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Bright Lines or Loopholes?

HOW INDUSTRIAL ACCIDENTS CAN HELP INCREASE POLLUTION UNDER THE BUSH ADMINISTRATION'S CLEAN AIR ACT "REFORMS"

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Executive Summary

The Bush Administration's changes to the New Source Review (NSR) provisions of the Clean Air Act, announced on November 22, have opened regulatory loopholes that will allow industrial facilities and other nonutilities to avoid installing pollution controls required under previous law. In this Report, the Environmental Integrity Project (EIP) tracks how these changes allow companies to use pollution from accidents to avoid NSR permit requirements.

Under NSR, regulatory authorities must determine whether planned plant modifications will significantly increase emissions above historical baselines such that pollution controls will have to be installed. Previously, a plant's emissions baseline was determined by averaging its annual emissions from the past two years, which was then compared to projected future emissions. If that increase was significant – as defined by EPA regulations – then that plant was required to install pollution controls.

The new rule now allows plants to use their highest two years of emissions out of the past ten as their baseline. As documented in a study released by EIP in October, *Turning the Clock Back on the Clean Air Act*, the effect will be to allow companies to inflate their emissions baselines so that comparing historical emissions to future emissions will no longer register as a significant increase. Today's Report shows that in addition to the worst two-in-ten loophole, plants can now include accidental emissions from those same years to boost their baselines even more. Use of accidental emissions, in addition to the already-inflated baseline, proves even more that, at least according to the Bush Administration, it pays to pollute.

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Bright Lines or Loopholes?
How Industrial Accidents Can Help Increase Pollution
Under the Bush Administration's Clean Air Act "Reforms"

On November 22, the Bush Administration finally announced its long-awaited final and proposed changes to the Clean Air Act's "New Source Review" (NSR) rules, which limit emission increases from aging power plants, refineries, and other major polluters. The Administration claims that the rules provide a "bright line" that makes permit decisions clearer and increases efficiency.[1] In practice, the new regulations will make it easier to avoid the law altogether, by allowing industrial plants that lack state-of-the-art pollution controls to increase their pollution substantially over present emissions without getting a permit. Specifically, the new rules will allow companies to increase their emissions above current amounts so long as they do not exceed their highest emission levels in the last ten years. In addition, pollution from incidents such as accidents at poorly maintained facilities will be counted when adding up past emissions, making it even easier to offset emission increases in the future.

Under the Clean Air Act, refineries, cement kilns, chemical plants, and other facilities must comply with strict standards that reflect the best available pollution control technology. Plants built before 1977 did not have to meet these tough requirements right away. Instead, these "grandfathered" plants are required to apply for permits, and install state-of-the-art controls, whenever they are modified or expanded in a way that increases their emissions above certain minimal levels set by law.[2]

Under this framework, NSR has limited emissions growth and gradually forced the installation of modern pollution controls at grandfathered plants – controls that can reduce emissions by as much as ninety-five percent. Determining whether a modification will increase pollution and trigger NSR requires comparing actual emissions before the project (the "baseline") to the emissions expected after construction is complete. The final rule skews the baseline emissions calculation in two significant ways that make it easier to avoid these important requirements by (1) helping plants inflate their baseline emissions and (2) by allowing the inclusion of accidental emissions in the baseline calculation.

Computing Actual or Baseline Emissions

Prior to the November 22 revision, NSR required all facilities (except power plants) to base their actual emissions on the annual average of the two years preceding the application to undertake the proposed project, to the extent those years reflected "normal source operation."[3] Typically, permit writers used the average of the two years preceding the permit application to determine the baseline. For instance, if a refinery submitted a permit application in October of 2002 for a unit that emitted 1,100 tons in 2000, and 900 tons in 2001, that unit's baseline would be 1,000 tons. If the plant expected the unit's emissions to rise to 1,200 tons as a consequence of the modification, then a 200 ton emissions increase would be registered and the plant would have to either install pollution controls or accept a permit that limited its

emissions. Figure 1 illustrates how baseline calculations were made under the old rules.

Inflating Actual Emissions with Historical Pollution

At least, that was how NSR worked before the Bush Administration amended it on November 22. Now, the final rule all but ensures that plants will escape NSR controls by fixing the baseline calculation such that companies will no longer register an increase in the first place.

For example, suppose emissions at a refinery's catalytic cracking unit averaged 1,200 tons over a two-year period within the past ten years. The plant would not register an increase even if the modification added 200 tons of regulated pollutants to its most recent emission levels because the combined total (1,000 tons plus 200 tons from the project modification) would not exceed its highest emissions levels from ten years ago (1,200 tons). Figure 2 illustrates how the baseline emissions calculation will work under the worst two-in-ten rule.

The Administration's new rule does allow a downward adjustment in the baseline to account for any recent permit limits not in effect ten years ago. Unfortunately, those permit limits often do not apply to the very units – old, grandfathered sources – that NSR targets. A report issued by EIP in October 2002, *Turning the Clock Back on the Clean Air Act*, included a study that analyzed two recent permit decisions that showed that had this ten year look-back, which is now the law, been in effect, a refinery in Illinois and a steel mill in Indiana could have increased nitrogen oxide emissions by a combined total of 125 tons per year. [4] The analysis also showed that sulfur dioxide (SO_2) emissions likely would have increased by 200 tons per year at one of the plants.[5]

Inflating Past Emissions with Accidents

Under the Bush EPA's rule, companies not only can now cash in on historically high levels of emissions, but may also be able to include emissions from malfunctions or accidents to inflate their emissions above the baseline established using the worst two polluting years out of the past ten.[6] In addition, the Bush rule change allows plants to include emissions from startups and shutdowns as part of their baselines.[7] This presents another major loophole because emissions are often higher during the startup of a new unit, as new equipment is being tested and primary pollution controls are not yet always in place. Production units also can be shut down for repairs that are either routine or required after a malfunction. In such cases, gas streams normally consumed during production are directed to flares to be combusted, events that lead to significant releases of pollution.

Suppose for instance that the catalytic cracking unit at a refinery emitted and average of 1,000 tons of SO_2 during the two years prior to its application for a proposed modification and was expected to add another 400 tons to the atmosphere every year after the project's completion. Ten years ago, the cracking unit's SO_2 emissions

averaged 1,200 tons per year. Under the Bush rule change, its projected "increase" would be 200 tons (1,400 tons minus the 1,200 tons from the cracking unit's historical baseline). Now, suppose the unit accidentally emitted 200 tons of pollutants per year in addition to the 1,200 tons it averaged during normal operations in its highest two emitting years. As Figure 3 illustrates, the emissions baseline would rise to 1,400 tons and the plant would have eliminated – on paper – what amounts to a 400-ton increase in SO_2 emissions over current emission levels, i.e., 1,000 tons in current emissions plus 400 tons in planned increases, minus 1,200 tons in past emissions plus another 200 tons from past accidents. In other words, the more accident-prone the refinery has been in the past, the more likely it is that it will avoid strict permit limits in the future.

Accidents and malfunctions can result in large pollution increases. An EIP report published in October, entitled *Accidents Will Happen*, revealed that shutdowns and malfunctions released hundreds of tons of pollution at five chemical plants and refineries in Port Arthur, Texas, over the first nine months of 2002. The report, which tracked notices of accidental releases from the five plants, showed that shutdowns and malfunctions released 350 tons of SO_2 at a Premcor refinery; nearly 600 tons of SO_2 at an Atofina refinery; and nearly 700 tons of smog-forming volatile organic compounds from BASF's chemical plant in Port Arthur. In October, a hurricane caused more emissions to be released from these plants as a result of the shutdown of entire facilities.[8] Under the Administration's new rule, these emissions could be used to pad the baseline, making it even easier to avoid NSR. And, after November 22, neither EPA nor the states have the discretion to challenge these inflated emission numbers on the grounds that they do not reflect normal operations because normal operations are no longer a criteria for choosing years representative of baseline emissions.

The final rule includes language allowing for a downward adjustment of baseline emissions, to the extent the source was operating above "an emission limitation that was legally enforceable" during the baseline period.[9] Companies, however, generally are excused from complying with emissions limits during accidents, startups and shutdowns, so long as such incidents are not reasonably foreseeable, and certain notification and minimal pollution control requirements are met. In other words, permit limits are not legally enforceable during such events.[10]

Predicting Future Increases

It is clear that pollution from startups, shutdowns, and malfunctions will now be included in past emissions baseline calculations. The question that remains is whether companies will also have to include emissions from these same events when predicting whether a specific project will increase emissions and trigger NSR pollution control requirements. The answer at first appears to be yes, as the new rule does state that emissions from expected malfunctions, startups and shutdowns should be included, taking into account any prior history at the plant. Estimating pollution from future accidents, however, presents a number of practical difficulties that make it much more likely that emissions from such events will be underestimated or not included at all. What is worse, it will be almost impossible to enforce such a requirement.

Here are some of the issues that are likely to arise:

- ✍ While companies are legally entitled to include their worst accidents when calculating past emissions, they are not held to any real standard for predicting the recurrence of accidents in the future. Companies may claim "that was then, this is now," arguing that emissions will be lower in the future because accidents will not be as frequent or severe.

- ✍ Under today's law, malfunctions are excused on the theory that they are "unforeseeable." No sensible plant manager will want to estimate how much pollution will result from future accidents, because accidents that can be predicted are more likely to be considered as "foreseeable," could be subject to enforcement actions, and are more difficult to explain to a skeptical public during the permit review process.

- ✍ Emissions can often be high during the startup of a new project when equipment is being tested. While a plant can add past "startup" emissions to its baseline, its future projections must only include emissions that follow "regular operation" of the modified production unit. In other words, a plant apparently will be able to add "startup" emissions to its baseline, but will be allowed to exclude them from expected future "regular operation" emissions (even if extra startup emissions are likely to occur).

- ✍ Last but not least, it will be virtually impossible to prove that an accident following completion of a major project somehow caused a violation of NSR standards. That is because EPA has the burden of proving that such malfunctions occurred as a result of the modification project.[11] So much for the bright lines the Administration claims this new rule provides.

What possible legal basis can be offered to justify these results? Because this substantial change in the rule was not included in the original proposal released in 1996[12] or the 1998 Notice of Availability,[13] and because no rationale is provided in the final rule, we can only guess. The Administration may try to argue that accidental releases have been included because future increases must be measured from actual emissions under the law. But elsewhere the Administration has turned the concept of "actual" emissions into a term of art. When used as a baseline against which future increases are measured, actual emissions are no longer something occurring today or even recently, but the highest level a plant has been able to measure in the last ten years. Moreover, emissions resulting from the startup of a new or modified unit count in measuring pollution, but can apparently be excluded from calculations of future increases – even though they are no less real.

Plantwide Applicability Limitations

The rule package also establishes plantwide applicability limitations ("PALs") that allow facilities to combine emissions from many different units into one total to determine the baseline for the entire plant. The PAL suffers from important defects, but it does avoid the problems that arise from trying to estimate emissions from future accidents that are by definition unforeseeable. Specifically, under the final rule, once a plantwide permit is established, all future emissions from accidents, startups and shutdowns are counted in determining whether the PAL is exceeded.

PALs, however, are voluntary, and for a variety of reasons it is likely that many companies will choose to limit their permit transactions to individual emission units. In such cases, companies will be entitled to count all past accidental emissions in setting their baseline, but as explained above, will have a variety of ways to exclude such emissions when estimating whether events such as accidents, startups, shutdowns, and malfunctions are likely to trigger a pollution increase in the future.

As this Report shows, the rule changes made final by the Bush Administration represent a calculated attack on a program designed to reduce air pollution and protect public health. The rule rewards the worst polluting and most accident-prone facilities by making it easier to avoid NSR and postpone investment in newer, less polluting technology. As a result, twenty-five years after the Clean Air Act became law, it leaves communities surrounding these plants more exposed to pollution than ever before.

Emissions Calculations Before and After November 22, 2002

Figure 1

The Clean Air Act before November 22, 2002
New Source Review for Grandfathered Units

2000-2001 Actual Emissions	Potential Emissions	Emissions Increase	NSR Permit Consequences
1,000 tons	1,200 tons	200 tons	Offset emissions increase or install best available control technology

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Figure 2

The Clean Air Act after November 22, 2002
Using Historical Emissions to Eliminate NSR Permitting for Grandfathered Units

2000-2001 Actual Emissions	Potential Emissions	Highest 2 Yrs of Emissions in Past 10	Emissions Increase	NSR Permit Consequences
1,000 tons	1,200 tons	1,200 tons	0	None

Figure 3

The Clean Air Act after November 22, 2002
Using Historical and Accidental Emissions to Eliminate NSR Permitting for Grandfathered Units

2000-2001 Actual Emissions	Potential Emissions	Highest 2 Yrs of Emissions in Past 10	Accidental Emissions in Highest Baseline Years	Emissions Increase	NSR Permit Consequences
1,000 tons	1,400 tons	1,200 tons	200 tons	0	None

Endnotes

[1] The changes finalized by the Administration would affect modifications made after November 22, 2002. The Environmental Protection Agency (EPA) has promised that neither the final nor the proposed rules will affect the pending NSR enforcement cases. The finalized rule changes, however, may impede opportunities for settlement in ongoing enforcement actions, as industry defendants may claim that enforcing against them will be inequitable in that their competitors will not be held to the same requirements that they were subject to prior to the rule change.

[2] See, e.g., 40 C.F.R. § 51.165(a)(1)(x) (defining significance thresholds for emissions increases of criteria pollutants).

[3] See 40 C.F.R. § 51.165(a)(1)(xii)(B). While the baseline for nonutilities will be based on the highest two years of emissions out of ten, pursuant to the "WEPCO" rule, utilities' baselines are calculated using the highest average annual emissions in any twenty-four-month period over the five years preceding the project. Because the final rule's changes to baseline emissions do not pertain to utilities, this Report's discussion of baseline emissions is limited to nonutilities.

[4] See Environmental Integrity Project, *Turning the Clock Back on the Clean Air Act* (Oct. 2002).

[5] Id.

[6] See 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 [to be published in Federal Register] (finalized Nov. 22, 2002) (to be codified at 40 C.F.R. § 51.165(a)(xxxv)(B)(3)) [hereinafter "Final Rule"]. Under the rules previously in place, plants could use another baseline period with which to calculate their emissions baselines, but only if they could show that those years were "more representative" of "normal source operation." 40 C.F.R. § 51.165(a)(1)(xii)(B). While EPA has never directly defined what "normal source operation" includes, in practice EPA has not considered accidental emissions to be representative of "normal source operation," and therefore did not allow facilities to use years in which accidents or shutdowns occurred as years more representative of their baselines. Draft New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting, A.39 (Oct. 1990) (stating that incidents such as "strikes, retooling, major industrial accidents and other catastrophic occurrences" should not be considered as part of "normal source operation"); see also Memorandum from John Calcagni, Director, Air Quality Management Division (MD-15) to David Kee, Director, Region V Air and Radiation Division re: Proposed Netting for Modifications at Cyprus Northshore Mining Corp., Silver Bay, Minnesota (Aug. 11, 1992) (explaining that normal source operations do not include accidents or other extraordinary circumstances and citing Draft Manual as EPA policy); Letter from R. Douglas Neely, Chief, Air and Radiation Technology Branch, Air, Pesticides, and Toxics Management Division, EPA Region 4, to John Yntema, Georgia Environmental Protection Division, re: the establishment of emissions representative of normal source operations for Owens-Brockway Glass Container, Inc. (Mar. 2, 2000) (stating that use of different time period may be used only where the two preceding years include "catastrophic occurrences such as strikes and major industrial accidents").

Moreover, because EPA's own regulations defined accidents as unforeseeable, they could not be included in future estimates of potential emissions. Thus, accidents could not be included in either the baseline emissions calculation or a facility's estimate of its future

emissions attributable to the proposed maintenance or modification project. Now, unforeseeable events such as malfunctions, startups, shutdowns, and accidents constitute the norm instead of the exception. See Final Rule (to be codified at 40 C.F.R. § 51.165(a)(xxxv)(A)(3)).

[7] See Final Rule (to be codified at 40 C.F.R. § 51.165(a)(1)(xxxv)(A)(1)).

[8] Final data is not yet available.

[9] See Final Rule (to be codified at 40 C.F.R. § 51.165(a)(1)(xxxv)(A)(2)).

[10] See Memorandum from S.A. Herman and R. Perciasepe to Regional Administrators re: State Implementation Plans (SIPs): Policy Regarding Excess Emissions During Malfunctions, Startup, and Shutdown (Sept. 20, 1999), available at http://www.epa.gov/ttn/oarpg/t1/memoranda/excem.pdf.

[11] In general, NSR prohibits only those increases related to a modification.

[12] See 61 Fed. Reg. 38,249 (July 23, 1996).

[13] See 63 Fed. Reg. 39,857 (July 24, 1998).