers). With such rehabilitation estimated at about $500 a kilowatt (although that number can vary substantially, operating existing facilities for upwards of 60 years seems to be a developing trend." Larry B. Parker, John E. Blodgett, Alvin Kaufman, and Donald Dulchinos, *The Clean Air Act and Proposed Acid Rain Legislation: Can We Get There from Here?* CRS Report 85-50 ENR (February 21, 1985), p. 46.

[29] See U.S. Congress, Office of Technology Assessment, *Acid Rain and Transported Air Pollutants: Implications for Public Policy*, OTA-O-204 (June 1984), pp. 61-62: Larry B. Parker, John E. Blodgett, Alvin Kaufman, and Donald Dulchinos, *The Clean Air Act and Proposed Acid Rain Legislation: Can We Get There from Here?* CRS Report 85-50 ENR (February 21, 1985), pp. 49-59; Larry B. Parker and Alvin Kaufman, *Clean Coal Technology and Acid Rain Control: Birds of a Feather?* CRS Report 85-207 ENR (October 23, 1985), pp. 21-40.

[30] CAA, section 111(a)(4), 42 USC 7411(a)(4).

[31] 40 CFR 60.14(a) (1975).

[32] 40 CFR 60.15 (1975).

[33] For PSD, see 40 CFR 52.21(b)(23)(i); for nonattainment, see 40 CFR 52.24(f)(10)

[34] Defining the baseline has been a key issue. Every powerplant has what is called "nameplate" capacity, which indicates its theoretical size; but the actual output is defined by its "operating capacity," which is determined by the engineering and operational details of the individual plant. Moreover, from an engineering perspective, the operating (continued...)

These issues came to a head in the late 1980s when EPA decided to enforce NSR against facilities undergoing life extension efforts. In 1988, the EPA ruled that a life extension project by Wisconsin Electric Power Company (WEPCO) met the trigger for NSR because of the potential for increased emissions from the facilities after the project compared with actual emissions from the facilities before the project. After considerable litigation[35] and congressional debate, EPA modified this "actual to potential" emissions trigger with respect to electric utilities in 1992.[36] The new "test" to determine the applicability of NSR compares a facility's actual emissions before the modification with its projected actual emissions after the modification ("actual to future actual"). Specifically, "actual emissions" equal the facility's average emission rate during a 2-year period out of the preceding 5 years before the proposed change. "Future actual" is the product of the facility's projected emission rate after the change and its projected actual utilization based on historical and other data. These are the current NSR regulations for utility plants.

Utilities also responded to EPA's interest in their life extension activities. In defining a modification under NSR, EPA excludes maintenance, repair, and replacement that it considers "routine." In addition, increases in production rates that do not involve capital expenditures do not constitute a modification. Responding to this situation, utilities began to spread out their life extension efforts in an attempt to make them fit into their routine maintenance schedules. Indeed, the term "life extension" has fallen out of the professional literature, replaced with terms like capital improvement, performance improvement and unit integrity, condition assessment, life operation management, review of continued operating requirements, and asset management.[37] The commonly used term currently is rehabilitation program.[38] By spreading out the life extension efforts and integrating them into facilities' operation and maintenance schedules, the distinction between "modification" and "routine maintenance" is effectively blurred, and arguably, eliminated.

What has EPA done?

> *"We expect no early resolution."*[39]

The Justice Department's lawsuits (on behalf of EPA) represent an attempt to enforce the New Source Review requirements of the Clean Air Act with respect to (1) instances of "new construction" of coal-fired capacity by investor-owned utilities and (2) instances in which changing investor-owned utility strategies for managing existing coal-fired facilities become

(...continued)

capacity declines over time as a result of boiler deterioration, pipe clogging, and other predictable changes due to use. The issue is, then, what level of capacity restored by renovations trigger NSR: only renovations that increase capacity beyond the facility's nameplate capacity? those that increase capacity beyond the *original* operating capacity? those that increase capacity above an engineering-defined capacity that projects declines over time? Or those that increase potential emissions above the actual emissions before the modification?

[35] *Wisconsin Electric Power Company v. Reilly*, 893 F.2d 901 (7th Cir. 1990)

[36] 57 *Federal Register* 32314-32339 (July 21, 1992).

[37] Robert G. Presnak and Bock H. Yee, "Life Extension: The Benefits are Real," *Power Engineering* (December 1993), pp. 25-27

[38] For a current view of managing existing facilities, see Jason Makansi, "Rehab: Get the Most from the Existing Asset Base," *Power* (June 1999), pp. 30-40.

[39] Statement of David Flanney, Midwest Ozone Group, reported in "Utility Suit to Drag in 2000," *Air Daily* (January 3, 2000), p. 1.

"modifications" that in EPA's view trigger the applicability of the WEPCO rules. In addition, EPA has issued a "Compliance Order" concerning instances of modifications by the Tennessee Valley Authority of its coal-fired power plants that EPA believes should have triggered new source reviews. **Tables 3, 4** and **5** identify the facilities the Justice Department/EPA have cited as violating NSR requirements and briefly note some of the kinds of rehabilitations that EPA views as triggering the "modification" criterion for NSR. These tables are based on the original complaints (see footnotes 1 and 4). The Justice Department/EPA has said that these complaints may be modified (typically to add new allegations) and that additional complaints may be issued as the agency's investigations proceed.[40]

Table 3. Alleged New Construction Cited in DOJ/EPA Complaints

Facility	Charged with failure to obtain a PSD permit and to apply BACT	Charged with failure to comply with NSPS Sub-part Da, e.g., to conduct a performance test
Alabama Power & Southern Company Services, Inc., Miller Unit 3	X	X
Alabama Power & Southern Company Services, Inc., Miller Unit 4	X	X
Georgia Power & Southern Company Services, Inc., Scherer Unit 3	X	X
Georgia Power & Southern Company Services, Inc., Scherer Unit 4	X	X

Table 4. Alleged "Modifications" Cited in DOJ/EPA Complaints

Facility	Charged with failure to obtain a PSD permit and to apply BACT	Charged with failure to comply with NSPS Sub-part Da, e.g., to conduct a performance test
Alabama Power and Southern Company Services, Inc., Barry	X (specifically citing "a new design spiral fin economizer in Unit 5")	
Alabama Power and Southern Company Services, Inc., Gorgas	X (specifically citing "(1) a balance draft conversion in 1985; and (2) installation of a new design spiral fin economizer in 1994 and a major upgrade of air heaters in 1994")	
Georgia Power and Southern Company Services, Inc., Bowen	X (specifically citing a "new economizer in Unit 2")	
AEP Service Corp. and Indiana Michigan Power, Tanners Creek Plant	X (specifically citing 5 sets of modifications, including ones involving Units 3, 4, and 5)	

[40] E.g., see "Justice Department Amending Complaints in NSR Suit," *Air Daily*, vol. 7, no. 17 (Jan. 25, 2000), 1.

Facility	Charged with failure to obtain a PSD permit and to apply BACT	Charged with failure to comply with NSPS Sub-part Da, e.g., to conduct a performance test
AEP Service Corp. and Ohio Power, Muskingum River Plant	X (specifically citing 8 sets of modifications, which involve Units 1 through 5)	X (specifically citing 5 modifications, including ones involving Units 3, 4, and 5)
AEP Service Corp. and Ohio Power, Mitchell Plant	X (specifically citing 5 modifications, involving Units 1 and/or 2)	
AEP Service Corp. and Ohio Power, Cardinal Plant	X (specifically citing 7 modifications, involving Units 1 and/or 2)	X (specifically citing 5 modifications, involving Units 1 and/or 2)
AEP Service Corp., Appalachian Power, Ohio Power, and/or Central, Philip Sporn Plant	X (specifically citing 5 modifications, including ones involving Units 1 through 5)	
PSI and/or Cinergy, Cayuga Plant	X (specifically citing 5 modifications, including ones involving Units 1 and/or 2)	X (specifically citing the replacement of economizers on Units 1 and 2)
CG&E and/or Cinergy, Beckjord Plant	X (specifically citing 5 modifications, including ones involving Units 1 through 5)	
Southern Indiana Gas and Electric Company, Culley Station	X (specifically citing 4 modifications, involving Units 1, 2, and 3)	X (specifically citing "replacement activities" at Unit 3)
Illinois Power Company, Baldwin Power Station	X (specifically citing 7 modifications, involving Units 1, 2, and/or 3)	X (specifically citing "replacement activities" at Units 1 and 2)
Ohio Edison Company, Pennsylvania Power Company, subsidiaries of FIRSTENERGY Corp., Sammis Station	X (specifically citing 11 modifications, one or more involving each of Units 1 through 7)	X (specifically citing replacement of Unit 6's burners in 1992 and of its coal pulverizers in 1998)
Tampa Electric Company, Big Bend	X (specifically citing replacement of steam drum internals in Unit 1 in 1994 and in Unit 2 in 1991; and the waterwall, and high temperature re-heater in Unit 2 in 1994)	
Tampa Electric Company, Gannon	X (specifically citing 1996 furnace floor replacement in Unit 3 and 1994 cyclone replacement in Unit 4)	

Table 5. Tennessee Valley Authority: Compliance Order

TVA Facility	Charged with failure to obtain a PSD permit	Charged with failure to comply with NSPS Sub-part Da, e.g., to conduct a performance test
Paradise, Units 1, 2, & 3	X (specifically citing replacement of the cyclones, lower furnace walls, and floor in 1985)	X, Paradise Unit 3
Colbert Unit 5	X (specifically citing re-habilitation and modifi-cation of boiler, turbine, and controls in 1982)	X

TVA Facility	Charged with failure to obtain a PSD permit	Charged with failure to comply with NSPS Sub-part Da, e.g., to conduct a performance test
Widows Creek Unit 5	X (specifically citing the replacement of the reheater and secondary superheater crossovers and elements in 1989)	
Allen Unit 3	X (specifically citing the replacement of the reheater in 1991-2)	
John Sevier Unit 3	X (specifically citing the replacement of all waterwall and burner wall tubes, and of superheater platen elements in 1988)	
Cumberland Units 1 & 2	X (specifically citing the replacement of front and rear secondary super-heater outlet headers and of the inlet terminal tubes and main steam piping tee in 1993)	
Bull Run Unit 1	X (specifically citing the replacement of the secondary superheater outlet pendant elements and of all economizer elements in the "A" and "B" furnace in 1987)	

Basically, each of the complaints against investor-owned facilities seeks injunctive relief and civil penalties of up to $25,000 per day of violation. The injunctive relief typically calls for the defendants to comply in the future with all CAA requirements; and to remedy any past NSR violations by installing BACT as appropriate, to apply for permits, and to audit operations to assure compliance with all NSR requirements. For TVA, EPA's compliance order asks TVA to develop a schedule for meeting all applicable requirements affecting the facilities specified, to audit all its coal-fired power plants to determine NSR compliance and to develop a schedule for remedying any noncompliance discovered during the audit, and to retire SO_2 allowances equal to any SO_2 reductions that result from complying with the order.

The industry's response to EPA's enforcement action has focused on an exemption under NSR for "routine maintenance." NSR regulations state that a major modification does not include "routine maintenance, repair, and replacement."[41] The industry argues that although EPA has never explicitly defined this phase, EPA has over the past 20 years not objected to utilities engaging in those very activities that are now being cited in the complaints as triggering NSR. Industry further asserts that these activities were well-publicized in journal articles and government reports.[42] In effect, industry is charging EPA with changing the rules in the middle of the game. On the substance of the issue, the industry argues that the activities cited as violating NSR are nothing more than those necessary to meet its responsibilities to provide for the reliable, safe, and efficient operation of its plants through proper maintenance practices – analogous to replacing

[41] 40 *CFR* 52.21(b)(2)(iii)(a)

[42] For a review of industry's position, see Edison Electric Institute, *Straight Talk About Electric Utilities and New Source Review*, Edison Electric Institute (January, 2000).

worn tires on a car. That these activities might serve to extend the life of the powerplants is coincidental, and thus should not trigger the major modification criterion of NSR.

What Could the NSR Enforcement Action Accomplish in Terms of Emission Reductions?

> *"Emissions cannot exceed the cap.*
>
> *"Emissions won't be below the cap either – allowances not used at one source will be emitted somewhere else.*
>
> *"If you still apply NSR to sources under the cap, other sources will produce the pollution avoided by the source subject to NSR. This will all occur at a higher cost."*[43]

In announcing the NSR suits, the EPA Administrator states that "controlling the sulfur dioxide and nitrogen oxides from these plants could lead to an 85 to 95 percent reduction respectively in these pollutants."[44] Based on her statement, this would reduce SO_2 emissions by 1.87 million tons and NOx emissions by 0.63 million tons. (Compared to the slippage of title IV reductions noted earlier, these cuts in emissions would more than compensate for the erosion in the original title IV reductions: for SO_2, by about 50% more than the slippage, and for NOx, by about double the slippage.) Also, given the widespread nature of life extension efforts, it is reasonable to assume that further reductions would be achieved as other utilities either installed BACT or retired their offending facilities. Thus, at first glance, it would appear that very substantial emission reductions could be achieved by EPA's NSR action.

However, the CAA is a complex piece of legislation built up over time. In the case of SO_2 any reduction achieved under NSR would interact with reduction requirements under title IV – a SO_2 reduction program designed with different premises than NSR. Specifically, title IV limits total SO_2 emissions from utilities to 8.9 million tons beginning in the year 2000, with interim reductions required in 1995. The cap is enforced through tonnage limitations at individual existing utility plants and by an emission offset requirement for new facilities. SO_2 emissions from most existing sources are capped at a specified emission rate times a historical (1985-1987) average fuel consumption level. Thus the tonnage limitation is based on preset and historical data, not regulatory limits. To implement the program, title IV created a comprehensive emissions allowance system. An allowance is a limited authorization to emit a ton of SO_2 during or after a specified year. Issued by EPA, allowances are allocated to existing facilities in accordance with the emission rate/fuel consumption formulas detailed in the law. Such allowances may be used at the plant they are allocated to, or be traded or banked for future use or sale. The program has been very successful with 100% compliance.

This 1990 CAA Amendments program does not integrate well with the 1977 CAA Amendments NSR program. Except that they both focus on existing facilities and SO_2, they have little in common. The NSR is concerned with modifications at existing facilities and installation of

[43] Environmental Protection Agency, OAQPS, "An Emissions Cap Alternative to New Source Review" (September 27, 1999), p. 8.

[44] Carol M. Browner, Administrator, Remarks Prepared for Delivery, Clean Air Enforcement Press Conference (Washington, D.C.: November 3, 1999).

BACT. Title IV doesn't address whether existing facilities continue operation or not, or whether a specific facility installs BACT or not; compliance with the cap is the determining criterion. NSR is an enforcement mechanism to assure compliance with individual plant standards; title IV is a program to reduce aggregate SO_2 emissions by permitting utilities considerable flexibility in determining appropriate compliance strategies.

The current SO_2 NSPS, the "floor" for any BACT or LAER determination, is a percentage reduction requirement that reduces SO_2 emissions by 70%-90%, depending on the coal burned. However, the allocations under title IV for existing coal-fired facilities is not as stringent and can be met with low-sulfur coal. Thus, any facility that installed BACT under NSR would "overcontrol" SO_2 under title IV, and, therefore, have excess allowances available for sale or to bank for future sale. Because of this, any reductions achieved because of NSR enforcement could be rendered moot by title IV, if the affected plant subsequently sold its SO_2 reduction to some other facility not covered by a NSR action.[45] Except for any TVA reductions, the net result would be no reductions, at least theoretically. There is also no provision in title IV for adjusting allowance allocations as a result of NSR enforcement. Indeed, the law is explicit in that its allowance allocations are based on historical data, not on any presumption of compliance with NSPS or SIP requirements. To avoid this "allowance trap," either Congress would have to change the law, or utilities would have to voluntarily agree to surrender the excess allowances created by the NSR action.

The situation with potential NOx reduction is more complex. First, there is the interaction of NSR and the NOx NSPS. Unlike the very stringent SO_2 NSPS, the NOx NSPS historically has not reflected the cutting edge in technology development.[46] Until the new standard was set in 1998, the NOx NSPS for coal-fired facilities was 0.6/0.5 lb. of NOx per million Btu of heat input, depending on the type of coal burned. This standard, set in 1979, could be met with fairly simple combustion modifications or low-NOx burners, and did not require the installation of pollution control devices such as selective catalytic reduction (SCR). Indeed, the standard did not reflect the state of the art with respect to low-NOx burners.

In 1998, EPA promulgated a new NOx NSPS for coal-fired facilities of 0.15 lb. of NOx per million Btu – a standard more in line with available technology. However, this new standard was challenged in court. In September, 1999, the D.C. Court of Appeals vacated the new NOx NSPS with respect to modified utility boilers, while upholding the NSPS with respect to new sources.[47] By vacating the modified standard, the NSPS for modified sources returns to the previous 1979 standard until such time as EPA proposes a revised NSPS. As a result, the floor for determining BACT or LAER for modified coal-fired sources is unclear at the current time. If the floor is the current modified NSPS as set in 1979, reductions achieved by NSR enforcement would be considerably less than anticipated by EPA. In contrast, if the floor is the new 1998 NSPS, the reduction would be substantial, as suggested by EPA.

[45] The TVA Compliance Order would require retirement of allowances equal to any SO_2 reductions achieved as a result of the compliance order.

[46] (name redacted), *Nitrogen Oxides and Electric Utilities: Revising the NSPS*, CRS Report 96-737 ENR (October 13, 1998).

[47] *Lignite Energy Council v. Environmental Protection Agency*, Order No. 98-1525, D.C. Court of Appeals (September 21, 1999).

The confusion is exacerbated by the interaction of NSR and title IV. The NOx reduction program under title IV differs substantially from the SO_2 program. Like the NSPS program, the title IV NOx program is based on emission rates, not tonnage limitations. The difference is that the emission rate for the title IV program is set for existing facilities to be achieved in 1995 or 2000 (depending on the facility), regardless of whether the facility is modified or not. In addition, the rate limitation for most boilers under title IV is 0.45 to 0.5 lb. per million Btu, or more stringent than the 1979 NOx NSPS. Thus, you have the curious situation of some existing coal-fired facilities having emission controls since 1995 that are more stringent than the existing NSPS – a situation that continues currently with the court action on the modified NSPS.

Surveying BACT determinations over the time period 1991-1995 sheds no light on what BACT might be currently: data indicate permitted emission rates ranged from 0.15 to 0.5 lb. per million Btu.[48] Thus, it is difficult at the current time to project what any actual NOx reduction would be achieved by EPA's NSR action.

What Are the Alternatives?

"EPA Offers Utilities Off-Ramp From NSR 'Highway to Hell'"[49]

By seeking to enforce NSR requirements, EPA exploits an existing authority that holds the potential for reducing emissions. EPA clearly believes that some sources have been evading statutory requirements. However, according to some, the action appears to raise the classic enforcement issue: will the outcome be reduced emissions, or just costly litigation consuming agency and utility resources that might be more effectively invested in other pollution controlling activities?

NSR was one approach that the Clean Air Act took to control emissions from existing sources, but arguably more efficient and more effective methods to ensure declining emissions from existing sources over time have been developed since NSR provisions were added to the CAA in 1977. For example, title IV of the CAA, enacted in 1990, explicitly and substantially reduces SO_2 and NOx emissions from existing utility plants. In fact, title IV reduced more SO_2 emissions from coal-fired electric generating facilities in its first year of implementation (1995) than NSR has in its 20 years of existence. The "cap and trade" program has had 100% compliance (indeed, substantial over-compliance); the implicit logic of EPA's lawsuits suggests NSR's compliance has been near zero. The title IV program began without significant delays (SO_2 program on-time, NOx program 1 year late); the EPA lawsuits could take years to resolve with uncertain results.

A first alternative is to expand and build on the success of title IV's cap and trade program. If the object of NSR enforcement is to reduce SO_2 emissions from coal-fired powerplants, the most straightforward alternative would be to lower the cap on such emissions contained in title IV. The practical effect of the 1990 SO_2 cap was to reduce SO_2 emissions from existing facilities to the level required by the 1971 NSPS. The effect on new sources was to reduce the NSPS to zero, as all emissions now have to be offset. Lowering the existing cap by about two-thirds would achieve roughly the same emission reductions as all existing powerplants meeting the 1978

[48] Office of Air and Radiation, EPA, *Analyzing Electric Power Generation under the CAAA* (July 1996).

[49] Chris Holly, "EPA Offers Utilities Off-Ramp from NSR `Highway to Hell,'" *The Energy Daily* (January 14, 2000), p. 1 [headline].

NSPS, but utilities would have some flexibility in achieving such reductions. Admittedly, utilities would get credit for shutdowns that they would not get under NSR enforcement; however, the administrative and cost advantages of the allowance system might be considered worth it. In any case, it would require new legislation, which could be a long drawn out process.

Similarly, a new "cap and trade" program for NOx would eliminate the uncertainties involved in the NSR enforcement debate, and, potentially, in several other EPA initiatives with respect to NOx emissions. Not surprisingly, EPA has been strongly urging states to consider a regional cap and trade program in implementing its currently stalled Ozone Transport Rule, and any possible compliance with Section 126 petitions. Indeed, EPA has gone so far as to make such a program a part of its proposed Federal Implementation Plan (FIP) for states that do not submit adequate SIPs under the OTR and its compliance plan for implementing approved Section 126 petitions. However, to implement a regionwide cap and trade program under the stalled NOx SIP Call for NOx would require either extraordinary cooperation between the states affected (because of the SIP process), or new EPA authority.

A second alternative to NSR is to focus on SO_2 and NOx emissions through other regulatory initiatives. There are several regulatory initiatives underway at EPA that would reduce SO_2 and/or NOx emissions in the future. Besides the previously mentioned OTR and Section 126 petitions, EPA has promulgated a fine particulate NAAQS and a regional haze rule. Both of these regulations will require reductions in SO_2 and NOx emissions as they are implemented. The problem with them is that their implementation schedules are very long, with few reductions occurring before the year 2010. Unlike the alternative of tightening the title IV SO_2 cap and creating an NOx cap, these initiatives do not require further legislative authority.

A third alternative to NSR would be to initiate controls on other pollutants associated with coal-fired powerplants, such as mercury (Hg) and carbon dioxide (CO_2) – controls that would correlatively tend to reduce other emissions, such as SO_2 and NOx, as well. Currently, CO_2 is not considered an air pollutant under the CAA. Mercury is a hazardous air pollutant under the CAA, but regulation of utility boilers is contingent upon an EPA determination of its appropriateness and necessity.[50] As a result, the process to begin controlling Hg emissions from electric utility boilers has moved very slowly. EPA has argued that it has authority under the CAA to regulate CO_2; however, that opinion is very controversial.[51] In lieu of a potentially lengthy legal battle, any CO_2 reductions in the near term would have to result from either voluntary initiatives or through ratification of the Kyoto Protocol.

A final alternative is to reform NSR. One reform could be new legislation to define "modification" in terms of plant age, not physical or operation change. For example, the definition of modification could be altered to include any electric utility generating facility that was 40 years or older, regardless of whether it had been "modified" or not. It would simplify the NSR trigger, but would required legislative action.

Another reform could emerge from a current EPA initiative. It is not surprising, given the situation outlined above, that EPA has been considering reforms to NSR for several years. One focus of that effort has been proposed "off-ramps" to NSR. One off-ramp, called the "Clean Unit

[50] Clean Air Act, section 112(m)(1).

[51] Jonathan Z. Cannon, General Counsel, *EPA's Authority to Regulate Pollutants Emitted by Electric Power Generation Sources*, Memorandum to Carol M. Browner (April 10, 1998).

Exclusion," would exclude existing units from the complicated NSR applicability rules where they already have state-of-the-art pollution control technology.[52] This exclusion would recognize that NSR is unlikely to result in significant emission reductions if units are already well-controlled. In the proposal, a "clean unit" is defined as one that has installed BACT or LAER within the last 10 years. Such units could be modified in any fashion that would not increase the unit's maximum hourly emissions unit. However, how much of an improvement this is over the current situation is debatable.

From EPA's perspective, the problem with all the alternatives is their contingency: they imply the need for legislation or for finalization of regulations, which require time and which may be problematic. Of course, while EPA has the existing authority to initiate its NSR suits, the outcome of the litigation is also problematic.

Conclusion: NSR – Ambiguous, Meaningless or Moot?

> *"EPA is embracing cap and trade programs for many pollutants.*
>
> *"NSR is duplicative and counterproductive on top of a cap.*
>
> *"Replacing NSR with a cap provides the same environmental protection with lower cost and greater environmental benefit."*[53]

Much of the popular debate on NSR has focused on "grandfathered" powerplants. One example from a 1998 report by a public interest group states:

> The Clean Air Act of 1970, as amended in 1977 and 1990, contains a major exemption that allows older coal-burning power plants to emit between 4 and 10 times the amount of pollution that new plants may emit under the Clean Air Act. In part, this colossal loophole exists because industry lobbyists argued successfully that its older plants would soon retire, and that therefore it would be wasteful to require expensive retrofits to control pollution from these plants. However, over 20 years later, many of these same plants, built in the 30s, 40s, 50s and 60s, are still operating, largely without environmental controls.[54]

The term "grandfathered powerplant" is a much used and little understood concept employed in debate on emissions from existing powerplants. Specifically, "grandfathered" is an ambiguous, and, in some cases, meaningless term generally used to indicate whether a given powerplant is covered under Section 111 of the Clean Air Act. Passed with the 1970 Clean Air Act Amendments, Section 111 requires the EPA to promulgate regulations defining the minimum controls necessary for new sources (including power plants) regardless of their location. Called New Source Performance Standards (NSPS), they require major new sources constructed after their promulgation to install the best system of continuous emission reduction which has been adequately demonstrated according to EPA. Currently, there are NSPS regulations for

[52] 61 *Federal Register* 38255 (July 23, 1996).

[53] Environmental Protection Agency, "An Emissions Cap Alternative to New Source Review" (September 27, 1999), p. 2.

[54] United States Public Interest Research Group, *Lethal Loophole*, U.S. PIRG Education Fund (June, 1998), p. 3.

powerplants that cover three pollutants – sulfur dioxide (SO_2), nitrogen oxides (NOx) , and particulate matter. Typically, "grandfathered" refers to those plants (usually coal-fired powerplants) that were constructed before the effective dates of those NSPS regulations and, hence, not subject to them. NSPS regulations for powerplants were first promulgated in 1971 and revised in 1979. The NOx NSPS regulations for powerplants were revised again in 1998. Instead of NSPS requirements, such "grandfathered" sources must meet emission rate limits established by a State Implementation Plan (SIP).

Three aspects of the NSPS make the term "grandfathered" at best ambiguous, and at worst, meaningless.

- Some pollutants of concern, such as carbon dioxide (CO_2) and mercury (Hg) are not criteria air pollutants, and, therefore, not covered by the NSPS for powerplants at the current time. Hence, "grandfathered" is meaningless for these pollutants as all powerplants (indeed, all major sources of these pollutants) are "grandfathered."
- EPA is required to review the NSPS every eight years, resulting in increased stringency for covered pollutants as technology improves (and for determinations of BACT and LAER). Therefore, what powerplants are "grandfathered" is ambiguous as there is no set baseline. For example, the NSPS for NOx was revised in 1998 to a stringency that only a couple of commercially operating coal-fired powerplants currently met; by that standard, virtually all coal-fired powerplants are "grandfathered" with respect to NOx emissions.
- Title IV of the 1990 Clean Air Act Amendments changed the regulation of existing powerplants with respect to SO_2 and NOx. In some cases, the requirements under title IV for existing sources are more stringent than some of the existing or previous NSPS. For example, under phase 1, some existing "grandfathered" powerplants were required in 1995 to meet NOx standards more stringent than then existing NSPS NOx requirements for new powerplants. Likewise, under phase 2 of title IV, existing "grandfathered" coal-fired powerplants are required in 2000 to meet SO_2 standards that are essentially equivalent to (if not more stringent than) the 1971 NSPS for SO_2. The term "grandfathered" is essentially meaningless under such circumstances.

If the focus of debate about "grandfathered" powerplants is NOx emissions, then age of plant is not a relevant consideration – fuel source is. Coal-fired facilities, regardless of age, are the relevant focus of any effort to increase NOx controls. If the focus of debate about "grandfathered" powerplants is SO_2 emissions, then the title IV emissions cap is the relevant consideration. There, age was a consideration in allocating emission credits; however, the relevant definition was not based on NSPS compliance (or any other CAA compliance), but on whether the plant was operational, under construction, or planned at the time of enactment. Indeed, the NSPS for SO_2 for new powerplants is in some ways moot – all new sources must completely offset their emissions under the cap as they receive no allocation of emission credits. The NSPS is effectively nil. Thus, if reducing SO_2 from electric generating facilities is the goal, shrinking the current cap on SO_2 is the most logical approach. Likewise, a cap on NOx emission is a logical extension for reducing NOx emissions from electric generating facilities. Not coincidentally, EPA favors this approach in addressing transported pollution programs in the Northeast, and the agency has proposed state-by-state emissions caps.

The WEPCO decision precipitated public debate and congressional oversight, and the DOJ/EPA actions on NSR may do likewise. Many of the same issues are being raised: The suits depend on interpretations of the legislative intent of several CAA provisions, especially with respect to modifications of existing sources. Also, many alternatives for addressing NSR issues would require new legislation amending the CAA, in order to bring consistency to the NSR provisions and to update the Clean Air Act's approach to regulation of the electric utility industry's environmental effect to reflect the knowledge gained by 30 years of CAA implementation.

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