EPA's Responsibilities Under RCRA: Administrative Law Issues

I

INTRODUCTION TO RCRA

The Solid Waste Disposal Act of 1965¹ authorized research on new methods and programs for dealing with the ever-increasing mass of solid waste material produced by manufacture and consumption.² By 1976, it was obvious that there was a pressing need for governmental regulation of waste disposal on land. Congressional studies revealed hundreds of examples of adverse health and environmental effects resulting from uncontrolled disposal of hazardous substances.³ In that year, Congress passed two bills authorizing regulation of dangerous chemical substances. The Toxic Substances Control Act⁴ regulates manufacture and use of substances posing "an unreasonable risk of injury to health or the environment."⁵ The Resource Conservation and Recovery Act (RCRA)⁶ was intended to encourage retrieval and reuse of waste materials⁷ and to regulate disposal of hazardous wastes to minimize the harms to health and environment caused by unsafe disposal.⁸

RCRA was the last step in a comprehensive system of regulation designed to ensure safe disposal of all potentially hazardous substances. Congress anticipated that the Environmental Protection Agency (EPA) would integrate RCRA with other environmental statutes, such as the Clean Air Act,⁹ the Clean Water Act,¹⁰ and the Toxic Substances Control Act,¹¹ to plug the gaps in hazardous-substance regulation left by those other acts.¹² EPA's primary responsibilities under RCRA include

². Id. § 204(a), (current version at 42 U.S.C. § 6981(a) (1976 and Supp. III 1979)).
⁸. Id. § 6902(3), (4).
acting as a central information bureau for receipt and analysis of scientific data, identifying and listing hazardous wastes to be regulated, and approving states' hazardous waste disposal plans. Congress recognized that American industrial society inevitably would produce increasing amounts of wastes. EPA estimated that U.S. industries would produce 57 million metric tons of hazardous waste in 1980 and that ninety percent of that waste would be disposed of in an environmentally damaging manner. The agency's task under RCRA, therefore, was to ensure proper disposal of waste while minimizing interference with industrial processes.

RCRA required EPA to promulgate regulations within eighteen months of the statute's enactment, listing particular wastes to be regulated and identifying the general characteristics of hazardous waste. Wastes that are either listed or fall within the general characteristics set forth in the regulations are subject to a "cradle to grave" registration system. RCRA requires tracing of hazardous waste through the use of manifests accompanying waste from generation, through transport, to disposal at qualified hazardous waste disposal facilities.

EPA has implemented RCRA through a two-part system for identifying regulated wastes. The agency lists particular wastes and families of wastes it has determined to be hazardous and it requires generators to apply the general characteristics of hazardous waste set forth in the regulations to determine whether their waste streams contain substances that, although not listed, are nonetheless subject to the recordkeeping and safe-disposal requirements of RCRA and the RCRA regulations. By listing wastes according to broad generic categories as well as individually and by requiring generators of unlisted wastes to apply general characteristics such as ignitability, corrosiv-

13. *Id.* § 6983.
14. *Id.* § 6921.
20. The agency's regulations setting forth general characteristics of hazardous wastes are at *id.* §§ 261.20-.24.
22. *Id.* §§ 6922(5), 6923(a)(3) & 6924(2).
24. See note 20 *supra*.
25. 40 C.F.R. § 262.11 (1980). The regulations provide a flow chart to aid generators in determining whether a particular waste is subject to RCRA. *Id.* , pt. 260, App. I.
26. *Id.* § 261.21.
ity, reactivity, and toxicity to determine whether their wastes are hazardous, EPA has shifted a major part of its information-gathering burden to the regulated industries.

Once having determined that wastes they produce are hazardous, generators must procure identification numbers for the waste from EPA and prepare manifest forms for wastes that will be disposed of offsite. Manifests must specify the nature and quantity of the waste and identify the generator and transporters. Copies of manifest forms must be retained by generators and other persons handling hazardous waste for three years. The regulations provide that hazardous wastes may be transported only in properly labeled and constructed containers and require disposal site operators to return a copy of the manifest to the generator within thirty days of receipt of hazardous waste. If a generator receives no copy within forty-five days of the date the waste was accepted by the initial transporter, it must notify EPA of this failure and of the result of its attempts to trace the shipment.

Under RCRA, hazardous waste disposal facilities must apply for permits from EPA. Due to the lack of sufficient scientific data, the agency was unable immediately to design comprehensive regulations setting technical standards for hazardous waste disposal sites. Choosing instead to follow a plan of piecemeal promulgation of regulations as disposal technology develops, EPA early on promulgated standards establishing “good housekeeping practices” for storage, treatment, and disposal of hazardous wastes and later set forth more specific technical performance standards. Additional regulations will

27. Id. § 261.22.
28. Id. § 261.23.
29. Id. § 261.24.
30. Id. § 262.12.
31. Id. § 262.20(a). Wastes kept onsite are not subject to the manifest system, id. § 262.10(b), but are subject to separate requirements for owners and operators of storage, treatment, and disposal facilities, id. § 262.10 note.
32. Id. § 262.21.
33. Id. § 262.40(a).
34. Id. §§ 263.22(a), 264.71(a)(5).
35. Id. §§ 262.30-.33.
36. Id. §§ 264.71(a)(4).
37. Id. § 262.42(b).
40. Id.
41. Id. See 40 C.F.R. §§ 264.1-.77 (1980) (permanent standards); id. §§ 265.1-.406 (interim standards).
follow over the next several years. In the meantime, new disposal facilities must comply with the interim standards. Facilities existing before the enactment of RCRA that apply for permits may be accorded "interim status," which will enable them to continue to operate pending final administrative action on their permit applications. Furthermore, recognizing that existing disposal facilities are inadequate to handle the volumes of waste currently being generated, EPA has authorized operators to construct new disposal sites "at their own risk" pending promulgation of the final standards.

The standards for hazardous waste disposal facilities are designed in part to assure that owners and operators are financially secure enough to ensure proper operation, eventual shutdown, and post-shutdown security and monitoring of such facilities. These requirements are intended to prevent occurrences similar to the now infamous Love Canal disaster in Niagara Falls, New York, in which 239 families were forced to relocate following severe health problems caused, in part, because a hazardous waste facility was not properly monitored after closure.

In fulfilling its statutory duty to implement RCRA, EPA has adopted regulations that differ in several important respects from those it has employed in other similar contexts. The agency's adoption of a regulatory scheme relying on rulemaking rather than adjudication to resolve questions concerning the application of RCRA's requirements to particular generators markedly contrasts with its usual mode of regulation under earlier environmental statutes. Moreover, EPA's promulgation, in the face of court-ordered compliance with a tight statutory timetable, of interim final regulations has compounded the problems for industry in conforming with the new regulatory requirements. The legality, efficacy, and advisability of the regulatory system EPA has chosen is open to serious question. The following parts of this

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43. 10 ENV'T'L L. REP. 10,130, 10,134 (1980).
44. 40 C.F.R. § 265.1(b) (1980).
47. Id. at 2348 (amending 40 C.F.R. § 122.22(b) (1980)). Operators must obtain permits for such facilities before commencing operation, however. Id.
51. EPA's regulations under RCRA require industries whose wastes fall within listed families of wastes or the general characteristics of hazardous waste established by the agency to initiate rulemaking proceedings to prove their wastes are not hazardous. See text accompanying notes 158-59 infra.
52. See text accompanying notes 127 and 140-53 infra.
53. See text accompanying notes 71-77 infra.
Development will critically examine problems that have already arisen and may arise in the future with respect to the RCRA regulations. The Development concludes that, on balance, the regulations are a fair and effective way of implementing the congressional purposes underlying RCRA and predicts that courts will therefore uphold their validity.

With the increasing volume and complexity of government regulation since the 1940's, the general trend among federal agencies has been to proceed by rulemaking, whenever possible, to avoid the costs and delays of determining administrative policy on a case-by-case basis. Absent specific statutory command, agencies have discretion to promulgate regulations by formal or informal rulemaking or adjudication. Formal adjudication or rulemaking procedures are detailed in sections of the Administrative Procedure Act (APA) governing agency actions undertaken pursuant to statutes that require regulations to be made "on the record after opportunity for an agency hearing." Agencies subject to these sections must provide formal trial type proceedings allowing interested parties opportunity to "present oral or documentary evidence, to submit rebuttal evidence, and to conduct such cross-examination as may be required for a full and true disclosure of the facts."

Where formal hearings are not mandated by statute, APA requires agencies to comply with minimum "notice and comment" procedures. These procedures include notice of proposed rulemaking in the Federal Register, opportunity for interested persons to comment on proposed regulations by written or, at the option of the agency, oral submissions, publication of final rules with a concise general statement of purpose and basis, and provision of a "grace period" of at least thirty days between promulgation of final rules and their effective date.

Most agency rulings, however, are not subject to the provisions of APA. All informal rulings, such as the Revenue Rulings released by the Internal Revenue Service, are exempt from APA procedures as "interpretive rules [and] general statements of policy." Unlike the "legislative" rules that are subject to APA requirements, such interpre-

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57. Id. § 553(c).
58. For examples of agencies governed by APA requirements, see I K. DAVIS, supra note 55, § 6.3.
60. Id. § 553.
61. Id.
tive rulings are binding neither on the agencies nor on courts. These informal agency declarations can provide valuable guidance about agency policies to parties who may be subject to regulation, without requiring agencies or interested parties to go to the time and expense of formally challenging adopted regulations.

Courts have been dissatisfied, however, with the scanty or nonexistent administrative records resulting from "notice and comment" proceedings. Although unwilling to impose the costly and time-consuming procedures of the formal-hearings provision of APA, courts have increasingly demanded that agencies adopt hybrid procedures designed to provide a more complete administrative record for judicial review. This trend was abruptly halted by the U.S. Supreme Court's decision in *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council*, however, declaring courts could not require any procedures beyond notice and comment unless the statute authorizing the regulations in question required formal "on the record" proceedings under APA. The full scope and application of this case have yet to be determined. Its implications with respect to EPA's interim final regulations, listing requirements, and petition procedures under RCRA nevertheless will be examined below.

II

INTERIM FINAL REGULATIONS

Already burdened by continuing duties pursuant to other complex environmental acts requiring extensive scientific analysis, EPA found

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66. The distinction between these interpretive rules and legislative rules subject to APA's procedural requirements is not crystal clear. *Id.* § 7.15.


68. *Id.* Courts have imposed a variety of procedural requirements, including summaries of facts (findings) and reasons for adoption of a position or rejection of comments submitted. I K. DAVIS, *supra* note 55, § 6.12.


70. *See generally,* I K. DAVIS, *supra* note 55, §§ 6.37-37-2 (Supp. 1980). It has been argued that *Vermont Yankee* should have a minimal effect because: (1) was contrary to APA, 5 U.S.C. § 559 (1976) (declaring Act not intended to limit additional requirements "imposed by statute or otherwise recognized by law"); (2) was contrary to the legislative history of APA; (3) was inconsistent with the former trend in both the Supreme Court and lower courts to develop administrative common law, including broadening the doctrines of exhaustion and standing; and (4) was incompatible with the basic nature of the judicial process indispensable to a successful administrative process. I K. DAVIS, *supra* note 55, § 6.37 (Supp. 1980). It has been further argued that *Vermont Yankee* demonstrates the inherent weakness of APA in not expressly providing for judicial imposition of procedural innovations necessary for effective judicial review in matters of technical and policymaking complexity. Stewart, *supra* note 54, at 1805. A contrary view limits judicial action to a remand to the agency for a more complete administrative record under whatever procedures the agency believes are required or desirable. Byse, *Vermont Yankee and the Evolution of Administrative Procedure: A Somewhat Different View*, 91 HARV. L. REV. 1823 (1978).
itself unable to comply with the eighteen-month timetable for promulgation of regulations governing listing of hazardous substances. An action brought under RCRA's citizen suit provision resulted in an order requiring the agency to promulgate final regulations. In order to give the public an opportunity to comment on recently collected data, EPA instead promulgated lists of hazardous substances under the label of "interim final regulations." EPA announced that, while the regulations were final for purposes of the ninety-day statute of limitations for judicial review, the sixty-day period for giving notice that a party would seek judicial review, and the six-month compliance period, the agency would seek further comments in both written and oral form before promulgating "final final regulations."

In choosing to use the technique of interim final regulations, EPA reasoned that there was a pressing need to begin implementation of a national hazardous waste program as soon as possible despite the lack of perfect data. EPA provided a preview of future regulations to furnish guidance to the states for designing their management systems and to minimize the temporary hardship and uncertainty to generators, transporters, and disposers of solid waste.

EPA promulgated the final lists effective on November 19, 1980—the day set for compliance under the interim regulations. The new lists included most of the substances listed under the interim regulations. EPA announced the final regulations would be effective immediately for those substances.

EPA has used interim final regulations under other acts providing

76. Id. at 33,122-27.
77. Id. at 33,087.
79. Id. at 33,088.
80. Id. at 33,087. An agency is not required to promulgate all of the regulations it plans to issue under one statute or provision at the same time. See, e.g., B.F. Goodrich Co. v. Dep't of Transp., 592 F.2d 322 (6th Cir. 1979).
81. 45 Fed. Reg. 74,884, 74,890-92 (hazardous waste lists); id. at 78,532, 78,541-44 (chemical products list) (1980).
82. Id. at 33,084 (1980).
83. Id. at 74,884 & 78,532.
84. Id.
strict timetables in matters of extreme scientific complexity and uncertainty. In the past, other agencies have proceeded with later stages of projects despite a recognized need for further study at earlier stages. In dealing with such matters, courts have recognized the dual nature of interim regulations as final action for purposes of judicial review but as proposed regulations for purposes of public participation in further rulemaking. This dual status of the regulations places reviewing courts in a difficult position, however, requiring them to balance the interests of regulated parties in timely and adequate judicial review against the interests of government in efficient completion of the regulatory process in areas “on the boundaries of scientific knowledge.” The technique of adopting interim final regulations propels the courts into the fray before the agency has settled its conclusions in crucial areas.

Courts have attempted to resolve this dilemma by allowing agencies to use at trial information received after issuance of a rule as part of their basis for adopting that rule. Disclosure of information submitted after rulemaking as it becomes available is still required, however, and agencies must allow public comment on such information. Where agencies have attempted to escape the notice and comment requirements of APA entirely by pleading that a tight statutory schedule precluded compliance, a majority of the circuits addressing the issue have rejected the argument. Arguably, by immediately implementing

85. See, e.g., Environmental Defense Fund v. Costle, 578 F.2d 337 (D.C. Cir. 1978). In Environmental Defense Fund, EPA relied on the Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j (1976), which specifically authorized promulgation of interim regulations, id. § 300g-1(a), pending completion of a two-year report for EPA on maximum recommended contaminant levels, id. § 300g-1(e).

86. See, e.g., Natural Resources Defense Council, Inc. v. U.S. Nuclear Regulatory Comm’n, 582 F.2d 166 (2d Cir. 1978). See also RCA Global Communications, Inc. v. FCC, 559 F.2d 881 (2d Cir. 1977).

87. See, e.g., BASF Wyandotte Corp. v. Costle, 582 F.2d 108 (1st Cir. 1978) (court will hear appeal from interim final regulations).

88. See BASF Wyandotte Corp. v. Costle, 598 F.2d 637, 642 (1st Cir. 1979), and cases cited therein.

89. See I K. Davis, supra note 55, § 6.16.

90. This technique also presents special difficulties for regulated industries, which may be put in the position of having to file challenges at more than one stage of the regulatory process. These problems can be minimized, however, by combining claims for review of orders arising from interrelated proceedings. BASF Wyandotte Corp. v. Costle, 582 F.2d 108, 112 (1st Cir. 1978).


92. Id.

93. Western Oil & Gas Ass’n v. EPA, 633 F.2d 803, 810 (9th Cir. 1980). Cases raising this issue have involved regulations identifying nonattainment areas under the Clean Air Act, 42 U.S.C. § 7401-7642 (Supp. III 1979). The majority of circuits have held that the “good cause” exceptions to the notice and comment requirements of APA, 5 U.S.C. §§ 553(b)(B) & (d)(3), are not satisfied by a tight statutory schedule and provision by the agency of a 60-day post promulgation comment period. See, e.g., New Jersey Dep’t of Envi-
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the final list to the extent it coincides with the interim final list,94 EPA has used information received during the comment period subsequent to initial promulgation to justify retroactively its adoption of the interim list and has circumvented the statutory six-month compliance period95 for new regulations. On the other hand the proposed regulations96 gave regulated industries fair warning of EPA's planned hazardous waste list. Moreover, EPA provided opportunities for public comment both on information received during the original comment period97 for the proposed regulations and on reports completed after the close of that period.98 The agency initially promulgated the hazardous waste lists as interim regulations in order to allow the public to comment on data received after the comment period99 and not because EPA believed it had insufficient information to justify imposing the burdens on industry that the regulations would entail. While EPA satisfied the minimum notice and comment requirements of APA, it remains to be seen whether the courts will require more.

Allowing agencies considerable flexibility in their schedules for soliciting and evaluating comments on proposed rulemaking does not necessarily resolve the problem of determining standards for judicial review of the administrative record that adequately balance the interests of concerned parties. In Citizens to Preserve Overton Park, Inc. v. Volpe,100 the Supreme Court required review in light of "the full administrative record that was before the Secretary at the time he made his decision."101 Overton Park has been interpreted as supporting the prevailing "hard look" doctrine,102 under which the reviewing court inquires whether the agency has taken a hard look at all relevant factors but avoids substituting its own judgment on disputed facts for that of

98. Id. at 49,277.
100. 401 U.S. 402 (1971).
101. Id. at 420. One interpretation of the Overton Park decision is that "a proper record must reflect all of the relevant views and evidence considered by the rulemaker, from whatever source, and ... it must reveal if and how the rulemaker considered each factor throughout the process of policy formation." Wright, The Courts and the Rulemaking Process: The Limits of Judicial Review, 59 CORNELL L. REV. 375, 395 (1974).
the agency.\textsuperscript{103}

In at least one case following its chastisement by the Supreme Court in \textit{Vermont Yankee},\textsuperscript{104} the Court of Appeals for the District of Columbia Circuit declined to exercise more than a minimum of substantive review of EPA's regulations for the pulp mill industry promulgated under the Clean Water Act.\textsuperscript{105} The court in that case accorded great deference to the broad discretionary judgment delegated to EPA by Congress "in an area fraught with scientific uncertainty."\textsuperscript{106} In sustaining most of the challenged regulations, the court emphasized EPA's diligence in examining the scientific and technological questions involved\textsuperscript{107} and in providing numerous opportunities for public comment.\textsuperscript{108}

If the hard look doctrine has survived \textit{Vermont Yankee},\textsuperscript{109} it might be fairly applied in reviewing EPA's interim regulations under RCRA, since the use of the interim regulations technique may indicate the agency is relying on information acquired after-the-fact to support its regulatory decisions.\textsuperscript{110} As designed, however, RCRA minimizes such potential judicial intervention in the administrative process. Challenges to the regulations must be brought in the District of Columbia Circuit, where cases may easily be consolidated for review.\textsuperscript{111} All peti-


\textsuperscript{105} See Weyerhaeuser Co. v. Costle, 590 F.2d 1011 (D.C. Cir. 1978).

\textsuperscript{106} Id. at 1025.

\textsuperscript{107} EPA had hired three outside consultants to assist it. Id. at 1026.

\textsuperscript{108} Id. at 1028.


\textsuperscript{110} There must be a strong showing of bad faith by the agency to overcome the general presumption of regularity accorded to its decisions. Hercules Inc. v. EPA, 598 F.2d 91, 123 (D.C. Cir. 1978). \textit{Vermont Yankee} does not prevent a court from remanding for an explanation, however. East Tex. Motor Freight, Inc. v. United States, 593 F.2d 691, 695 (5th Cir. 1979).

\textsuperscript{111} RCRA, 42 U.S.C. § 6976(1) (1976). Integration of RCRA with other major environmental statutes under 42 U.S.C. § 6905(b) (1976) may effectively limit review of any environmental regulation to the District of Columbia Circuit. That circuit recently resolved a case involving 16 consolidated review petitions filed in various other circuits by pulp and paper makers. Weyerhaeuser Co. v. Costle, 590 F.2d 1011 (D.C. Cir. 1978). The Third Circuit received the initial petition and had the others transferred to it. EPA then convinced the court to transfer all of the cases to the District of Columbia Circuit in light of its experience with related issues. Id. at 1022.

Where multiple appeals have been allowed in the various circuits, the result has been a procedural nightmare. One major problem is the potential for inconsistent decisions on similar or identical issues. \textit{See}, e.g., "good cause" cases cited in note 93 supra. The Supreme Court, however, has thus far declined to grant certiorari to settle the obvious con-
tions to amend regulations, even petitions to exempt individual generators, are subject to general rulemaking rather than formal adjudication. Decisions of the agency are not made subject to the substantial evidence test on judicial review. Judicial review must be sought within ninety days following promulgation, and courts are precluded from reviewing the regulations in suits brought by the agency to compel compliance. The right to demand that post-promulgation evidence be admitted on judicial review is generally limited.

The combination of the statutory and judicial limitations on review of agency decisionmaking will make successful judicial challenge of the RCRA regulations difficult. Moreover, the RCRA regulations themselves place a heavy burden on regulated parties to produce technical data before the agency. This requirement, coupled with courts' discretion among the circuits. United States Steel Corp. v. EPA, 444 U.S. 1035 (1980) (Rehnquist, J., dissenting).

Where petitions concerning the same order are filed in more than one circuit, which court retains jurisdiction may depend on the arbitrary factor of which petition was filed first. Courts may mechanically apply that part of 28 U.S.C. § 2112(a) (1976) requiring proceedings instituted with respect to the same order in two or more circuits to be transferred to the court where a petition was first filed, BASF Wyandotte Corp. v. Costle, 582 F.2d 108 (1st Cir. 1978), but neglect adequately to consider the further provision in that section that the proceedings may be transferred thereafter in the interest of justice.

While the possibility of multiple appeals may not have affected Congress's decision to limit review to one circuit, it is interesting that the circuit chosen, the District of Columbia Circuit, is particularly suited for review of environmental matters. Not only does two-thirds of its caseload involve administrative law matters, Bazelon, Coping With Technology Through the Legal Process, 62 CORNELL L. REV. 817 (1977), but the members of that court have also been particularly involved in the theoretical development of the administrative process. See, e.g., id.; Leventhal, Environmental Decisionmaking and the Role of the Courts, 122 U. PA. L. REV. 509 (1974); Wright, The Courts and the Rulemaking Process: The Limits of Judicial Review, 59 CORNELL L. REV. 375 (1974).

The District of Columbia Circuit has acknowledged the risk of inconsistent decisions in the area of environmental regulation. It noted in one instance that "an expansive concept and exercise of the review power in the eleven Courts of Appeals charged with that function could easily impede accomplishment of the [Clean Water Act's] ambitious pollution-ending aspiration as well as its goal of industry-by-industry uniformity." Weyerhaeuser Co. v. Costle, 590 F.2d 1011, 1025 (D.C. Cir. 1978). There would seem to be little need to grant review in the various circuits where the regional effects of regulation are likely to be only incidental to the national program.

116. Id.
117. New evidence can be introduced only if it is material and if there were reasonable grounds for the failure to adduce it in the administrative proceedings. In such an instance, rebuttal evidence can also be allowed, and the Administrator has the right to consider the new information and modify her findings before the evidence is considered by the court. Id. § 6976(2).
general unwillingness to entertain substantive challenges where parties have failed to submit all available relevant data to the agency, should operate in large part to shift the burden of gathering technical information from EPA to the chemical industry.

On balance, EPA's regulations are a fair and effective way of satisfying the intent of Congress in passing RCRA. The courts are likely to and should uphold them despite the somewhat unorthodox way in which they were promulgated. The technique of interim final regulations seems well-suited to effectuating legislation that relies on agency discretion to ensure maximum public participation and that is designed to minimize judicial interference in an area of scientific uncertainty.

Whether a regulation promulgated under RCRA is designated "interim final" or "final" will probably have little bearing on the likelihood of additional agency revision prior to completion of judicial review. RCRA requires periodic revision by EPA of hazardous waste lists. Moreover, the statute provides for a multitude of procedures to facilitate continued public participation and agency reconsideration, including procedures for initial rulemaking, petitions by state governments seeking revisions or additions, petitions by interested parties to promulgate or repeal regulations, and citizen suits to compel agency performance of mandatory duties or industry compliance with regulations promulgated under the Act. Regardless of the status of a regulation promulgated under RCRA as interim or final, the likelihood that some kind of public procedure for revision will be initiated before judicial review of that regulation can be completed in most instances will be great. Since the interim final regulations were as final as any that EPA is likely to promulgate, it is more efficient to allow the agency to collect comments at once rather than be delayed by petitions for amendment and repeal. Since industry had an opportunity to participate prior to any rulemaking, the validity of the regulations should not be affected merely because subsequent revision proceedings were initiated by EPA rather than by the regulated industries.

119. See, e.g., BASF Wyandotte Corp. v. Costle, 598 F.2d 637, 653 (1st Cir. 1979).
120. Assuming EPA policymakers act rationally when considering this information and promulgating the regulations, few suits should even arise except where savings from a potential delay in implementation might outweigh the costs of pursuing frivolous litigation.
122. Id.
123. Id. § 6921(c).
124. Id. § 6974. See also 40 C.F.R. § 260.20 (1980).
126. Id. § 6972(a)(1).
Most other major federal environmental statutes have mandated that EPA list substances to be regulated.\textsuperscript{127} EPA claims the authority to list entire classes of solid waste as hazardous when it believes individual wastes within that class are typically hazardous—a process referred to as “generic listing.”\textsuperscript{128} Industry has objected that EPA’s statutory authority to “list particular hazardous wastes”\textsuperscript{129} does not encompass generic listing.\textsuperscript{130} While an agency’s interpretation of its authorizing statute is accorded great deference by the courts,\textsuperscript{131} such interpretation is not binding on the courts.\textsuperscript{132} Thus, EPA’s construction of RCRA as authorizing it to list hazardous substances generically as well as individually could be rejected.

Generic listing is objectionable because it imposes regulatory burdens on industry despite the absence of scientific data proving the hazardous nature of a particular substance. This method of regulation is consistent, however, with the view that the dangers imposed by improper disposal of potentially hazardous wastes justify a shift in the burden of proof in such matters to the generating industry. Generic listing allows EPA to list substances it suspects, but has insufficient data to prove, are hazardous. In order to establish that particular substances are not hazardous and to have them delisted by the agency, generators who produce those substances will have to incur the costs of testing. The public need not risk exposure to such substances pending determination of their character.

EPA successfully defended generic listing under the Federal Water Pollution Control Act in \textit{Environmental Defense Fund v. EPA}.\textsuperscript{133} The Court of Appeals for the District of Columbia Circuit recognized that EPA did not have the resources to test each individual substance within


\textsuperscript{128} 40 C.F.R. § 261.11(b) (1980).

\textsuperscript{129} RCRA, 42 U.S.C. § 6921(b) (1976).


\textsuperscript{131} Ethyl Corp. v. EPA, 541 F.2d 1, 12 n.16 (D.C. Cir. 1976).

\textsuperscript{132} II K. DAVIS, supra note 55, § 7.13 (2d ed. 1979).

\textsuperscript{133} 598 F.2d 62 (D.C. Cir. 1978). The court rejected the argument that EPA need demonstrate “a clear line of causation between a particular chemical and harm to public health or the environment.” \textit{Id.} at 83. The statute required that EPA provide for an ample margin of safety in determining the danger posed by a substance. \textit{Id.} The court held that EPA, in the exercise of its expert policy judgment, could rely on its knowledge of a known substance to assess the danger imposed by a related substance about which less was known. \textit{Id.} The court pointed out that Congress, in the Clean Water Act of 1977, had listed families of substances to be regulated rather than individual substances. \textit{Id.}
every class before promulgating regulations in areas "on the frontiers of scientific knowledge." In view of the strong policy interests favoring protection of public health and welfare, preventive regulation based on conflicting and inconclusive evidence may be justified where Congress has delegated to the regulatory agency the tasks of assessing risks and making decisions that are essentially determinations of legislative policy. EPA has interpreted RCRA as granting it discretion to regulate despite the lack of precise data. Because of current uncertainty about the nature and effects of human exposure to many chemicals, according broad discretionary authority to EPA to promulgate regulations that are in part preventive and in part precautionary is essential if the problems of unsafe handling and disposal are to be rectified.

EPA's position will lead to inevitable overregulation. The agency has imposed the economic burdens of recordkeeping and safe disposal on generators of listed substances regardless of the amount or concentration of the identified hazardous substances in their waste streams. Moreover, the broad generic categories adopted by EPA require compliance by generators whose wastes could probably be proven nonhazardous after proper treatment or disposal.

While it is axiomatic that all regulation is overinclusive to some degree, certain differences between RCRA and other environmental acts may support the former's especially broad coverage. Most importantly, RCRA does not require immediate or gradual reduction in generation of hazardous substances; rather, Congress recognized that the generation of such substances is a necessary byproduct of industrialization. RCRA demands only that such substances be safely handled and disposed. Furthermore, unlike the Clean Water Act or the

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134. Id. at 82.
135. Ethyl Corp. v. EPA, 541 F.2d 1, 24 (D.C. Cir. 1976).
136. Id. at 28. See also Hercules Inc. v. EPA, 598 F.2d 91, 126 (D.C. Cir. 1978) (the expedition necessary in public health protection justifies less elaborate administrative procedure than may be required in other contexts).
138. The regulations define hazardous waste as "a mixture of solid waste and one or more hazardous wastes listed." 40 C.F.R. § 261.3(a)(2)(i) (1980). A generator of only token amounts of hazardous material mixed with a large volume of other waste might thus be subject to the regulations. EPA specifically declined to adopt a de minimis standard whereby generators of less than a prescribed amount of a hazardous substance—as distinguished from the broad category of hazardous wastes—would be exempt from regulation. The agency decided that information about the intrinsic properties of a waste and the circumstances of possible exposure would have to be weighed before considering an exemption. 45 Fed. Reg. 33,103 (1980).
139. Generators of such wastes alternatively may seek exemption by filing a petition under 40 C.F.R. § 260.22 (1980). EPA has rejected the view that proper management of an individual facility might be grounds for delisting it, however. 45 Fed. Reg. 33,117 (1980).
141. Id. § 6902(4)-(6).
Clean Air Act, the regulatory scheme devised by Congress under RCRA does not rely primarily on an individualized system of permits issued by the agency to generators of regulated substances.

The goal of the Clean Air and Clean Water Acts is to eliminate all discharge of pollutants through gradual implementation of increasingly effective pollution-control technology. While RCRA encourages the development of technology, it does not require implementation of new treatment technology at the point of generation but instead concerns itself primarily with storage and disposal of hazardous wastes. The increased costs of recordkeeping and implementing safe disposal practices necessary to meet the requirements of RCRA probably present an economic burden of significantly lesser magnitude than the costs of implementing the "best practicable control technology" compelled by the Clean Water Act. The greater safeguards observed by EPA in conducting permit hearings under the Clean Water Act, such as evidentiary hearings and other procedural requirements, are unnecessary in rulemaking under RCRA, which imposes less substantial burdens on the regulated parties.

IV
PETITION PROCEDURES

Under RCRA, generators seeking exemptions from the substantive requirements of the statute or regulations may proceed under the provision establishing a general right to petition for amendment or promulgation of regulations. The Clean Air Act Amendments of 1977, 42 U.S.C. § 7401(b) (1976). Standards applicable to generators of hazardous waste establish only requirements for recordkeeping, labeling, storage, and reporting practices. RCRA, 42 U.S.C. § 6922 (1976 & Supp. III 1979).

In EPA v. National Crushed Stone Ass'n, — U.S. —, 101 S. Ct. 295 (1980), the Court held that EPA need not consider the economic capability to comply of a petitioner seeking a variance from the best practicable control technology standards of the Clean Water Act. The Act directed the Administrator to consider the benefits of effluent reductions compared to the costs of pollution control in setting the general limitations, but it would have been inconsistent with the legislative scheme to grant a variance solely because a particular operator could not afford to meet the limitations. Id. at 303. This holding supports the view that cost/benefit analysis should not be considered in determining whether to include or exempt particular wastes from the requirements of RCRA.
Any interested party with relevant information can petition the agency for reconsideration of a decision if it did not participate at the original hearing. The only procedural requirement EPA must observe in handling such petitions is that it publish its informal ruling in the Federal Register. The agency and the states are required to encourage public participation and develop minimum guidelines to secure such participation.

The petition process is designed as part of the continuing legislative rulemaking process. EPA will judge the information submitted in a petition on its merits, arrive at an initial decision, and publish the decision in the Federal Register for public comment. In effect, the procedure requires generators to determine whether further action is necessary to remedy initial overregulation.

To some extent, the exemption available through the petition procedure defuses industry's objection to the practice of listing substances generically. To succeed under a petition for delisting, however, generators must do more than prove that their particular wastes do not come under the general characteristics designated by EPA for identifying hazardous substances. EPA's petition procedures require generators to submit detailed information, including descriptions of industrial processes and a determination of whether those processes could be used to generate other wastes. Although EPA claims to have integrated the criteria for initial listing with those established for delisting, the information requirements of the agency's petition procedures seem to impose a heavier burden on petitioners to prove that the general characteristics do not apply than merely negating EPA's initial judgment that they do.

The formal requirements of a delisting petition are mitigated by the Administrator's discretion to grant a temporary exclusion after initially determining there is a substantial likelihood the petition will be granted. Although EPA has not conducted any tests to verify data

155. The technical requirements of petitions are at 40 C.F.R. §§ 260.20 & .22 (1980).
157. Id. § 6974(b).
158. Id. § 260.20(c).
159. The proposed regulations provided that a petition would be granted automatically if EPA did not act within 90 days, but that regulation was withdrawn. EPA determined that some affirmative action should be taken on its part and that those seeking to amend the regulations should have the burden of proving their position. 45 Fed. Reg. 33,117 (1980).
161. 40 C.F.R. § 260.22(a) (1980).
162. Id. § 260.22(l)(5).
164. 40 C.F.R. § 260.20(m) (1980).
submitted in exclusion petitions to date, it has given notice that it may conduct spot sampling and analysis of wastes or groundwater before any final decision is made to exclude particular wastes from the regulations.\(^{165}\)

EPA petition requirements represent an expansive view of industry's responsibility actively to participate in regulatory functions. Courts in the past have recognized industry's duty to provide all available information at agency proceedings prior to the promulgation of regulations.\(^{166}\) RCRA anticipates regular amendment of the hazardous substance lists as data are developed.\(^{167}\) Requiring that the regulated industry initiate further rulemaking proceedings to aid EPA in its continuing duties is consistent with the statute's general approach. Although detailed testing of individual wastes is not required for a generator's initial application of general criteria to unlisted wastes,\(^ {168}\) the petition process in effect requires further testing or development of data before a waste listed generically or identified by its characteristics can be delisted or exempted from the Act.

The deference accorded agencies in structuring their procedures after *Vermont Yankee* makes it unlikely a court would require more than informal rulemaking at any stage of the regulatory process, including consideration of petitions. Some parties have argued that even informal rulemaking procedures are too formal for individual delisting petitions, which they claim should be treated as informal adjudication.\(^ {169}\) Since EPA has taken the position that economic impact cannot be considered in setting standards under RCRA,\(^ {170}\) this argument has initial appeal where potential overregulation and economically wasteful administrative procedures are a major concern.

An argument favoring some form of adjudication as a mechanism for handling requests for exemptions from RCRA requirements could be based on precedents established in other areas of environmental law. Adjudicatory variance procedures are provided under the Clean Water Act, where listing will result in industries' being required to implement

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166. Portland Cement Ass'n v. Ruckelshaus, 486 F.2d 375, 394 (D.C. Cir. 1973). *See also* American Iron & Steel Inst. v. EPA, 526 F.2d 1027 (3d Cir. 1975). The duty to produce information has also been recognized as a means of preventing delay tactics by environmental groups. One court held that a public interest group may not raise objections it did not raise during rulemaking proceedings. Seacoast Anti-Pollution League v. Nuclear Regulatory Comm'n, 598 F.2d 1221, 1229 (1st Cir. 1979).
167. RCRA, 42 U.S.C. § 6921(a), (b) (1976).
168. 40 C.F.R. § 262.11(c)(2) (1980) (providing an alternative to testing).
increasingly stringent pollution-control technology.\footnote{171} Listing under that Act determines who will be subject to permit requirements.\footnote{172} Such factors as concentration of hazardous substances and volume of effluent produced can be balanced at the permit stage. The effect of listing under RCRA, however, is immediately to impose recordkeeping requirements and disposal costs on generators of listed substances regardless of the degree of risk posed by any individual facility.\footnote{173} These burdens will remain unchanged by proceedings involving disposal facilities, which alone are subject to permit proceedings.\footnote{174}

If disposal sites are unavailable or available only at a prohibitive cost, requiring waste generators whose products pose little hazard to comply with the safe-disposal requirements of the Act and regulations is economically unsound. A variance procedure would be an equitable way of ameliorating the burdens of regulation on generators whose production of waste poses no significant hazards.

EPA's failure to provide variance procedures under RCRA raises difficult questions for courts entertaining challenges to the agency's decisions. Before they can determine whether the agency has proceeded in compliance with procedural standards, they must examine and characterize EPA's actions as rulemaking or adjudication in order to determine what standards are applicable.\footnote{175}

EPA has concluded that RCRA requires that it provide only rulemaking procedures and not adjudicatory hearings in considering petitions for exemption from the regulations.\footnote{176} An agency decision of this type is normally afforded great deference by courts, especially where critical public health issues are involved\footnote{177} and the agency is interpreting a new statute.\footnote{178} The courts have reserved the power, however, ultimately to determine whether an agency decision is substantially adjudicatory or legislative in nature regardless of the label placed

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171. Clean Water Act, 33 U.S.C. § 1311(c) (1976). Indeed, the Supreme Court concluded that the technology-based effluent limitations promulgated by EPA under the Clean Water Act in 1977 were valid only so long as the agency provided variance procedures allowing individual dischargers to seek exemptions from those standards. E.I. du Pont de Nemours & Co. v. Train, 430 U.S. 112, 128 (1977).

172. See id. § 1342(a) (1976).


174. Id. § 6925(a) (1976). Generators of solid hazardous waste are not required to apply for permits, although they may be subject to permit requirements if instead of shipping the waste offsite they accumulate it onsite for periods of 90 days or longer. 40 C.F.R. § 262.34(b) (1980).

175. EPA's final RCRA regulations are clearly subject to judicial review. RCRA, 42 U.S.C. § 6976 (1976). EPA considers the interim final regulations also as final for purposes of judicial review. See note 78 supra and accompanying text. Nothing in RCRA makes petitioning a prerequisite to judicial review, however.


177. Ethyl Corp. v. EPA, 541 F.2d 1, 31 (D.C. Cir. 1976).

178. Id. n.64.
on it by the agency.\textsuperscript{179} The regulations arguably provide neither the protections of formal adjudication\textsuperscript{180} nor the convenience of informal adjudication. Yet, petitions brought by individual generators seeking exemptions from the regulations are the type of problems ideally resolved by adjudication because the agency can assess the hazard based on particular facts susceptible to close examination.\textsuperscript{181}

Nonetheless, where toxic wastes and processes are involved courts have upheld the use of rulemaking instead of adjudication, even for decisions governing individual plants.\textsuperscript{182} They have recognized that because pollutants are mobile, dischargers are not the only entities affected.\textsuperscript{183} The petition process adopted by EPA under RCRA, however, may not be adequate to exempt plants whose wastes are regulated under what EPA admits may inevitably be overbroad regulations.\textsuperscript{184} Plants producing only trace concentrations of regulated substances in their waste streams are burdened with the same extensive monitoring and reporting requirements as those with large concentrations, unless they can prove they are entitled to an exemption.\textsuperscript{185} Moreover, the cost of proving that particular wastes are not hazardous and thus obtaining delisting might prove so burdensome that generators would be coerced into compliance with the regulations in instances where there is little, if any, public benefit obtained.

Another difficult problem raised by EPA's use of a rulemaking system rather than adjudicatory procedures for exemption petitions is that the right of parties who have petitioned for promulgation, repeal, or amendment of a regulation to obtain judicial review of the agency's disposition of such petitions is uncertain. Refusal to repeal a regulation in response to such a petition is, for jurisdictional purposes, equivalent to promulgation of the regulation and is normally a reviewable decision.\textsuperscript{186} Such review may be barred, however, under RCRA's ninety-day limitations period\textsuperscript{187} unless the statutory right to petition for recon-

\textsuperscript{179} Seacoast Anti-Pollution League v. Costle, 572 F.2d 872, 875-78 (1st Cir. 1978).
\textsuperscript{180} APA, 5 U.S.C. §§ 556 and 557 (1976).
\textsuperscript{181} 40 C.F.R. § 260.22 (1980) currently governs such petitions.
\textsuperscript{182} Hercules, Inc. v. EPA, 598 F.2d 91, 118 (D.C. Cir. 1978). \textit{See also} cases cited therein.
\textsuperscript{183} \textit{Id.} The court asserted that rulemaking is an appropriate and flexible procedural mechanism to consider the effects of toxic substances on the environment since it accommodates the input of all concerned. \textit{Id.}
\textsuperscript{185} The regulations presume all solid waste containing hazardous substances is hazardous waste. 40 C.F.R. § 261.3(a)(2)(ii) (1976). Waste at a particular facility can be exempted only through the petition process. \textit{Id.} §§ 260.20, .22. Although generators of small quantities (less than 1000 kg. per month) of hazardous waste are currently exempt from the Act's manifest requirements, \textit{id.} § 261.5(a), they must nevertheless determine whether the wastes they produce are hazardous according to EPA's general characteristics tests. \textit{Id.} § 261.5(d).
\textsuperscript{186} United States Brewers Ass'n, v. EPA, 600 F.2d 974, 978 (D.C. Cir. 1979).
Consideration causes a new period to begin after agency disposition of such petitions.

Jurisdiction to review EPA's denial of a petition for repeal of a regulation cannot be established where the petitioning party simply failed to avail itself of the right to review during the period prescribed by statute. If review was not previously available or if a petition is based on new grounds, this restriction will not apply. A generator who believed in good faith that its facility was not subject to the RCRA regulations might fail to challenge the listing of a particular substance within the authorized time. A later denial by EPA of a petition filed by that generator to reconsider the listing decision should, in fairness, be appealable. If the petition process is part of a continuing rulemaking process rather than an adjudicatory act, it is difficult to see why an agency decision to promulgate, repeal, or amend at this stage should not be governed by the same standards of review as its initial decisions, made when information was probably less complete and the regulation more precautionary than preventive.

There is a second problem for regulated industries posed by the statutory limitations period. If the period is not tolled where further rulemaking procedures are in progress, industries will be forced to initiate costly, but potentially needless, litigation challenging interim final regulations while simultaneously expending substantial resources to conduct research and participate effectively in the comment proceedings preceding promulgation of final regulations.

Under such circumstances, regulated industries would again be better off with an adjudicatory variance procedure in place of petitions for rulemaking. Under a variance scheme, the doctrine of exhaustion of administrative remedies would preclude review until final agency action was taken. The limitations period that would normally run from the date of the initial agency decision would be effectively tolled by filing for a variance requiring further agency action. This would obviate the need to rely on an uncertain judicial remedy.

A judicial interpretation allowing tolling of the statute while a petitioner participates in further rulemaking procedures would also benefit EPA. The agency would have the benefit of new information developed since its initial decision and might change its position. The courts would thus be spared the time and the public spared the expense of unnecessary litigation.

Even if the rulemaking approach is justified when dealing with

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188. United States Brewers Ass'n, v. EPA, 600 F.2d at 978.
189. Id.
190. Under the principle of exhaustion of remedies a party must apply for all prescribed administrative remedies before it is entitled to judicial review. Myers v. Bethlehem Shipbuilding Corp., 303 U.S. 41, 50-51 (1938).
listed hazardous substances, there may still be a problem involving generators whose wastes do not contain listed substances but are none-theless determined by EPA to be subject to regulation under the general characteristics test. While EPA may initiate rulemaking proceedings to regulate them, RCRA authorizes it to bring a civil action for compliance or criminal charges without first listing the specific wastes. The Act generally provides that a challenge to regulations may not be raised in an action for enforcement. This provision deprives generators of an opportunity to challenge regulations to which they might never have expected to be subject. In such instances, it would be fair to require EPA to prove not only that a waste comes under the broad definitions—which would justify listing it—but also that the particular waste poses a hazard sufficient to justify immediate enforcement without listing. Such a rule would require EPA to balance the potential for damage to public health and the environment with the unexpected costs imposed on a private party which, in good faith, did not believe it was subject to the RCRA regulations.

One solution to this dilemma is to allow a party given a compliance notice an opportunity to file a petition for amendment of regulations. Dictum in a recent case, however, indicates that courts will not allow petition procedures to be used to circumvent the ninety-day limi-

193. Id. §§ 6928(a)(1), 6973 (Supp. III 1979). The first provision gives EPA the authority to enforce compliance by order or suit for any violation of the Act after 30 days notice. The second empowers EPA to seek injunctive relief whenever it finds that an imminent danger is posed by mismanagement of a waste.

RCRA originally prevented overuse of the criminal sanction by limiting it to violations involving “listed” substances. RCRA, 42 U.S.C. § 6928(d) (1976). In 1978, however, the Act was amended to allow imposition of criminal penalties on any person who knowingly transports, treats, stores, or disposes of any waste “identified” as well as “listed” under the Act. Id. (Supp. III 1979). It is clear under this amendment that Congress intended to enforce the requirement that generators of solid waste determine whether their wastes are hazardous, despite not being specifically listed by EPA.

Under the Clean Water Act, EPA has been allowed to seek criminal sanctions against illegal discharges without first filing a civil action or even promulgating regulations for the particular business charged with polluting. United States v. Frezzo Bros., Inc., 602 F.2d 1123 (3d Cir. 1979).

Without this flexibility, numerous industries not yet considered as serious threats to the environment may escape administrative, civil, or criminal sanctions merely because the EPA has not established effluent limitations. Thus, dangerous pollutants could be continually injected into the water solely because the administrative process has not yet had the opportunity to fix specific effluent limitations. Id. at 1128. The application of this reasoning to actions taken under RCRA is limited, however, because any discharge into water is presumed illegal under the Clean Water Act, 33 U.S.C. § 1311(a) (1976).

195. Under such a rule EPA would have to proceed under the imminent hazard provision, id. § 6973 (Supp. III 1979), rather than the general enforcement provision, id. § 6928(a)(1) (1976).
tations period for judicial challenge of regulations. Given the inadequate state of scientific knowledge about chemical processes and hazardous substances, such language should be viewed as merely a warning against obvious delay tactics. RCRA anticipates that new information will continually arise necessitating revisions of the criteria for listing as well as of the lists themselves. The use of generic listing itself assumes a lack of present information and a reliance on knowledge of related substances. Since a petition would require a detailed description of any relevant procedures and findings, granting the right to petition upon receipt of a compliance notice would ensure that EPA considered the latest information about a particular waste before suing for compliance under the general characteristics or generic listing test. Further, allowing petitions to amend to toll judicial action ameliorates the burdens resulting from the agency's use of rulemaking rather than adjudicatory hearings to make initial determinations about whether a specific waste is hazardous.

A counterargument can be made that consideration of costs should not enter into the decision whether to compel compliance. RCRA evidently does not anticipate the use of cost-benefit analysis by EPA when imposing the Act's recordkeeping requirements. It should be no defense in an enforcement suit that granting the right to petition for rulemaking, by delaying compliance, would decrease costs for a generator whom EPA has found to be in violation under the general characteristics tests. Generators of solid waste are under a duty to determine initially whether any of their wastes are hazardous by applying the general characteristics tests to their wastes. If a generator whose wastes fall within the general characteristics test fails either to comply with the recordkeeping requirements of RCRA or to petition for rulemaking to amend the regulations, and EPA on its own initiative subsequently determines that the generator's wastes are hazardous,

196. United States Brewers Ass'n v. EPA, 600 F.2d 974, 978 (D.C. Cir. 1979) (review within that time would have been impractical).
198. Id. § 6921(b).
201. The instruction to the Administrator requires promulgation of “regulations establishing such standards . . . as may be necessary to protect human health and the environment.” RCRA, 42 U.S.C. § 6922 (1976). No mention is made of weighing costs and benefits. The regulations governing initial identification of a characteristic of hazardous waste contain an implicit cost factor, however. They require that the characteristic be measurable by reasonably available standardized test methods or be reasonably detectable by generators through their knowledge of their waste. 40 C.F.R. § 261.10(a)(2) (1980). If the agency adheres to these standards, few generators should ever have cause to complain about compliance actions brought against them.
203. Id. § 261.20-.24.
both the risk of public harm from the generator's noncompliance and the generator's failure to fulfill its statutory obligations justify compelling immediate compliance, regardless of cost, pending ultimate disposition by EPA of its rulemaking petition.204

As a practical matter, it would be surprising if EPA ever attempted to bring an enforcement action against generators of wastes brought under the Act through identification by general characteristics. EPA justified its use of interim final regulations and its tardiness in promulgating any regulations by pleading it had limited resources.205 If this claim was valid, EPA should have enough trouble enforcing the Act against generators and transporters of listed wastes without filing enforcement actions prior to proposing new substances for listing except in extreme cases. Furthermore, if the willingness of the states to take over hazardous waste management is anything like their willingness to assume regulatory burdens under other environmental acts,206 it will be some time before EPA is relieved of its enforcement responsibilities. The potential for such action nevertheless demonstrates the great discretion RCRA allows EPA in structuring its procedures to provide the maximum precautionary protection within the time limits of the Act.

CONCLUSION

There is ample reason to believe that, whatever procedures EPA found advantageous, Congress preferred immediate regulation via interim rules over delay pending further scientific investigation. After EPA failed to promulgate a list of substances as required under the Federal Water Pollution Control Act,207 Congress enacted a statutory list in the Clean Water Act of 1977208 and included generic categories of substances.209 The legislative history of RCRA includes accounts of fifty-nine instances of serious health and environmental damage resulting from improper disposal of hazardous substances210 and notes the existence of many more.211 Given its evident concern about the danger of hazardous chemicals, it is reasonable to infer that Congress preferred regulation of all substances believed to be hazardous over delay pend-

204. The threat of suit may also have the laudable effect of stimulating development of tests for detecting hazardous constituents in solid waste.
205. See notes 71-77 supra and accompanying text.
206. See, e.g., Brown v. EPA, 566 F.2d 665 (9th Cir. 1977); Friends of the Earth v. Carey, 552 F.2d 25 (2d Cir. 1977) (chronicling the resistance of California and New York, respectively, to enforcement of air pollution plans under the Clean Air Act).
209. Sixty-five different chemical compounds were listed. 45 Fed. Reg. 4109 (1978).
211. Id. at 17, reprinted in [1976] U.S. CODE CONG. & AD. NEWS 6254.
ing further investigation. Furthermore, like other environmental acts, RCRA was intended in part to encourage development of information and technology.\textsuperscript{212} Placing the burden of information production on generators through a petition procedure is fully consistent with that goal.

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