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ECONOMIC DREAM OR ENVIRONMENTAL NIGHTMARE? THE LEGALITY OF THE "BUBBLE CONCEPT" IN AIR AND WATER POLLUTION CONTROL

Jack L. Landau*

I. INTRODUCTION

Excessive costs and unwarranted intrusions into private business affairs are becoming increasingly familiar criticisms of federal and state environmental regulations. The claims are not totally without foundation. The Council on Environmental Quality reports that industries spent over $30 billion in 1978 on air, water, and solid waste pollution abatement equipment. The steel industry

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2 COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY—1979: TENTH ANNUAL REPORT 666-67 (1979). The Council estimates that the cumulative investment in air pollution control for the years 1978-87 will exceed 300 billion dollars. Id. This estimate has been translated into a bill for each American family that totals over 600 dollars each year. Heath, supra note 1, at 47. The steel industry has been particularly hard hit by the costs of pollution control. Industry advocates claim that pollution control is responsible for a 4.6 percent increase in the wholesale price of steel. Nulty, A Brave Experiment in Pollution Control, FORTUNE, Feb. 12, 1979, at 120; Steelmakers Seek U.S. Concessions, Wall St. J., Feb. 1,
alone has invested $6 billion in pollution control equipment to date, and expects to spend nearly $4 billion more by 1985. Such expenditures cannot help but freeze investment capital and drive up consumer prices to some significant extent.

Much of this problem is a product of the manner in which this nation has chosen to control its pollution: government regulation. Traditionally, pollution has been controlled by a government agency simply telling a firm how much it can and cannot pollute, chimney-by-chimney, pipe-by-pipe. Compliance has usually been guaranteed by threats of fines or shutdowns. The rub is that no government has the time, the personnel, or the money to determine what would be the most cost-effective way for a firm to meet the myriad pollutant limitations. Instead, regulatory agencies largely rely on uniform standards that require all polluting activities of a certain industry type, size, or location to comply with essentially the same requirements. Consequently, even if firms could devise cheaper ways to achieve the same result, there is no incentive to do so. Small wonder that the federal pollution control pro-
gram has met such vigorous resistance from businesses and industries.

The U.S. Environmental Protection Agency has not been deaf to such criticism. In the past five years it has attempted in several ways to incorporate notions of economic efficiency into its regulatory program. At the forefront of these proposed regulatory reforms has been the "alternative emission reduction options policy," better known as the "bubble concept."

The basic idea behind the bubble concept is to define a source of pollution for regulatory purposes not in terms of individual smokestacks and pieces of machinery, but rather as whole units, as if an imaginary bubble were placed over the entire combination of chimneys and buildings making up a single plant. Industries would then be responsible for the total emissions or effluents from the plant, not just the individual pieces of equipment. This would allow the industry to reduce pollution in the plant, within the imaginary bubble, in the most cost-effective way, as long as the total emissions or effluents from the plant do not exceed an amount specified by regulations.

For example, picture a steel manufacturing plant that is required to reduce particulate emissions by a certain number of tons per year. There are two main sources of particulates at this plant: a blast furnace and an open-hearth furnace. The cost of reducing particulate pollution from the blast furnace is approximately $8,500 per ton, while the cost of reducing the same amount of pollution from the open-hearth furnace is $35,000 per ton. Clearly, the manufacturer would like to reduce the pollution from the blast furnace instead of the open-hearth furnace at a savings of over $26,000 per ton. The bubble concept allows the manufacturer to do just that. It provides the possibility of having the proverbial cake and eating it too. The polluter is allowed to reduce the pollution in...
the cheapest way possible, while air quality itself is not sacrificed.

The EPA has attempted to apply this policy to a number of different air pollution control programs: new source performance standards, prevention of significant deterioration, emissions offsets, and state implementation plans. There has even been discussion concerning the possibility of applying the bubble concept to certain water pollution control programs.

Predictably, industries have greeted EPA's efforts with a great deal of enthusiasm.10 President Carter's chief inflation fighter Alfred Kahn has called the bubble concept "an economist's dream."11 Environmentalists, however, have viewed it as something of a nightmare and have attacked its legality at every turn.12

This article analyzes the ways in which EPA has attempted to apply the bubble concept and the struggles that have occurred in nearly every case. A brief summary of each of the pollution control programs involved is provided, followed by a description of the variation of the bubble concept applied to each of those programs. An analysis of the industrialist and environmentalist responses to each of the bubble policies is included. Finally, some conclusions are drawn as to the efficacy of each of the proposed bubble policies as well as to the propriety of the bubble concept itself.

II. THE BUBBLE CONCEPT IN AIR POLLUTION CONTROL

A. New Source Performance Standards

The bubble concept made its debut in a series of EPA regula-
implementing section 111 of the Clean Air Act Amendments of 1970. It was, however, a short-lived appearance. The bubble concept as applied in those regulations was invalidated by the courts a little over two years after the first proposal.

The 1970 Act set out a number of new federal air pollution control programs. Nationwide ambient air quality standards (NAAQS's) were required, with the responsibility of attaining those standards left to the states by means of "state implementation plans" (SIP's). Several kinds of emission limitations were also prescribed by the new Act. Maximum amounts of pollution were defined for motor vehicles, for sources of hazardous air pollutants, and, in section 111, for certain new sources.

For these new sources the emission limitations were to be espe-

15 ASARCO, Inc. v. EPA, 578 F.2d 319 (D.C. Cir. 1978).
16 Clean Air Act Amendments of 1970, Pub. L. No. 91-604, § 109, 84 Stat. 1679 (1970). Two types of standards were required by the 1970 Amendments. "Primary" standards were to establish the maximum concentration of an air pollutant that could be allowed without endangering public health. "Secondary" standards were to establish maximums to protect public welfare.
17 Id. § 110, 84 Stat. 1680. The state implementation plans were to be a blueprint for attainment of the ambient standards by federally-mandated deadlines. They were to include "emission limitations, schedules, and timetables for compliance with such limitations . . . ," provisions for monitoring of air quality, and procedures for the review and permitting of new sources.
18 Emission limitations are not to be confused with ambient air quality standards. The former are controls on the amount of pollution that can be allowed from a single source. The latter are maximum allowable concentrations in the open air.
19 Id. § 202, 84 Stat. 1690.
20 Id. § 112, 84 Stat. 1685. The 1970 Amendments defined hazardous pollutant as "an air pollutant for which no ambient air quality standard is applicable and which . . . may cause or contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness." Id. § 112(a)(1), 84 Stat. 1685.
21 Id. § 111, 84 Stat. 1683. Only new sources that "contribute significantly" to the pollution problem were subject to the new source performance standards. EPA was required to determine which industry categories qualified as significant contributors and publish a list of those source types along with the standards that were to apply to them. Id. § 111(b)(1)(A), 84 Stat. 1684.
cially stringent. The limitations, known as "new source performance standards" (NSPS) were to reflect "the degree of emission limitation achievable through the application of the best system of continuous emission reduction . . . [EPA] determines has been adequately demonstrated." The question, of course, was what constituted a "new source" to which these strict standards would apply. Section 111 ambiguously defined the term as "any stationary source, the construction or modification of which . . ." occurred after a certain date. A "stationary source" in turn was defined as "any building, structure, facility, or installation, which emits or may emit any air pollutant."

In 1971, when EPA promulgated its first set of regulations concerning section 111, it did not comment at all on the statutory definitions of "new source" and "stationary source." It simply quoted the section 111 definitions verbatim. In 1975, however, after much prodding by nonferrous industry advocates and the Department of Commerce, the Agency adopted a form of the bubble concept. In a new set of regulations interpreting section 111, EPA redefined "stationary source" to include not just "buildings, structures, facilities" and the like, but also combinations of facilities. The imaginary bubble, in other words, was placed over an entire plant, instead of each piece of machinery. There was a catch. The expanded definition of "stationary source" only applied to existing sources undergoing modifications. All newly constructed sources were subject to the stringent section 111 NSPS's on a building-by-building, facility-by-facility basis. Existing sources, though, could avoid the NSPS's entirely if, when a new piece of equipment was added to the plant, emissions were

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22 Id. § 111(a)(1), 84 Stat. 1683 (emphasis added).
23 Id. § 111(a)(2), 84 Stat. 1683. In order for a source to fall within the definition, the construction or modification must occur after the publication of the new source performance standards applicable to that source.
24 Id. § 111(a)(3), 84 Stat. 1683.
26 Id.
27 See note 10 supra.
28 40 Fed. Reg. 58,416, 58,418 (1975). The regulation stated:

Stationary source means any building, structure, facility or installation which emits or may emit any air pollutant and which contains any one or combination of the following:

(1) Affected facilities;
(2) Existing facilities;
(3) Facilities of the type for which no standards have been promulgated in this part.
Id. (emphasis added).
reduced elsewhere in the same source—the same "combination of facilities"—so that in the end there would be no net increase in emissions from the source.28

EPA's new regulations were taken to task by both industry and environmental advocates in ASARCO, Inc. v. Environmental Protection Agency.29 ASARCO and other industry petitioners thought EPA did not go far enough, claiming the bubble concept should have been expanded to include newly constructed as well as existing sources.30 The environmentalists, represented by the Sierra Club and others, argued that the plain language of the Clean Air Act precluded adoption of any form of the bubble concept. Section 111, they argued, defined "source" in terms of any "building, structure, facility, or installation . . . ," all of which are in the singular.

28 Id. at 58,419. "[M]odification shall not be deemed to occur if an existing facility undergoes a physical or operational change where the owner or operator demonstrates . . . that the total emission rate of any pollutant has not increased from all facilities within the stationary source. . . ." Id.

An example of how EPA intended the bubble concept to work would be as follows. XYZ Steel Co. owns a steel mill that currently emits 500 tons of sulfur dioxide per year. XYZ Co. plans to expand its operations by installing a new smelter at the steel mill. The new smelter will add another 200 tons of sulfur dioxide to the airshed each year. The company, however, can clean up sulfur dioxide emissions in the existing mill by at least 200 tons per year, so when the new smelter begins operations the total emissions from the mill taken as a whole will not increase at all. The law requires modifications to comply with the NSPS's only if there is an increase in emissions from the "source." Since the EPA regulations would consider the entire steel mill to be a source, the new smelter would not be subject to the stringent NSPS's because the emission reductions from elsewhere in the mill have prevented the new smelter from increasing emissions from the source.

As for applying the bubble concept to new sources, the agency commented that section 111 of the 1970 Amendments plainly required the application of NSPS's to newly constructed industries, and that trading emission reductions for increases in order to avoid compliance with that requirement would be contrary to law:

If the bubble concept were extended to cover new construction large sources of air pollution could avoid the application of new source performance standards indefinitely. Such sources could replace worn out or obsolete facilities with new facilities of the same type. If the same emission controls were adopted no overall emission increase would result. In this manner the source could continue indefinitely without ever being required to upgrade air pollution control systems to meet standards of performance for new facilities. Id. EPA's reasoning seems to beg the question. The real issue was what Congress intended the term "source" to mean. If it means combinations of facilities, then it follows that, at least within the context of section 111, both new and existing polluting activities should be treated similarly since the Act made no distinctions between new sources and modifications of existing ones. EPA also failed to articulate why existing "sources" should be given more flexibility than new construction.


The Act, they contended, did not contemplate combining any of these single components. Furthermore, according to the Sierra Club, the use of the bubble concept would contravene the very purpose of the Clean Air Act, which is to "protect and enhance" air quality. To these petitioners the bubble concept seemed to merely provide a loophole that would allow polluters to "delay cleanup efforts and confound enforcement.”

EPA attempted to justify its regulations by citing section 111(b)(2), which permitted the agency to “distinguish among classes, types and sizes within categories of new sources” for the purpose of establishing NSPS's. This language, the agency asserted, granted it great discretion in defining the term “stationary source.” Therefore, the EPA regulations, being clothed in such broad statutory discretion, should survive the challenges of the Sierra Club and ASARCO.

A divided court of appeals rejected the arguments of ASARCO and EPA, and held for the Sierra Club. Judge Wright, writing for the majority held that any version of the bubble concept was incompatible with the language and purpose of the Clean Air Act. The statute, said Judge Wright, plainly refers to “source” in terms of single components. Nowhere is the concept of multiple facilities or other source components ever mentioned. The agency, therefore, had “no authority to rewrite the statute” as it attempted to do.

Judge Wright turned to the purpose of the Act and to section 111 to further augment his conclusion that the bubble concept was not appropriate. Citing the “protect and enhance” language of the Clean Air Act, he concluded that the bubble concept would, at

32 Id. at 325, 326.
33 Comment, D.C. Circuit Rejects Use of the “Bubble Concept” in Applying New Source Performance Standards, supra note 30, at 10052.
37 Id. at 329. “[W]e find that any version of the bubble concept is inconsistent with the Act and contrary to its purpose.” Id. (emphasis supplied).
38 Id. at 326-27.
39 The regulations plainly indicate that EPA has attempted to change the basic unit to which the NSPS’s apply from a single building, structure, facility, or installation—the unit prescribed in the statute—to a combination of such units. The agency has no authority to rewrite the statute in this fashion.

Id. (emphasis supplied).
best, serve to merely *maintain* air quality. Thus, it would fall fatally short of the congressional mandate.\(^{40}\)

As a final argument to support the majority opinion, Judge Wright attacked the internal inconsistency of EPA's NSPS bubble concept. By interpreting "source," as used in section 111, to mean one thing for newly constructed polluters and another thing for modifications of existing plants, the agency, he complained, created unnecessary and undesirable confusion. This confusion he insisted was further proof of the error of EPA's ways.\(^{41}\)

Despite all of Judge Wright's apparent animosity towards the bubble concept, he left in a footnote a curious comment that could serve as a loophole for the entire holding. Although EPA's definition of "source" was invalid, the agency, Judge Wright said, remained free to define the components of "source," particularly the term "facility," in a broader fashion.\(^{42}\) Indeed, the footnote conceded that EPA's definition of a facility, "*which this court accepts...*" indicates the units designated... under this definition are usually larger than individual machines or single pieces of equipment, *and are sometimes whole plants.*\(^{43}\) This statement would seem to flatly contradict the holding of the case. If a "source" is "any... facility..." and a "facility" is a whole plant, then there is no effective difference. The law of commutative properties\(^{44}\) would seem to suggest that in spite of the court's protestations, a "source" is, after all, a combination of polluting activities.\(^{45}\)

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\(^{40}\) ASARCO, Inc. v. EPA, 578 F.2d 319, 327 (D.C. Cir. 1978).

\(^{41}\) Id. at 328.

\(^{42}\) Id. at 324 n.17.

\(^{43}\) Id. Why Judge Wright emphasized the term "facility" is uncertain. Perhaps it was because the term is the most ambiguous. A standard dictionary defines the term as "something (as a hospital, machinery, plumbing) that is built, constructed, installed, or established to perform some particular function." *Webster's Third International Dictionary* 812-13 (P. Gove ed. 1971). The legislative history offers no definition of the term.

\(^{44}\) If A = B, and B = C, then A = C.

\(^{45}\) Reconsider the example involving XYZ Steel Co. at note 29 *supra*. Under the purported holding of the majority, XYZ Steel could not avoid the application of NSPS's. The new smelter is a "facility" or "installation" under any definition of the terms, and a facility, according to Judge Wright, equals a source. The new emissions from the smelter cannot be offset by emission reductions elsewhere in the steel mill because the rest of the steel mill is treated as a different source. As a result, the emissions from the new smelter, itself a source, qualify as increases and thus the smelter is subject to NSPS's.

Under the reasoning supplied by footnote 17 of the majority opinion, a totally different result occurs. If EPA simply redefines the entire steel mill as a facility, then the entire steel mill will be treated as a single source. Since the majority insists that "facility" equals "source," then only modifications that produce an increase in emissions from the steel plant taken as a whole will be subject to NSPS regulation. The XYZ Steel Co. could then offset
The majority opinion gave little attention to EPA's claim that the regulations were supportable as a valid exercise of statutory discretion. In a footnote, Judge Wright attempted to discredit the agency argument by reasoning that the statute relied upon by EPA merely allowed the agency the discretion to set different standards for various source classifications, not to rewrite the definition of "source" itself. The judge provided no elaboration or further discussion.

It is this rather cursory treatment of the discretion issue that prompted a concurring and a dissenting opinion from the other judges ruling on the case. Judge Leventhal's concurrence chided the Wright opinion for not recognizing a greater amount of discretion in the section 111(2)(b) passage. Although the section did not grant the agency such far-reaching exemption authority as the bubble concept would involve, he suggested that it did allow EPA to "set more liberal standards for modified facilities than for newly constructed facilities that perform the same function." Still, not all modified facilities would be subject to the less stringent standards. A case-by-case cost benefit analysis would be necessary to support such a decision.

In a dissenting opinion, Judge MacKinnon asked why Judge Leventhal's rationale should not be carried to its logical extreme. If the agency is allowed by section 111(b)(2) to set different standards for different source classifications, why should it not also be able to set a standard requiring nothing at all? "No reason," wrote Judge MacKinnon, "has been advanced why the 'standards' that EPA is directed to promulgate cannot in certain cases be standards of nonregulation." The bubble concept was simply a case of discretionary nonregulation of a source classification and there-

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48 Id. at 326 n.24.
49 Id. at 330.
47 Judge MacKinnon cited no cases to support his assertion that EPA could promulgate "standards of nonregulation." There do not appear to be any directly on point.

46 Judge Leventhal reasoned that the authority to perform such case-by-case analysis was inherent in the § 111(b)(2) discretion to "distinguish among classes, types, and sizes within categories of new sources" for the purpose of establishing NSPS's. Id.
45 Id. at 331.
44 Id.
43 Id. at 324 n.17 (D.C. Cir. 1978).
fore should have been upheld.83

Judge MacKinnon then addressed the majority opinion's treat-
ment of the Clean Air Act definition of "source." The language of
section 111, he said, does not necessarily preclude the incorpora-
tion of a bubble concept into NSPS regulations.84 The statute does
refer to the components of "source"—building, structure, facility,
and installation—in the singular. However, he suggested, Judge
Wright failed to consider the meaning of the source components
themselves. What, for example, does the term "facility" mean?
Does the fact that it is listed in a singular form necessarily mean
that it encompasses only a single activity or piece of machinery?
Such operations as a medical facility and nuclear power facility be-
lie any notion that the term "facility" is limited to referring to a
single activity or machine. The incorporation of a form of the bub-
ble concept then, according to Judge MacKinnon, cannot be so
easily dismissed as being in conflict with the language of the Clean
Air Act.85 Evidently he was more aware of the consequences of the
majority opinion's marginal discussion of the "source"-"facility"
relationship than was Judge Wright.

Neither the concurring nor the dissenting opinions referred to
Judge Wright's reliance on the purpose of the Clean Air Act and
the supposed internal inconsistency of the EPA regulations. These
arguments, too, are shaky grounds upon which to base so sweeping
a decision.86 The purpose clause of the Act does refer to the pro-

The situation could be analogized to "discretionary nonenforcement." There are a large
number of cases that hold that an agency's decision not to prosecute where discretion is
allowed is quite valid, and in many cases is unreviewable by the judiciary. See, e.g., Hern-
andez v. NLRB, 505 F.2d 119 (5th Cir. 1974); United Electrical Contractors Ass'n v.
Ordman, 258 F. Supp. 758 (S.D.N.Y. 1965), aff'd, 366 F.2d 776 (2d Cir. 1966), cert. denied,
385 U.S. 1026 (1967); Hourihan v. NLRB, 201 F.2d 187 (D.C. Cir. 1952). This matter is,
however, the subject of some controversy, and some courts are evidently beginning to hedge
on the wide discretion traditionally accorded administrative agencies. See, e.g., Ausperger v.
Brotherhood of Locomotive Engineers, 510 F.2d 853 (8th Cir. 1975). For a strongly stated
case against discretionary nonenforcement see 2 K. Davis, Administrative Law Treatise

It is clear that EPA could not refuse to regulate a firm simply because it would be troub-

83 ASARCO, Inc. v. EPA, 578 F.2d 319, 333 (D.C. Cir. 1978).

84 Id.

85 Id. at 333-34.

86 Still, there is precedent for making such leaps of faith. The entire prevention of signifi-
cant deterioration program was called into existence on the basis of judicial interpretation
of two words. See note 66 infra.
tection and enhancement of the nation's air quality. However, in the same sentence it also refers to the promotion of "the productive capacity of the population." The bubble concept would certainly be consonant with that aspect of the Act's stated purposes. Why focus on one part of the purpose section to the exclusion of the rest? Moreover, simply because a purpose of the Act is to reduce pollution it does not follow that any instance of simple air quality maintenance subverts that purpose. Under the 1970 Act numerous sources of pollution were not even regulated, yet these instances were never held to contravene the basic purpose of the Act.

The fact that EPA chose to apply the bubble concept only to modifications of existing sources should not mean that the bubble concept in any form is invalid. Inconsistency does not always lead to invalidity. A term can take on as many different shades of meaning with varying contexts as Congress demands. Judge Wright's opinion simply assumes, without any elaboration, that Congress did not intend "source" to be treated differently depending on whether it is new or existing.

In sum, although the court held the bubble concept to be invalid in this case, the weaknesses of the court's reasoning left it open to considerable question. And, in fact, some of the arguments of the concurrence and dissent eventually resurfaced with greater success.

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87 See text accompanying note 39 supra.
88 Air Quality Act of 1967, Pub. L. No. 90-148, § 101(b)(1), 81 Stat. 485 (1967). See W. ROGERS, HANDBOOK ON ENVIRONMENTAL LAW 282 (1977). Professor Rogers asks why the same "productive capacity" language was ignored in favor of the "protect and enhance" language in justifying the requirement of preventing significant deterioration of air quality. See note 66 infra. The implication here is certainly not that the purpose of the Clean Air Act is to foster economic development. But at the very least, this phrase expresses congressional awareness of the fact that productivity is an important consideration in the development of air quality policy.
89 For example, the 1970 Act did not specify any uniform emission standards for existing sources, only for new ones within specified categories. See notes 20-21 supra.
90 Indeed, Judge Wright's argument that the inconsistency of the EPA regulations indicates invalidity could instead have served to indicate that the bubble concept should have been applied not only to modifications but to new sources as well. This is, in fact, what ASARCO argued. ASARCO, Inc. v. EPA, 578 F.2d 319, 329 (D.C. Cir. 1978).
91 For an example of a term defined in two different ways in the same act see text accompanying notes 188-94 infra. There is, of course, a "canon" of statutory construction that words are presumed to be defined consistently. However, this is only a presumption. Moreover, that canon, like all canons of construction has an equally valid opposite. As Llewellyn remarked in his classic article, "[T]here are two opposing canons on almost every point." Llewellyn, Remarks on the Theory of Appellate Decision and the Rules or Canons about How Statutes Are to Be Construed, 3 VAND. L. REV. 395, 401, 404 (1949).
in a different regulatory context: the prevention of significant deterioration program.

B. Prevention of Significant Deterioration

EPA regarded the ASARCO decision as only a limited setback. The agency reasoned that although the bubble concept was legally unacceptable in the NSPS context, it might fit very nicely in a different arena. The chosen stage for the second appearance of the bubble concept was the 1978 prevention of significant deterioration (PSD) regulations, required by the newly enacted Clean Air Act Amendments of 1977. While the ASARCO controversy was stirring in court, Congress amended the 1970 Clean Air Act. One of the most important of the new amendments was the adoption of the judicially created non-degradation policy. According to the new Act, areas in which

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83 "Although the EPA interpretation was overturned by a United States court of appeals . . . there is no reason to believe that the Congress in late 1977 did not regard the definition which had existed as law since 1975 as being well suited to its purposes in the PSD program." 43 Fed. Reg. 26,380, 26,394 (1978).


86 ASARCO was actually decided after the 1977 Amendments were passed, but the court based its opinion on the 1970 version of § 111. The two versions of this section are virtually identical in the relevant parts.

87 The Clean Air Act Amendments said nothing about air quality planning in areas that were cleaner than the national ambient air quality standards. EPA promulgated contradictory regulations in response to this legislative vacuum. In one set of regulations the agency announced that no significant deterioration of air quality would be allowed in such clean air areas. 36 Fed. Reg. 22,384 (1971). In another set of regulations the agency said air quality could deteriorate to the secondary ambient air quality standards. 36 Fed. Reg. 11,398 (1971). In 1972, the Sierra Club and other environmental organizations sued EPA over these regulations, claiming no deterioration of air quality in clean air areas should be allowed. The District Court for the District of Columbia agreed in Sierra Club v. Ruckelshaus, 344 F. Supp.
air quality is cleaner than the national ambient air quality standards are not allowed to simply deteriorate up to the standards; they must stay clean, only being allowed small increments of air quality degradation under specified conditions.\textsuperscript{67} One of those conditions is that all major sources, that is, all sources with the potential to emit more than a specified amount of pollution,\textsuperscript{68} are subject to a technology-based emission limitation conforming to the "best available control technology" (BACT).\textsuperscript{69} This emission limitation is to be at least as stringent as the applicable NSPS.\textsuperscript{70} Major sources are also required to provide preconstruction monitoring and analysis of the air quality impact of the new polluter.\textsuperscript{71} The term "source," however, is not defined in this new section of the Clean Air Act. This and other questions were left to EPA to resolve by regulations.\textsuperscript{72}

\textsuperscript{67} The 1977 Act divides areas that are cleaner than the secondary NAAQS's into three classes. It then sets maximum allowable increases in ambient air pollution that vary according to the area classification. Clean Air Act § 162, 42 U.S.C. § 7472 (Supp. I 1977).

\textsuperscript{68} Only "major emitting facilities" are subject to the PSD conditions. The Act defines "major emitting facilities" in terms of two categories. First, if a source falls within a list of industry categories that are deemed to be especially significant polluters then it is major if it "emits or has the potential to emit one hundred tons per year or more of any pollutant." Id. § 169(1), 42 U.S.C. 7479(1). There are nineteen such categories listed in the Act. Id. Second, any other sources, regardless of industry type, are major if they "emit or have the potential to emit two hundred and fifty tons per year or more of any pollutant." Id. The new Act also subjects "modifications" of major emitting facilities to PSD review. Id. § 169(2)(c), 42 U.S.C. § 7479(2)(c).

\textsuperscript{69} Id. § 165(a)(4), 42 U.S.C. § 7475(a)(4).


\textsuperscript{71} Id. § 165(a)(7), 42 U.S.C. § 7475(a)(7).

\textsuperscript{72} EPA did so in June 1978. Two sets of regulations were promulgated at that time. First, the agency issued "Requirements for Preparation, Adoption, and Submittal of Implementation Plans," which described the minimum requirements states had to meet in setting up
In the new PSD regulations, EPA did two things that bore a striking resemblance to the NSPS bubble concept. First, it gave an expansive definition of the term “source.” The regulations interpreted the word to mean “any structure, building, facility, equipment, installation, or operation (or combination thereof). . . .” Second, regarding “modifications” of sources, the agency said that BACT and preconstruction air quality monitoring would not be required if “zero net emissions would attend the change.”

In other words, like the pre-ASARCO NSPS regulations, existing sources undergoing equipment modifications could avoid stringent, expensive control requirements if offsetting emission reductions were developed under the “bubble” of the same plant. Newly constructed sources of any size were still, in accordance with ASARCO, subject to applicable NSPS’s, and newly constructed major sources in a clean air area were required to meet the BACT requirement.

EPA added one qualification. If a modification involved a piece of equipment that produced too much pollution, then the BACT requirement applied regardless of any offsetting emission reductions a firm could arrange.

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state PSD programs. 43 Fed. Reg. 26,380 (1978). Second, EPA published “Approval and Promulgation of State Implementation Plans,” which set out the federal PSD plan to be in effect until such time as a state plan has been adopted. 43 Fed. Reg. 26,388 (1978). The two regulations are identical, hence, for the sake of convenience, only the latter will be cited herein.

73 Id. at 26,404.
74 Id. at 26,394.
75 The definition of too much pollution in this case depended on the type of industry involved. If the source was one of the nineteen listed in § 169(1) of the Clean Air Act then the bubble concept should not be used when the modification produced 100 or more tons per year of any pollutant. If, on the other hand, the source did not fall into one of the special industry categories then the bubble could not be used when the modification produced 250 or more tons per year.

An example will clarify. Return to the example of XYZ Steel Co. with its 500 tons per year steel mill and a planned 200 tons per year modification. Assume that the steel mill is located in an area currently cleaner than any secondary NAAQS. Assume also that there has been no new source performance standard promulgated for the type of new smelter that is to be installed. The company would like to apply the bubble concept and arrange 200 tons per year of emission reductions elsewhere in the steel mill to make room for the new 200 tons per year smelter. If the company were allowed to do this it could avoid expensive PSD review because there would be no net emissions increase from the plant taken as a whole. But the EPA regulations would not have allowed this to take place. A steel mill is one of the special industry categories listed in § 169(1). If a modification of one of those listed industries were to exceed 100 tons per year of any pollutant irrespective of offsetting emission reductions elsewhere, then the bubble concept cannot be invoked. XYZ’s new smelter is projected to emit 200 tons per year of sulfur dioxide. The modification being too large, the
This application of the bubble concept was also challenged in the court of appeals by industry and environmental petitioners. Once again, industry representatives bemoaned the fact that the bubble concept was not applied broadly enough. And the environmentalists, harking back to the ASARCO decision, claimed any version of the bubble concept would be illegal.

EPA defended its version of the bubble concept with mostly vague references to the purpose of the Clean Air Act and its PSD sections. It also cited section 169(1), which defined "major emitting facility" in terms of such "sources" as mills, refineries, smelters, and plants. All of these terms, the agency argued, suggest that "source" refers to groups of polluting units.

company cannot apply the bubble concept, and the requirements of BACT, monitoring, etc. will have to be met. If the smelter were projected to emit 99 or fewer tons per year, the bubble concept could be applied under EPA's regulations, and the PSD review requirements could have been avoided.

77 Brief for Industry Petitioners on the Major Modification and Bubble Concept Issue [sic] at 22-27, Alabama Power Co. v. Costle, 13 E.R.C. 1993 (D.C. Cir. 1979). "[T]here is simply no need to impose such a regulatory burden and its accompanying cost and delay upon sources which do not increase emissions and which often improve and enhance rather than deteriorate air quality." Id. at 27-28.
80 For example, in defending the use of its limited version of the bubble concept EPA simply stated, "a total exemption from the section 165 requirements would contravene the basic purposes of the 1977 Amendments." Id. at 96. What are those purposes? EPA did not say. It did not even cite the 1977 Amendments. The agency did, however, cite a portion of the legislative history that stated that the purposes of the PSD regulations include "a framework for stimulating improved control technology; protection of air quality values; and fulfillment of the goals set forth in the purpose provisions." H.R. REP. No. 564, 95th Cong., 1st Sess. 151 (1977) quoted in Brief for Respondents, supra, at 96. There was no discussion of why the bubble concept does not comply with these purposes.

Similarly, EPA argues for its definition of "modification" by commenting that "the definition and the use of the term in the regulations are entirely consistent with the intent of the Act." Again, there was no elaboration as to what exactly constitutes the intent of the Act and why the EPA regulations are consistent. Id. at 98.

The agency also cited ASARCO as support for its use of the bubble concept. The case, said EPA, "upholds the use of the bubble concept in PSD preconstruction review. The stationary sources to which section 165 preconstruction review requirements apply are not single facilities, but are combinations of facilities." Id. at 92. This assertion is puzzling indeed, since Judge Wright's opinion stated quite clearly that any version of the bubble concept would be illegal. ASARCO, Inc. v. EPA, 578 F.2d 319, 329 (D.C. Cir. 1978).
82 Brief for Respondent, supra note 79, at 96.
The court, in *Alabama Power Co. v. Costle,* a decision that involved a great number of important PSD issues, grappled with the contention of all three sides and came to a series of rather surprising conclusions. Since the PSD sections of the Act contained no definitions of the term "source," the court first looked for a statutory foundation for its opinion. It found such a basis in section 111(a)(3), the new source performance standard definition of "source." Why section 111(a)(3) when it clearly came from a non-PSD section? The court gave two reasons. First, other parts of the PSD sections expressly incorporate NSPS definitions for definitional purposes. The section 111 definition of "modification," for instance, is plainly incorporated by section 169. Second, the court expressed concern that the meaning of the term "source" should be consistent throughout the Clean Air Act. Using this reasoning as justification, the court then compared the wording of the section 111(a)(3) definition of "source" with the definition included in the EPA PSD regulations. The EPA regulations included three terms—"equipment," "operation," and "combination thereof"—that section 111(a)(3) did not. Consequently, the court held, EPA's inclusion of the extra verbiage was unsupportable. Yet the *Alabama Power* court did not rule that "source" does not encompass combinations of polluting activities. On the contrary, it expressly disavowed this conclusion. Combinations of polluting units can be included under the regulatory rubric of "source," but only if the statutory language is adhered to. Although EPA cannot expand on the statutory components of "source," it is free to define quite expansively the source compo-

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83 The case is a consolidation of thirty-seven different lawsuits involving over two dozen separate issues of statutory interpretation covering nearly every aspect of EPA's 1978 PSD regulations. For an analysis of the case see Landau, *Alabama Power Co. v. Costle: An End to a Decade of Controversy over the Prevention of Significant Deterioration of Air Quality?* 10 ENV'TL. L. 585 (1980).
88 "Given no expression of any contrary intent in the Act or in the legislative history regarding these definitions, we must assume that the meaning of a particular term is to be consistent throughout the Act." *Alabama Power Co. v. Costle,* 13 E.R.C. 1993, 2039 (D.C. Cir. 1979).
89 Id.
90 Id.
91 Id.
ponents themselves. The terms "facility," and "installation," for example, could be interpreted broadly enough to encompass an entire plant.\textsuperscript{99} This is exactly the same language that appeared in Judge Wright's footnote and in Judge MacKinnon's dissent in \textit{ASARCO}.\textsuperscript{99} Indeed, the \textit{Alabama Power} opinion cited \textit{ASARCO} for this proposition.\textsuperscript{94} Yet, \textit{Alabama Power} came to an entirely different conclusion as to the validity of the bubble concept.

The court considered the bubble issue more directly in ruling on EPA's treatment of the term "modification."	extsuperscript{95} EPA's PSD version of the bubble concept, which limited its application to "modifications" under a certain size to the exclusion of new construction and large modifications, was invalidated. Over the objections of the environmentalists, the court said that EPA had no authority to condition the use of the bubble concept in this manner.\textsuperscript{96} Still, the industry petitioners' position was not adopted without some qualification. The court inferred two preconditions from the Clean Air Act. First, any emission reductions to be used in a bubble exchange must be "substantially contemporaneous."\textsuperscript{97} Second, the offsetting changes must be within the same source.\textsuperscript{98} Upon what section of the Act the court relied for the creation of these two conditions is a mystery, for none are cited. The latter condition arguably follows from the definition of the bubble concept itself, since \textit{intra-source} tradeoffs are the focus of the concept. The former condition, however, gives reason to pause. Why should the exchanges be required to be contemporaneous? Why could not a source create an emission reduction at a convenient time and save it for later use? There would, in such a case, be no difference in air quality. If anything, the air quality would be worse under the court's rule, since there is no incentive to reduce emissions early on. Sources are, in fact, encouraged to wait until emissions reductions can actually be consumed, the latest possible moment. The issue is quite similar to that of "banking" emission offsets under the EPA nonattainment offset policy.\textsuperscript{99} Under that policy states are allowed to permit

\textsuperscript{99} \textit{Id.}
\textsuperscript{99} See text accompanying notes 42-55 supra.
\textsuperscript{95} \textit{Id.} at 2042-45.
\textsuperscript{96} \textit{Id.} at 2042.
\textsuperscript{97} \textit{Id.} at 2044. The court expressly declined to define this term. \textit{Id.}
\textsuperscript{98} \textit{Id.}
saves sources to save emission reductions for use at some later date. The court, however, did not say why the banking of emission reductions should be treated differently in such similar contexts.

As for the environmentalists’ contention that there should be no bubble concept at all, the court responded with two assertions: first, that Congress intended the bubble concept to be included in the PSD regulatory context and second, that ASARCO was not controlling here. The first assertion was not supported by any specific reference to the Clean Air Act, but rather by an appeal to the scheme of the PSD part as a whole. Congress recognized, the opinion stated, that industrial plants undergo certain routine alterations almost continuously. The legislature did not intend that each and every one of these routine changes should be accompanied by PSD review, especially if the routine change was accompanied by a simultaneous offsetting emission reduction elsewhere in the same plant. The court stated that the purpose of the PSD sections is to regulate increases in pollution. With the bubble concept no increases would ever occur. “Congress,” the court said, “wished to apply the permit process... only where the industrial changes might increase pollution in an area, not where an existing plant changed its operations in ways that produced no pollution increases.”

Although the conclusion is laudable, the reasoning is somewhat circular. True, the PSD part is intended to apply only to increases. But whether or not there is an increase depends upon whether the bubble concept is allowed in the first place. Whether or not there is an increase depends upon how the term “source” is defined. Here the court seems to make a fundamental mistake in reasoning. The bubble concept does not derive from the term “increase,” but rather from the term “source.” The fact that the court had already ruled that EPA could effectively define “source” to include combinations of polluting activities made the court’s discussion of increases and PSD purposes rather academic, if not confusing.

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102 Id. at 2044.
103 Id. at 2043.
104 Id., citing Clean Air Act § 160(5), 42 U.S.C. § 7470(5)(Supp. I 1977), which states that the PSD program is intended to “assure that any decision to permit increased air pollution in any area... is made only after careful evaluation of the consequences of such a decision...” (emphasis added).
Since the real crux of the issue depends on the term "source," and the court resolved that issue in favor of the bubble concept, the question becomes what happened to the ASARCO decision in *Alabama Power*? The two cases seem to flatly contradict one another. Both interpreted the section 111 definition of "source," yet came to different conclusions as to the validity of the bubble concept.

The court gave four reasons why it thought there was no conflict between ASARCO and *Alabama Power*. First, there is a difference between the regulations involved: "[t]he present EPA regulation [PSD] allows offsets within a 'source'; it does not, in light of our decision in this case, allow offsets within any 'combination of facilities.'"108 This argument, by itself, begs the question as it neglects the matter of why the ASARCO bubble policy could not also have been fashioned out of the term "source" when the identical language was involved.

The second reason proffered was that the ASARCO case only stated that the bubble concept was not appropriate to the NSPS program, "but such is clearly not the case with PSD."107 The court offered no further illumination on this point. It is especially unconvincing in light of the fact that the ASARCO court was very clear in expressing its sentiments regarding the bubble concept. Any version of the bubble concept was regarded as incompatible with the purposes of the Act.108

The third reason for distinguishing ASARCO was that the express purpose of PSD is to ensure that economic growth considerations are compatible with clean air constraints.109 The bubble concept, the court opined, is "precisely suited" to this purpose.110 This however, is a *non sequitur*. It does not follow that because a given mechanism is suited to the purpose of the Act, it is therefore sanctioned by the Act. Intermittent control strategies, for example, are arguably suited to the "economic considerations" purpose, yet they have been expressly disallowed.111

The final distinction between the two cases with respect to the

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106 Id. at 2044.
107 Id.
108 See note 37 and accompanying text supra.
111 Kennecott Copper Corp. v. Train, 526 F.2d 1149 (9th Cir. 1975).
bubble issue is most troublesome. Congress, the court noted, was aware of the bubble regulations at issue in ASARCO when it enacted the 1977 Amendments. And although the court was “reluctant” to go so far as to say that Congress expressly approved the NSPS bubble concept, still it noted “the Conference Committee approved the congressional policy as enacted at that time in existing EPA regulations.”

The court did not elaborate. This is unfortunate, for it is difficult to understand why, if Congress approved the existing EPA regulations, the ASARCO court held them invalid.

The four reasons given by the court simply do not add up. There is too much similarity between the cases for ASARCO to be ignored. That is not to say that the court erred in approving the bubble concept. On the contrary, the court’s holding on the source definition issue settled the question as a matter of statutory construction. But there remains a conflict between ASARCO and Alabama Power that the court neglected to adequately handle. The court should have acknowledged the conflict and overruled ASARCO.

As a result of the Alabama Power decision, EPA has recently adopted revisions to the PSD regulations. In the new regulations, EPA has followed very closely the suggestions of the court of appeals. The terms “equipment,” “operation,” and “combination thereof” have been deleted, and in their places the agency has offered new definitions of “building, structure, facility, or installation,” the terms used by the Clean Air Act. Those terms, according to the new regulations, include a “grouping of activities on contiguous or adjacent properties and under common control.”

In addition, the special conditions attending the use of the bubble concept or modifications were excised in response to the court’s decision.

As a result, it appears that the first full blown, court-sanctioned bubble policy lies just around the corner, now that comments have been received and final regulations have been promulgated by EPA.

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115 Id. at 52,731.
116 Id.
117 Id. at 52,699. See text at note 75 supra.
118 EPA asked the court of appeals for a stay until June 1, 1980, to give the agency time
C. Nonattainment Area New Source Review

The similarities between the bubble concept and the EPA emission offset policy are often noted. Both do involve tradeoffs of emission reductions in one area for emission increases in another. However, the two concepts are not totally identical, and the differences between them have resulted in the bubble concept having limited application in the nonattainment context.

The emission offset policy originated in 1976 as a result of the apparent conflict between the 1970 Clean Air Act nonattainment provisions and the necessity for some sort of economic—particularly industrial—development in areas that violated the national ambient air quality standards. To avoid the economic crunch that would attend a no-growth policy, EPA fashioned in an interpretive ruling a system of emission tradeoffs. New or expanding polluters could be allowed in nonattainment areas pro-

118 See, e.g., Clark, supra note 7, at 1316-18; Landau, Who Owns the Air? The Emission Offset Concept and Its Implications, 9 ENVTL. L. 575, 583 (1979).

119 Actually the concept may have originated earlier than that. In 1974, the Oregon Department of Environmental Quality proposed that new sources should be allowed to locate in nonattainment areas if they could clean up existing pollution enough to make room for the pollution to be added by the new source. Pollution Tradeoffs Proposed, Oregon Journal, Oct. 10, 1974, at A4, col. 1. In 1976, an amendment to the Clean Air Act was proposed by steel industry advocates that was substantially similar to the Oregon suggestion. The amendment was very controversial, however, and the 1976 legislative session adjourned before action could be taken on the tradeoff proposal. See R. LIROFF, AIR POLLUTION OFFSETS: TRADING SELLING AND BANKING 6 (Conservation Foundation Issue Report 1980).

110 The 1970 Amendments simply required that states “prevent the construction or modification of any new source . . . which the state determines will prevent the attainment or maintenance of national ambient air quality primary or secondary standards.” Clean Air Act Amendments of 1970, § 110, 84 Stat. 1680 (1970). The 1970 Amendments seemingly made no provision for the possibility of additional pollution in a nonattainment area. See Costle, Reasonable Goals for SIP Revision, 29 J. AIR POLL. CONT. A. 6 (1979). EPA’s offset policy attempted to resolve the apparent conflict between growth and nonattainment. 41 Fed. Reg. 55,524 (1976). On the development and substance of the emission offset policy see LIROFF, supra note 119; Landau, supra note 118; Quarles, supra note 64, at 15-22; Raffle, supra note 52, at 6-47; Raffle, supra note 64, at 6-10; Rosenburg & Friedman, Air Quality and Industrial Growth: The Location of New Sources of Pollution in Non-Attainment Areas, 11 NAT. RES. L. 523 (1979); Comment, The Trade-off Policy: Solution to the Dilemma of the Clean Air Act? 1 HARV. ENVTL. L. REV. 352 (1976).

vided, among other things, the new polluters arranged sufficient emission reductions in the geographic vicinity to more than offset the pollution that the new industry would introduce. The 1976 interpretive ruling did allow an expanding source to offset new emissions by creating "offsets" within the same plant, however, the ruling still required a net benefit in air quality to result from the transaction. A simple one-to-one tradeoff, as allowed in the bubble concept, was not permitted. The ruling also provided a special emission limitation and other requirements for new sources locating in nonattainment areas, which could not be avoided by a bubble-type tradeoff.

In 1978, EPA began to consider modifying the emission offset interpretive ruling to conform to the 1977 Clean Air Act Amendments. At that time several EPA staff members suggested that

123 The other requirements included compliance with a technology-based emission limitation conforming to the "lowest achievable emission rate," compliance with all applicable SIP requirements at other plants under common ownership, and a "net benefit" to ambient air quality in the affected area at the conclusion of the tradeoff. Id. at 55,528-29.
124 Id. at 55,526.
125 It should be noted that in many cases the emission reductions can be obtained by improvements in a facility already owned by the developer of the source. This would be particularly true in cases where the new emissions would come from the expansion of an existing source. . . . It should be stressed that this ruling is not a "status quo" or one-for-one emission rule.
126 See note 122 supra.
127 For an example of the impact of EPA's policy reconsider the XYZ Steel Co., with its 200 tons per year proposed smelter. Assume that the steel mill is located in an area that currently violates primary standards for sulfur dioxide, the major pollutant emitted by the steel mill. Assume also that no new source performance standards have been promulgated for the type of smelter involved. If the bubble concept could be applied, XYZ Co. would simply reduce the sulfur dioxide pollution from the steel mill by 200 tons per year. The smelter could then operate free of any special emission limitations or other requirements, as long as the total emissions output of the steel mill taken as a whole does not increase. EPA's offset policy, however, would not have allowed this to occur. Under the offset policy the steel mill would have to arrange more than 200 tons per year offsetting emission reductions. The emission reductions, in fact, would have to be sufficient to present a net benefit to ambient air quality. In addition, the new smelter would have to apply enough control technology to keep its emissions to the "lowest achievable emission rate."
128 The 1977 Clean Air Act Amendments expressly adopted the EPA offset policy, but only on an interim basis. The new act provides that EPA's interpretive ruling will remain in effect only until July 1, 1979. By that time states are required to include in their state implementation plans their own mechanism for accommodating growth in nonattainment areas. Clean Air Act § 129, codified as a footnote to 42 U.S.C. § 7502 (Supp. I 1977). The only minimum requirements the states must adhere to are that new sources must comply with the lowest achievable emission rate limitation and that "reasonable further progress" towards the attainment of federal air quality standards not be threatened at any time. Id. §
the bubble concept should be included in the new regulations.\textsuperscript{128} Several others in the agency however, notably Assistant Administrator David Hawkins, expressed great reluctance to apply the bubble concept to any nonattainment programs.\textsuperscript{129} After several months of intra-agency bickering, a compromise was reached.\textsuperscript{130} The bubble concept would not be allowed in the federal offset policy, but states would be free to adopt any system of tradeoffs they might desire in their state implementation plans. This compromise, and the policy justifications for it, appear in the revised emission offset interpretive ruling, promulgated in January, 1979.\textsuperscript{131} The agency stated that prior to approval of a SIP, there is no guarantee that air pollution will be reduced sufficiently to meet Clean Air Act requirements. Therefore, until the SIP is approved, "the need to reduce new emissions through [emission offset] requirements is particularly great. . . . "\textsuperscript{132} Once the SIP has been approved, there is a statutory guarantee that reasonable further progress will be made toward the attainment of federal standards.\textsuperscript{133} Therefore, states should have more freedom to allow the trading of emission reductions, the goal of meeting standards being in no way threatened by the use of the bubble concept.\textsuperscript{134}

This policy was reiterated in the new PSD regulations promulgated after the publication of the Alabama Power decision.\textsuperscript{135} De-
spite the court’s approval of the bubble concept in the PSD program, EPA stood firm in its rejection of the concept in the federal offset policy, considering its previously stated reasons for excluding the bubble concept from the federal offset policy still valid.\textsuperscript{136}

EPA’s policy seems rather anamolous. On the one hand, the agency wants to discourage using the bubble concept in nonattainment areas, at least until revised SIP’s are approved. On the other hand, it wants to encourage states to use the bubble concept in the same nonattainment areas after the SIP’s are approved.

The encouragement of the adoption of a bubble policy turns on the existence of an approved SIP. The reason for this, according to EPA, is that there is no guarantee that states will reduce their air pollution without an approved SIP. The agency failed to articulate what it is about an approved SIP that guarantees pollution reduction. The fact is that there are considerable guarantees that states will do their utmost to reduce pollution in their nonattainment areas, regardless of when the SIP is approved. There are deadlines to meet and standards to attain, and they do not vary according to the date of SIP approval.\textsuperscript{137} If these fixed standards and deadlines are not complied with, states are subject to citizen suits,\textsuperscript{138} injunctions,\textsuperscript{139} and the loss of large amounts of federal financial assistance.\textsuperscript{140}

Even if this were not the case, the worst that could happen under a bubble policy is that air quality would not change. Under all versions of the bubble concept drafted so far air quality is never allowed to deteriorate.

Fortunately, the policy is of limited effect. The use of the bubble concept is only temporarily disallowed. Still, the policy cannot be helpful; it can only create ambivalence and uncertainty in applying the bubble concept in other regulatory areas.

merely to prevent excessive increases in emissions but to reduce emissions. This fundamental difference in purpose requires a different approach in defining the sources that will be subject to new source review.” 44 Fed. Reg. 51,924, 51,932 (1979).

\textsuperscript{136} Id.

\textsuperscript{137} The deadline for all states to meet the primary NAAQS’s is December 31, 1982. Clean Air Act § 172(a)(1), 42 U.S.C. § 7502(a)(1)(Supp. I 1977). There is an extension of five years available for the attainment of the ozone and carbon monoxide standards, but only if a long list of special conditions is satisfied. Id. § 172(a)(2), 42 U.S.C. § 7502(a)(2).

\textsuperscript{138} Id. § 304, 42 U.S.C. § 7604.

\textsuperscript{139} Id. § 113(a)(5), 42 U.S.C. § 7413(a)(5).

\textsuperscript{140} The Administrator of EPA can withhold federal highway assistance (other than for safety or mass transit projects), id. § 176, 42 U.S.C. § 7506, and federal sewage treatment grants, id. § 306, 42 U.S.C. § 7616.
D. Revised State Implementation Plans

As mentioned above, the price of deleting the bubble concept from the offset policy was allowing states the freedom to make use of the bubble in regulating pollution under an approved SIP. Consequently, on December 11, 1979, EPA issued a policy statement defining exactly how states are allowed to apply the bubble concept, or as EPA terms it, the "alternative emission reduction option." \(^{141}\)

According to the Clean Air Act, states are required, through the SIP, to control pollution from new and existing sources so as to provide for the expeditious attainment of the national ambient standards. \(^{142}\) In doing so, states are allowed to define the quantity of emissions permitted from a single source, the types of control equipment that must be installed, and the timetable for meeting those requirements. \(^{143}\) In practice, states often do not establish these requirements as economically as possible. A bubble concept applied to this process would allow the states to define the maximum amount of pollution allowed from a plant, but would leave to the plant managers the decisions as to what means should be applied to achieve the required emission reductions. \(^{144}\)

This is exactly what the new bubble policy statement allows. It provides businesses the opportunity to come forward with their own mix of pollution abatement strategies that will result in emission reductions at the least cost. The policy statement is, however, carefully worded to avoid every conceivable possibility of abuse. \(^{145}\) As a result, most of the text is devoted to numerous conditions and limitations imposed on the use of the bubble concept—so many, in fact, that some commentators claim the practical effectiveness of this version of the bubble concept may be severely constrained. \(^{146}\)

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\(^{142}\) States are required to include in their SIP's "emission limitations, schedules, and timetables for compliance with such limitations and other such measures as may be necessary to insure the attainment and maintenance of NAAQS's." Clean Air Act § 110(a)(1)(A), 42 U.S.C. § 7410(a)(1)(A)(Supp. I 1977).

\(^{143}\) Id.

\(^{144}\) For an example of how the bubble concept would apply in this context see text accompanying note 8 supra.

\(^{145}\) See 9 Envir. Rep. (BNA)(Curr. Dev.) 1611 (Dec. 29, 1978) for Assistant Administrator David Hawkins's comments on the need for such conditions and limitations.


While the states have some leeway, it is clear that most of the issues were resolved in
Most of the conditions, however, are not totally uncalled for. Some of them serve to prevent environmental degradation that would occur if the concept were to be carelessly applied.

Under this new bubble policy, any new or existing source, in a clean or dirty air area, is eligible to suggest different control requirements than those set out in the SIP (EPA suggests that this be accomplished at the source’s expense.\(^{147}\)) provided the source is currently in compliance with all applicable SIP requirements.\(^ {148}\) If the source is not in compliance then it must either get into compliance or be on an EPA or court-approved compliance schedule.\(^ {149}\) The agency expressed concern that the bubble policy not be used as a delaying tactic to avoid controls and “increase the inequity between sources that have incurred the expense and difficulty of compliance and those that have so far avoided compliance.”\(^ {180}\)

Once an alternative emission reduction option has been proposed, the state or local air pollution control agency must evaluate it against a number of EPA-defined criteria. First, the proposal must not in any way compromise the state’s reasonable further progress toward the attainment of federal ambient standards. Even if the total emissions would not increase under an alternative proposal, it must be disapproved if any violation of the requirement of annual incremental reductions of ambient pollution results.\(^ {181}\) The problem here, of course, is making the leap from emissions to ambient air quality. A smoke stack emitting 100 tons of a given pollutant does not necessarily increase the ambient concentration of the same pollutant by a like amount. Consequently, even though the bubble policy is framed in terms of trades in emissions, always

favor of bureaucratic caution rather than substantial reform. In part, this outcome can be ascribed to a lingering distrust of industry. That attitude was apparent when the agency announced to the press that it had adopted the bubble policy. David Hawkins, an assistant administrator, characterized the agency’s actions as telling industry: “Here’s some responsibility. Demonstrate that you are mature enough to use it.”

Such arrogance would be easier to abide if responsibility were truly bestowed. The steel industry had wanted EPA to set a pollution limit for each plant and let the companies decide how to meet the standards—and bear the responsibility in court. But the announced policy requires a company to prove in advance that its system will work (while EPA reserves the right of preemptive veto). Rather than being reduced, bureaucratic oversight will be increased.

Nulty, supra note 2, at 123 (emphasis supplied).


\(^ {148}\) Id. at 71,781.

\(^ {149}\) Id. at 71,781-82.

\(^ {180}\) Id. at 71,781.

\(^ {181}\) Id. at 71,782-83.
lurking in the wings is a ground rule that attainment of ambient standards must not be endangered.

For the same reason, a second requirement that emission trades be "even,"\textsuperscript{153} carries with it a qualification. An even, one-for-one trade will suffice only if attainment is in no way threatened. If it is found that standards will be threatened, then something greater than a one-for-one ratio will be required.\textsuperscript{153} For example, where stack heights differ, diffusion characteristics will vary (the higher the stack the more easily diffused the emissions) and some adjustment may be required.

A third condition is that all emissions involved in the alternative proposal must be quantifiable.\textsuperscript{154} This is to make verification of the actual emission reductions by the state control agency (and later, EPA) easier. The policy states a preference for direct measurement (monitoring), although it allows indirect measurement (modeling)\textsuperscript{154} if a "clear and convincing link between the emissions and other quantifiable measures is demonstrated."\textsuperscript{156} In other words, untested, experimental modeling techniques will not be permitted; only standard, accepted measurement practices will be approved.

Fourth, the pollutants traded must be "equivalent."\textsuperscript{157} They need not be chemically identical, however trading between criteria categories (for example, trading sulfur dioxide emissions for carbon monoxide emissions) is not allowed.\textsuperscript{158} The main concern is that the reasonable further progress requirement not be compromised. EPA warned that it will pay close attention to trades involving particulates, especially fugitive dust, because of equivalency and verification problems.\textsuperscript{159}

\textsuperscript{153} Id. at 71,783.
\textsuperscript{154} Id.
\textsuperscript{155} Id.
\textsuperscript{156} Monitoring refers to the actual sampling of air pollution concentrations at a given location and a given time. Modeling, on the other hand, is a mathematical projection of pollution concentrations based on known variables like pollution emission inventories, meteorological regimes, and topography. There are a number of different types of models, of varying reliability. The differences lie in the number of variables taken into consideration, and the relative weight accorded to each. See 1 A. Stern, AIR POLLUTION 3-15, 215-19 (2d ed. 1968); C. Stewart, AIR POLLUTION, HUMAN HEALTH, AND PUBLIC POLICY 12-13, 66-68 (1979); U.S. EPA, GUIDELINES ON AIR QUALITY MODELS at A1-A34, 48 (1978); Kramer, Air Quality Modeling: Judicial, Legislative, and Administrative Reactions, 5 COLUM. J. ENVTL L. 236 (1979).
\textsuperscript{158} Id. at 71,784.
\textsuperscript{159} Id.
\textsuperscript{159} Id. at 71,783.
Finally, the adoption of an alternative emission reduction plan must not result in any delays in meeting existing compliance orders, enforcement actions, or court decrees.\textsuperscript{160} Again, the agency expressed concern that the policy not be used as a way to thwart air pollution control laws.\textsuperscript{161}

If an alternative emission reduction plan is approved by the state enforcement agency, then it must be proposed as a formal revision of the SIP and must be approved by EPA.\textsuperscript{162} The control plan, being part of the SIP, then becomes a mandatory, legally enforceable emission limitation.\textsuperscript{163}

In addition to these requirements, EPA emphasized several important points throughout the policy statements. The bubble policy can be applied only if the SIP has been approved and the state maintains reasonable further progress towards the attainment of the federal standards.\textsuperscript{164} To this general statement, however, there is one major exception. Under certain undefined circumstances, EPA will allow the use of the bubble concept for the control of ozone, despite a state's failure to demonstrate attainment of the ozone standard by the statutory deadline. In this case an emission limitation conforming to "reasonably available control technology" is required, and the bubble may be used to define how that limitation is to be achieved.\textsuperscript{165}

The bubble policy statement has nothing whatsoever to do with either the PSD regulations or the NSPS's: "This policy applies only to emission limitations approved or promulgated as a part of a SIP. It does not apply to BACT, LAER, NSPS, or other conditions specifically required by the Act."\textsuperscript{166} In the case of PSD the bubble is applied in a completely different way. Under the new regulations firms will be allowed to offset emission increases with emission reductions in the same plant to avoid having any emissions increases from the plant. The bubble policy statement does not deal with the avoidance of emission increases. It deals only with how existing emissions will be controlled. Likewise, the NSPS's regulations are unaffected. The bubble policy statement

\textsuperscript{160} Id. at 71,784.
\textsuperscript{161} Id. at 71,785.
\textsuperscript{162} Id. at 71,786.
\textsuperscript{163} Id. at 71,786.
\textsuperscript{164} Id. at 71,782-83.
\textsuperscript{165} EPA provided no explanation for this exception. Id. at 71,781.
\textsuperscript{166} Id. at 71,786.
One final provision is worth noting. EPA, in response to a number of comments, provided that the bubble policy is not limited in its application to a single plant. More than one plant may be included under the imaginary bubble as long as the plants are in the same area. However, it must be demonstrated through modeling that air quality will not be adversely impacted by applying the bubble concept so broadly.¹⁸⁷

On the whole, this policy statement offers exciting possibilities in the area of "controlled trading"¹⁸⁸ of emission reductions. The policy is broadly defined and opens the door to industry to prove that it can do a better job of controlling pollution than the government regulators. This only makes sense. A federal agency cannot possibly have all of the information about a single source that would allow it to make the most efficient decision possible. Even the conditions placed on the bubble applicant for the most part seem reasonable. There are, however, some defects in the policy statement that may greatly hamper its effectiveness.

For example, the requirement that emissions trades must be equivalent as defined in the policy statement will likely lead to problems, if not litigation. Certainly no one should be allowed to trade an increase in a more harmful pollutant for a decrease in a more benign one simply because it is cheaper to do so. Moreover, firms should not be able to trade between pollutant categories, if for no other reason than it is probably illegal.¹⁸⁹ But what of trading increases in a benign pollutant within a certain category for increases in a more hazardous one in the same category? The policy does not address this problem, since the equivalence of trades depends not upon the consequent health effects but rather on the chemical similarity of the pollutants involved.¹⁷⁰ For all its usual

¹⁸⁷ Id. at 71,788.

¹⁸⁸ The term is EPA's label for several types of regulatory reform that are currently under consideration, among them banking and trading of emission offsets. See EPA Environmental News, Dec. 3, 1979, at 4.

¹⁸⁹ Sections 172 and 173 of the Clean Air Act clearly state that increases in emissions in nonattainment areas can be allowed only if annual incremental reductions in a pollutant category sufficient to represent "reasonable further progress" toward the attainment of standards are maintained. 42 U.S.C. §§ 7502-7503 (Supp. I 1977). The only way a bubble trade could result in a net increase in emissions of a particular pollutant would seem to be for the state to offset the emission increase with a comparable amount and type of emission reductions from a growth cushion. See note 127 supra.

concern for health and welfare, EPA seems to have overlooked an important point. More important, where did EPA get the authority to regulate pollutants within pollutant categories? EPA at great length explains how trades involving fugitive dust and fine particulates are subject to special scrutiny. It is as if there are special standards for fugitive dust and special standards for fine particulates. EPA mentions that part of its hesitancy to allow trades between fine and coarse particulates is that it may change current standards. The trouble is that at least for the time being, there is only one set of standards for particulates based on total weight, not particular size or impact possibility. Until EPA decides to change the standards themselves it does not seem consistent that the agency should be allowed to impose the additional requirements.

An even more troublesome requirement is the one that requires each alternative emission reduction proposal to be treated as a revision to the SIP. The requirement is expected to add a full year to the process of obtaining approval of an alternative plan. It should not be forgotten that during that time the source is supposed to maintain compliance with current limitations. EPA defends its reliance on case-by-case SIP revisions by stating that the agency is required to review all SIP revisions by the Clean Air Act. But the agency's rationale begs the question of why the bubble application would necessitate SIP revision in the first place. EPA has drawn considerable fire for its stand on this issue.

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171 Recent research has suggested that smaller particulates are far more dangerous than larger ones. While the larger particulates are generally captured by the natural filtering processes of the human respiratory system, the smaller particulates may be drawn deep into the lungs and remain there for a considerable amount of time, contributing to a variety of lung ailments. Fine particulates are also believed to be significant contributors to visibility degradation and acid rain. See generally F. Perera & A. Ahmed, Respirable Particles: The Impact of Airborne Fine Particulates on Health and the Environment (1978).


174 Will EPA Blow the Bubble Concept? 3 Legal Times of Wash. 1 (July 28, 1980).


176 In May, the Chemical Manufacturer's Association and some New Jersey member firms filed suit in the Third Circuit challenging EPA's rejection of the New Jersey SIP because it did not provide for EPA review of bubble applications. C.M.A. v. EPA, No. 80-1663. C.M.A. is claiming that the Clean Air Act provides the states with the discretion to approve bubble proposals and that EPA's decision infringes on the states' powers. The state of New Jersey may join in the suit. See Will EPA Blow the Bubble Concept? supra note 174; 11 Envir. Rep. (BNA)(Curr. Dev.) 421 (July 18, 1980).
There are even rumblings within the agency that this particular requirement might be changed.  

III. THE BUBBLE CONCEPT AND WATER POLLUTION CONTROL

The acceptance of the bubble concept in the air pollution control field has prompted a great deal of speculation whether the same concept could not be applied to water pollution control. The problem, of course, is that an entirely different statutory framework is involved, and the existence of unique legal problems may preclude the application of this cost-saving tactic to the water pollution control field. However, it should also be remembered that much commonality exists between the Clean Air Act and its clean water counterpart. Indeed, it is often noted how one has grown out of the other in various stages of development over the last twenty years. The case can be made for a water pollution bubble concept, but only if this broader perspective as to the relationship between the control programs is maintained. The Clean Water Act, adopted in 1972 and amended in 1977, uses tools similar to those in the Clean Air Act to rid the nation's waters of pollution: ambient standards and point source limitations. In the case of the Clean Water Act, though, the effluent limitations perform the ma-

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177 EPA has announced that it is considering avoiding case-by-case review of bubble applications by publishing additional criteria the states must follow before granting operating permits. 11 ENVIR. REP. (BNA)(Curr. Dev.) 421 (July 18, 1980).

178 "Repeatedly, the programmatic and regulatory features of the water pollution legislation reflect the legislative ideas applied to air pollution two years earlier." W. ROGERS, supra note 58, at 355 (1978). Rogers cites the use of criteria documents, state implementation plans, new source performance standards, ambient standards and citizen suits as some of many commonalities in federal air and water pollution control. Id.


major clean up work,\textsuperscript{181} while the ambient water quality standards form a second line of defense.\textsuperscript{182} Each "point source" is assigned through the "national pollutant discharge elimination system" (NPDES) permit process,\textsuperscript{183} a series of technology-based limitations on the amount of effluents that can be discharged. Over the course of a number of years, these effluent limitations become increasingly stringent\textsuperscript{184} until the goal of "no discharges" is ultimately attained.\textsuperscript{185} The question is whether the Clean Water Act defines the term "point source" in such a way as to accommodate the bubble concept. In other words, can the technology-based effluent limitations be applied to whole plants as opposed to individual pipes and processes, allowing firms to determine how to comply with the total allowable discharges? It is essentially the same question as that faced in \textit{ASARCO} and \textit{Alabama Power}. The special problem presented by the Clean Water Act is that in the general definition section "point source" is quite narrowly defined. Section 502(14) includes among other things "any discernible, confined and discrete conveyance" from which pollutants are emitted.\textsuperscript{186}

\textsuperscript{181} While improved water quality was, of course, the ultimate goal of the Act, it had proven to be a difficult basis for regulatory and enforcement action. It was recognized therefore that the problem of water pollution had to be dealt with at the point of discharge—i.e., at the industrial or municipal source. Hall, \textit{Clean Water Act of 1977}, 11 \textit{Nat. Res. L.} 343, 343 (1978).

\textsuperscript{182} The water quality standards are not necessarily federally imposed, nor are they uniform, nor are they solely health related, as in the case of the Clean Air Act. The Clean Water Act instead provides for "water quality related effluent limitations" for a "specific portion" of a navigable waterway to "assure protection of public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish, and wildlife . . . ." \textit{Clean Water Act} § 302(a), 33 U.S.C. § 1312(a)(1976). In addition, states are required to establish and periodically revise water quality standards for all navigable waterways in the state. \textit{Id.} § 303, 33 U.S.C. § 1313 (1976).


\textsuperscript{184} Existing sources, for example, are regulated in two phases. The first phase requires sources to comply with a technology-based effluent limitation conforming to "best practicable control technology currently available." This is supposed to be accomplished by July 1, 1977. \textit{Id.} § 301(a)(1)(A), 33 U.S.C. § 1311(a)(1)(A)(1976). Case-by-case extensions to 1979 can be granted by EPA. \textit{Id.} § 309(a)(5)(B), 33 U.S.C. § 1319(a)(5)(B)(Supp. I 1977). The second phase imposes a more stringent standard to be achieved generally by July 1, 1984. The exact nature of the standard varies according to three different categories of pollutants: industries that discharge toxic and "unconventional" pollutants must achieve the "best available technology economically achievable"; discharges of conventional pollutants must be controlled to the extent of "best conventional pollutant control technology." \textit{Id.} §§ 301(b)(2)(A) & 301(b)(2)(E), 42 U.S.C. §§ 1311(b)(2)(A) & 1311(b)(2)(E) (1976).

\textsuperscript{185} "It is the national goal that the discharge of pollutants into navigable waters be eliminated by 1985." \textit{Id.} § 101(a)(1), 33 U.S.C. § 1251(a)(1) (1976).

\textsuperscript{186} \textit{Id.} § 502(14), 33 U.S.C. § 1262(14) (1976).
EPA has neither proposed nor adopted a definition of “point source” that would allow the use of the bubble concept in the NPDES program. However, the matter has been the subject of hot debate within the agency itself.

The debate began with a memorandum from Joan Z. Bernstein, former EPA General Counsel, in the legality of a water pollution bubble concept. In this memo, General Counsel Bernstein aggressively defended this new application of the bubble concept. The crux of her argument was that although section 502(14) expresses a very limited definition of “point source,” the use of the term elsewhere in the Act suggests a much more expansive treatment. For example, section 306 requires new source performance standards for new “sources,” which are defined as “any building, structure, facility or installation . . . .” And the same section treats the terms “source” and “point source” synonymously. Moreover, she pointed out that the legislative history of the Clean Water Act often treated the term “point source” synonymously with the terms “industries” and “plants.” Finally, she argued that the D.C. Circuit Court of Appeals has applied the same reasoning. In American Food Institute v. Train the court commented on section 306 that “this same standard, i.e., best available technology, is mandated forthwith for all new plant construction (new point sources) . . . .”

The Bernstein memo was followed by a scathing critique from Edward Kurent, legal advisor to the EPA Enforcement Division.
The thrust of the Kurent memo was that ASARCO\textsuperscript{198} precluded any thought of a water pollution bubble concept. The fallacy of the Bernstein memo, it was argued, was in the apparent syllogism that she attempted to apply: “Presumably, General Counsel further concludes that ‘building, structure, facility or installation’ is synonymous with ‘plant.’ . . . Unfortunately, this syllogism will not withstand close scrutiny in light of ASARCO. . . .”\textsuperscript{197} ASARCO, said Kurent, concluded that a “building, structure, facility or installation” was not synonymous with an entire plant. The minor premise being fallacious, the entire syllogism falls.\textsuperscript{198}

The problem with Kurent’s analysis is that the minor premise is not false. In a footnote to the majority opinion, ASARCO expressly approved an EPA definition of the term “facility” that encompassed entire plants.\textsuperscript{199} This footnote was buttressed by identical statements in the text of Alabama Power, which cited the ASARCO footnote.\textsuperscript{200} The General Counsel’s syllogism, then, appears to be quite valid.

Kurent also criticized the Bernstein memo for its reliance on the wrong legislative history.\textsuperscript{201} All of the General Counsel’s citations were taken from the legislative history of the 1972 Act. This reasoning is rather elusive, since the sections referred to in the Bernstein memo, although from the 1972 Act, were not at all altered by the 1977 Amendments.

The memo also criticized the bubble concept as being contrary to the purpose of setting technology-based effluent limitations. Economic relief, said Kurent, is to be a factor only in setting the standards. Thereafter, economics is not to be a fair consideration within the statutory framework of the Clean Water Act.\textsuperscript{202} This, however, seems to misstate both the Act\textsuperscript{203} and the bubble concept. Economic considerations in setting the standards have nothing to

\textsuperscript{198} See text accompanying notes 30-46 supra.
\textsuperscript{197} Kurent Memo, supra note 195, at 1661.
\textsuperscript{199} Id.
\textsuperscript{200} See text accompanying notes 42-46 supra.
\textsuperscript{201} See text accompanying notes 90-94 supra.
\textsuperscript{202} Kurent Memo, supra note 195, at 1661.
\textsuperscript{203} Id.

\textsuperscript{203} For example, the Clean Water Act allows EPA to modify effluent standards on the basis on the economic capability of a firm to comply. See Clean Water Act § 301(c), 33 U.S.C. § 1311(c) (1976).
do with the bubble concept. The former involves setting the amount of allowable discharge, the latter merely allows some flexibility in meeting that standard. Economics would in no way lessen the responsibility of the polluter, as Kurent seemed to fear; it would simply allow the polluter to perform its obligation in the most cost-effective manner.

Finally, Kurent suggested that as a practical matter, EPA simply has considered the Clean Water Act's references to "point source" to mean anything but individual outfalls. "To suggest that a plant is a point source is to ignore the fact that a plant is a combination of point sources and has been treated as such by EPA for five years since the passage of the 1972 Amendments to the FWPCA." This is certainly true. In fact, Bernstein's memo conceded that current EPA regulations would have to be modified to accommodate a water bubble program. However, the fact that EPA has never considered the bubble concept in this context is not totally dispositive of the issue. There was no record of EPA allowing states to use the bubble concept in developing their SIP's. Yet the agency has enthusiastically promoted the application of the bubble concept in that area of pollution control. And despite the fact that EPA had not previously considered applying a bubble concept to its PSD program, it did so anyway. Indeed the Alabama Power decision expanded the applicability of the bubble concept in PSD regulations.

In the months that followed, further memos were exchanged on the subject. Each, however, basically voiced support for and reiterated the arguments of one or the other of the two memos described above. At one point, former Senator Edmund Muskie, ranking member of the Senate Committee on Environment and Public Works, received word of the EPA debate. Aggressively entering the fray, Muskie voiced strong objections to the idea of a water pollution bubble policy. Declaring that the policy "is not a legal option," he said it "has the potential of reversing progress already gained in pollution control, would be disruptive of clean-up efforts, and would make enforcement of the statute very diffi-

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204 Kurent memo, supra note 195, at 1661.
205 Bernstein memo, supra note 188, at 1660.
207 Memo to Senator Edmund Muskie from Sally Walker and Karl Braithwaite, EPA's Proposed Water Bubble Policy, reprinted in id. at 1901 (Feb. 2, 1979).
Why this would be the case, Muskie did not explain. The bubble concept, by very definition allows no increases in overall pollution from a source, so it is difficult to imagine how pollution control programs would be reversed or disrupted. As for enforcement problems, the senator has not suggested why Water Act enforcement would be any more difficult under a bubble policy than would Air Act enforcement.

All of this is not to say that there are no impediments to the adoption of a bubble concept in water pollution control programs. There are significant hurdles. The philosophy underlying the Clean Water Act is different from that of the Clean Air Act. There is an emphasis on effluent limitations, with ambient standards taking a decidedly secondary role. Too, there is a goal expressed in the Clean Water Act that ultimately there should be no discharge of pollutants at all.

Even these considerations, however, should not stand in the way of adopting a water pollution bubble policy. Simply because the Clean Water Act envisions an eventual no discharge standard does not mean that until that standard is realized the bubble concept should not be utilized. The bubble concept does not impede progress toward the ultimate no discharge goal; it simply provides industries the flexibility to determine the most cost-effective way to achieve it. Under the Clean Air Act, emission limitations become increasingly stringent as the state of pollution control technology develops. Yet, the bubble concept has not been viewed as an impediment to the development of those more stringent standards. If this is the case in air pollution control, there would seem to be no reason for different treatment in water pollution control.

Whether EPA will ultimately adopt a water pollution bubble policy is a good question. Memos exchanged in the last months of 1978 suggest that the problem is not whether a bubble concept will be applied, but in what form it will appear. Furthermore, EPA Administrator Costle's penchant for regulatory reform bodes well for the future of a water pollution bubble concept.

Still, no proposed policy has appeared in the last year. Whether EPA will be bold enough to do so remains to be seen. The agency

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208 Id. at 1815.
209 See note 181 supra.
210 See note 185 supra.
211 See note 184 supra.
212 See Costle, supra note 120, at 7.
did not fare well in its last major court challenge. Bernstein no longer works for EPA. And in an election year, it is hard to tell which way the chips will fall.

IV. CONCLUSIONS

Although often hailed as a new and innovative regulatory technique, the bubble concept has been around for quite a long time in one form or another. And it promises to be a permanent fixture in EPA's regulatory scheme. This development is to be applauded. The logic and economic good sense of the bubble concept are manifest. The concept is certainly more of a dream than a nightmare. By definition, the bubble concept maintains the quality of the nation's air and water, while allowing industries to meet government regulations as inexpensively as possible.

Still, there have been consistent challenges that the bubble concept has no place in the nation's pollution control efforts. Why these challenges continue is difficult to pinpoint, for there has been little explanation of the environmentalist position. In the courts, the main thrust of the opposition has been based on the ruling of the ASARCO case that the bubble concept is simply illegal. This foundation, as this article has attempted at some length to demonstrate, is not very helpful since the ASARCO case itself is seriously weakened by internal inconsistencies. Are there more practical reasons for the objections to the bubble concept? There do seem to be some noteworthy concerns.

First, there is a likelihood that the implementation of a bubble policy will entail significant personnel increases in state and federal enforcement agencies. Someone, after all, has to verify that trade-offs in emissions increases will in fact be comparable and permanent. No enforcement agency is likely to simply take the

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213 Most of the criticism has been fairly pointed but without much analysis. Consider, for example, W. Rogers, supra note 58, at 273 n.37, which states that the Clean Air Act does not make room for a bubble concept because "surely [it] does not mean to tolerate a horrendously controlled new facility because of a fortuity that has led to the coincidental shutdown of 90 percent of the other capacity at a given source." This is simply begging the question. The statement is of little help since there is no explanation or analysis to support it.

214 See text accompanying notes 78, 196-98 supra.

215 See text accompanying notes 42-44, 54-60 supra.

Second, there is concern that the implementation of a bubble policy will turn the standard-setting process into a series of bargaining sessions between agencies and industries, and that this is somehow inappropriate to the absolutes of the nation's health-based pollution control program. Some have expressed fear that in this bargaining process the permitting agencies, usually staffed by "relatively junior" personnel, will be subjected to undue pressure from affected industries.  

Third, there are references by bubble policy critics to threats of environmental degradation and potential public health hazards if the policy is supported. The exact nature of these threats, however, is never elaborated. Fourth, there are concerns that bubble transactions will be difficult to verify and to enforce. Firms could conceivably reduce pollution from one stack to make room for increases in another, and then after approval, simply increase both.

Finally, there seems to be a great deal of simple mistrust of the ability of industries to comply with the bubble policy in good faith. There is fear that firms will use the policy to avoid compliance as long as possible, that the bubble policy will only provide another tool with which businesses can prolong the litigation process.

These criticisms are not totally without foundation. However, they do not seem to provide sufficient reason to ignore the benefits that implementation of a bubble policy in any number of forms could provide.

Nearly every environmental quality program requires some amount of public outlay. If staffing considerations were controlling there probably would be a much different Clean Air Act. Moreover, the costs of staffing a bubble program must be weighed against the costs of not having a bubble program. Firms stand to save a great deal of money at no environmental cost. Since the public nearly always eventually bears the cost of controlling pollution, any reduction in the cost of that control should be a welcome event. Reference to the problems of dealing with junior personnel seems

117 Id.
119 Id.
somewhat specious. The only reason junior personnel are delegated the permitting job is that the process is rather perfunctory in most agencies. The simple answer to a change in the job description is to change the personnel.

In the same vein, the hazards of negotiating standards are probably overestimated. Negotiation of standards is certainly nothing new. NAAQS's\(^\text{221}\) and BACT,\(^\text{222}\) for example, have all been set after extensive debate over scientific evidence, energy implications, and economic impact. In that regard, the bubble concept would present no unique difficulty.

The concern with the preservation of environmental quality is an important one. But it is not easy to understand how the implementation of a bubble program would present a great environmental hazard. By very definition, the concept allows only trade-offs among like pollutants. Unequal trades are not allowed. The only possible environmental threat would come if EPA allowed trades of pollutants of unequal impact on the environment. In other words if an increase in a hazardous pollutant were to be traded for a decrease in a more benign one the net effect would be a greater threat to public health despite the equivalence in pollutant quantities. The answer to this potential problem is to proscribe trade-offs that would result in a net hazard to the public despite an even trade in pollution quantity. This is an important consideration but certainly not an insurmountable one.

The concern with potential verification and enforcement problems is a valid one. But it is certainly not sufficient reason to dispose of the bubble concept. In any type of pollution control verification and enforcement is a problem. There is always a risk of non-compliance. Indeed a certain amount of non-compliance could be virtually guaranteed. That does not stop most pollution control

\(^{221}\) Ambient standards are based on “such criteria and allowing an adequate margin of safety [as] are requisite to protect the public health.” Clean Air Act § 109(b)(1), 42 U.S.C. § 7409(b)(1)(Supp. I 1977). Exactly what is an “adequate margin of safety” and what is “requisite to protect public health” are the subjects of considerable debate in the case of each of the criteria pollutants. Moreover, there is evidence that presidential economic advisors may exert some influence over the standard setting function. For an example of the debates that ensue over the setting of ambient air quality standards, see Comment, Ambient Air Standards for Lead and Ozone: Scientific Problems and Economic Pressures, 3 HARV. ENV'T'L L. REV. 261 (1979).

\(^{222}\) BACT is an emission limitation set “on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs.” Clean Air Act § 169(3), 42 U.S.C. § 7509(3)(Supp. I 1977). By definition, determining this emission limitation is a bargaining process.
programs. More important, the trade-off process in the bubble concept is quite similar to that involved in the offset policy. Yet the offset policy has received surprisingly little criticism, particularly concerning enforcement problems. It is a problem, to be sure. But again, it is not unsolvable.

As for the general suspicion of businesses, little can be said. Certainly there have been numerous examples of industries attempting to outwit the enforcement agencies. However, it must be considered that the businesses have been provided with few incentives to do otherwise. The bubble concept at least offers firms an incentive to develop effective pollution control technology at the least cost.

To be sure, the bubble concept is not a flawless cure-all to the nation's pollution problems. Nevertheless, it does offer a practical, common-sense solution to some of the difficulties that have accompanied recent pollution control programs, particularly the high cost of those controls. At a time when cost consideration demands increasing attention to the development of regulatory programs, EPA and the states would be well advised to consider a program that gives cost-effectiveness a greater role in the development of pollution controls. Indeed this next year in particular—the year Congress reconsiders the whole Clean Air Act—it might behoove pollution control agencies to be more considerate of control costs. Industry lobbying groups are already preparing for a frontal assault on the current air pollution control program, primarily because of the costs of control. The bubble concept may provide just the kind of compromise that can prevent any major upheaval and that can produce the cement to form a lasting program to control the nation's air and water pollution.

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223 In fact, Alfred Kahn, Chairman of the Council of Wage and Price Stability, recently announced that a "regulatory budget" may be imposed on EPA. This budget would place a yearly limit on the dollar value of the regulatory burden EPA could impose. 11 ENVIR. REP. (BNA)(Curr. Dev.) 60 (May 15, 1980).