

Improving Regulation Through Incremental Adjustment

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I. INTRODUCTION

Reform of environmental and other regulation has been a popular topic for academics, think-tanks, and interested parties for the last two decades. Claiming that existing regulation is excessive and irrational, critics have successfully convinced Congress and the White House to implement a plethora of procedural requirements to analyze a proposed regulation before it is promulgated.¹ In our recent book, *Risk Regulation at Risk*,² we argued that the previous initiatives address the possibility of regulatory failure on the wrong end of the regulatory policy implementation process. Current efforts to rationalize environmental and other health and safety regulation at the “front end” of the regulatory process are doomed to fail because of moral, methodological, and informational limitations.³ We suggested that one way of improving regulation would be to rely on incremental adjustments in regulation on the “back end” of the regulatory process.⁴ One important advantage of proceeding in this manner is that regulatory policy is adjusted in light of its actual impact, as compared to the significant guesswork that is required to use front-end analysis. In this manner, a back-end adjustment process is consistent with the pragmatic approach to public policy that we advocated in the book.⁵

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1. See *infra* notes 12–23 and accompanying text.

2. SIDNEY A. SHAPIRO & ROBERT L. GLICKSMAN, *RISK REGULATION AT RISK: RESTORING A PRAGMATIC APPROACH* (2003).

3. *Id.* at 71–72.

4. *Id.* at 177; see also Sidney A. Shapiro & Robert L. Glicksman, *The Missing Perspective*, *ENVTL. F.*, Mar./Apr. 2003, at 42.

5. SHAPIRO & GLICKSMAN, *supra* note 2, at 177.

This article addresses in more detail the potential of two types of back-end processes: (1) deadline extensions and (2) waivers, exceptions, and variances.⁶ Our analysis proceeds in three steps. Part II describes the almost exclusive focus of regulatory reformers on the front end of the process. Part III offers a close examination of five federal statutes that provide opportunities for the two types of adjustments we are studying. The results confirm our earlier assertion that Congress has authorized agencies such as the Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and the Interior Department to make these types of back-end adjustments available in a variety of contexts and for a variety of reasons.⁷ Our analysis reveals that Congress has established six different grounds for back-end adjustment, and we assess the potential for each of these grounds to improve regulatory policy. Although we recommend the imposition of conditions on the issuance of some of these back-end adjustments, we find that these adjustments are generally consistent with the precautionary tilt of the statutes in which they are located because they still require the regulated entity to do the best it can to protect people and the environment. Where such protective mechanisms are absent, we urge that the statutes be amended to include them.

Part IV analyzes the procedures by which requests for back-end adjustments are currently processed. We find that agencies consider most applications for back-end adjustments using informal procedures that include public notice and solicitation of public comments, although in a few instances, more formal procedures apply. We favor the informal approach because it is an efficient way for agencies to respond to the issues raised by requests for back-end adjustments and because more elaborate procedures are not necessary to promote rational decision-making, given the nature of the issues likely to be raised in back-end adjustment proceedings. We are concerned, however, about the extent to which effective public participation will occur under these procedures. We therefore endorse two steps to enhance the transparency of back-end adjustment decision-making: the establishment of electronic reading rooms and the issuance by agencies of annual reports on back-end ad-

6. Other back-end adjustment mechanisms discussed in our book are the subjects of other articles in this symposium. See Clifford Rechtschaffen, *Promoting Pragmatic Risk Regulation: Is Enforcement Discretion the Answer?*, 52 U. KAN. L. REV. 1327 (2004); J.B. Ruhl, *Taking Adaptive Management Seriously: A Case Study for the Endangered Species Act*, 52 U. KAN. L. REV. 1249 (2004).

7. SHAPIRO & GLICKSMAN, *supra* note 2, at 158–59.

justments.⁸ We argue that these two mechanisms will facilitate involvement by public interest groups and interested citizens by allowing them to prioritize the adjustment proceedings in which they wish to become involved. The result is likely to be enhanced agency accountability and reduced opportunities for agency abuse of the back-end adjustment process.

II. THE FRONT-END EFFORT TO RATIONALIZE REGULATION

Critics of environmental and other risk regulation have engaged in a long-standing and vigorous effort to criticize regulatory policy as irrational and excessive.⁹ We and others have attempted to demonstrate that most of these criticisms are wide of the mark.¹⁰ Nevertheless, these complaints have become the foundation on which the White House and Congress have built an extensive apparatus of front-end analysis of proposed and final regulations.

Since the Reagan Administration, there has been a series of executive orders that establish analytical reporting requirements monitored by the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB).¹¹ President Reagan issued Executive Order 12,291,¹² which required executive agencies to assess the benefits and costs of proposed rules, followed by executive orders requiring assessment of family, federalism, and property impacts.¹³ In the first Bush Administration, the White House required executive agencies to perform a preliminary cost-benefit analysis to justify placement of a proposed

8. We discuss these proposals further in Sidney A. Shapiro & Robert L. Glicksman, *The APA and the Back-End of Regulation: Procedures for Informal Adjudication*, 56 ADMIN. L. REV. 1159 (2004).

9. See, e.g., STEPHEN BREYER, *BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION* (1993); *RISKS, COSTS, AND LIVES SAVED: GETTING BETTER RESULTS FROM REGULATION* (Robert W. Hahn ed., 1996).

10. See generally FRANK ACKERMAN & LISA HEINZERLING, *PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING* (2004); SHAPIRO & GLICKSMAN, *supra* note 2, at 73–91; Richard W. Parker, *Grading the Government*, 70 U. CHI. L. REV. 1345 (2004).

11. Sidney A. Shapiro, *Administrative Law After the Counter-Reformation: Restoring Faith in Pragmatic Government*, 48 U. KAN. L. REV. 689, 708 (2000).

12. Exec. Order No. 12,291, 3 C.F.R. 127 (1982), *reprinted in* 5 U.S.C. § 601 app. at 635 (2000) (revoked by Exec. Order No. 12,866).

13. See Exec. Order No. 12,630, 3 C.F.R. 554 (1989), *reprinted in* 5 U.S.C. § 601 app. at 636–37 (2000); Exec. Order No. 12,612, 3 C.F.R. 252 (1988), *reprinted in* 5 U.S.C. § 601 app. at 636 (2000); Exec. Order No. 12,606, 3 C.F.R. 241 (1988), *reprinted in* 5 U.S.C. § 601 app. at 606 (2000).

regulation on an agency's regulatory agenda,¹⁴ and it extended Executive Order 12,291 to almost every form of agency action except adjudication.¹⁵ The Clinton Administration issued its own executive order requiring agencies to assess the costs and benefits of proposed and final rules, and it established a review process similar to the ones used by previous administrations.¹⁶ President George W. Bush has continued the Clinton executive order.¹⁷

Congress has also been busy creating front-end requirements. In 1980, it passed the Regulatory Flexibility Act, which requires a regulatory flexibility analysis whenever an agency proposes a rule that may have a significant economic impact on a substantial number of small businesses, organizations, or governments.¹⁸ In 1995, Congress passed the Regulatory Accountability and Reform Act, which requires agencies to prepare a regulatory impact assessment before they promulgate a proposed or final regulation that includes a "mandate" resulting in costs over \$100 million annually on state, local, or tribal governments or the private sector.¹⁹ In 2001, Congress passed the Information Quality Act,²⁰ which requires agencies to establish procedures to ensure the "objectivity, utility, and integrity" of information "disseminated" by the federal government, and which gave OMB oversight authority over agency compliance with the guidelines.²¹ In February 2002, OMB issued guidelines that instructed agencies how to comply with the legislation.²² The guidelines established new analytical requirements regarding the dissemination of

14. See Sidney A. Shapiro, *Political Oversight and the Deterioration of Regulatory Policy*, 46 ADMIN. L. REV. 1, 8 (1994).

15. *Id.*

16. See Exec. Order No. 12,866, 3 C.F.R. 638 (1993), *reprinted in* 5 U.S.C. § 601 app. at 638-42 (2000).

17. See Memorandum from Andrew H. Card, Jr., Assistant to the President and Chief of Staff, the White House, to the Heads and Acting Heads of Executive Departments and Agencies, Regulatory Review Plan (Jan. 20, 2001) (adopting the meaning of "regulation" set forth in Exec. Order No. 12,866), available at 66 Fed. Reg. 7702, also available at http://www.whitehouse.gov/omb/inforeg/regreview_plan.pdf; see also Exec. Order No. 13,258, 3 C.F.R. 204 (2002) (amending Exec. Order No. 12,866).

18. 5 U.S.C. §§ 601-612 (2000).

19. 2 U.S.C. § 1532(a) (2000). In 1996, Congress amended the Regulatory Flexibility Act to establish judicial review of agency compliance with some of its requirements. See Small Business Regulatory Enforcement Fairness Act of 1996, Pub. L. No. 104-121, § 242, 110 Stat. 857, 865-66 (1996) (codified as amended in 5 U.S.C. § 611 (2000)).

20. Treasury and General Government Appropriations Act for Fiscal Year 2001, Pub. L. No. 106-554, § 515, 114 Stat. 2763A-154 (2001).

21. *Id.* §§ 515(a), (b)(1).

22. Office of Management and Budget, Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies, 67 Fed. Reg. 8452 (Feb. 22, 2002).

information, including the dissemination of information as part of the rulemaking process.²³

All of these initiatives are part of what Debra Stone calls the “rationality project,”²⁴ which is an effort to rationalize regulation on the basis of “rational choice theory, microeconomic efficiency models, and cost-benefit analysis.”²⁵ There are three difficulties with this effort. First, analysts are subject to “bounded rationality.”²⁶ We simply lack the information necessary to make accurate judgments using these techniques.²⁷ Thus, “[a]t its best, cost-benefit analysis usually offers only a rough approximation of the actual costs and benefits of regulatory action—too rough for decision-making.”²⁸ Second, the multiple demands imposed by these analytical requirements have ossified the rulemaking process, slowing the promulgation of regulations to a crawl.²⁹ Finally, the use of cost-benefit analysis and other similar techniques invites analysts to implement normative values that are at odds with the statutes that EPA and other risk agencies implement. Whereas cost-benefit analysis seeks only the most economically efficient level of regulation, risk statutes almost universally implement a different and broader moral perspective.³⁰ In these statutes, Congress has expressly rejected the idea that economic efficiency is the only value to determine regulatory policy. Instead, it made protecting people and the environment a priority by requiring risk producers to use their “best efforts” to reduce risks.³¹ Unlike cost-benefit analysis, this commitment recognizes and honors the intrin-

23. Sidney A. Shapiro, *Information Data Quality and Environmental Protection: The Perils of Reform by Appropriations Rider*, 28 WM. & MARY ENVTL. L. & POL'Y REV. 339, 346–49 (2004). Under the authority of the IQA, OMB also issued a bulletin requiring extensive use of peer review prior to the dissemination of information, including information used in the rulemaking process. Final Information Quality Bulletin for Peer Review, 70 Fed. Reg. 2,664 (Jan. 14, 2005); see Sidney A. Shapiro, *OMB's Dubious Peer Review Procedures*, 34 ENVTL. L. REP. 10,064, 10,064–65 (2004).

24. Shapiro, *Counter-Reformation*, *supra* note 11, at 706 (citing Debra A. Stone, *Clinical Authority in the Construction of Citizenship*, in PUBLIC POLICY FOR DEMOCRACY 45, 46 (Helen Ingram & Stephen Rathgeb Smith eds., 1993)).

25. *Id.*

26. SHAPIRO & GLICKSMAN, *supra* note 2, at 22–24.

27. *Id.* at 65.

28. Shapiro & Glicksman, *The Missing Perspective*, *supra* note 4, at 50.

29. SHAPIRO & GLICKSMAN, *supra* note 2, at 134–36; see Thomas O. McGarity, *Some Thoughts On “Deossifying” The Rulemaking Process*, 41 DUKE L.J. 1385, 1389–90 (1992) (documenting the slowdown in rulemaking).

30. SHAPIRO & GLICKSMAN, *supra* note 2, at 32.

31. *Id.* at 52.

sis value of protecting humans and the environment while still taking costs into consideration.³²

Readers seeking a more elaborate defense of these propositions will need to look at our book and similar efforts by other scholars.³³ For purposes of this article, we assume that the problems of rationalizing policy at the front end of the process require us to look elsewhere for ways to fine-tune regulation. In our book, among other suggestions, we proposed that back-end adjustments have considerable promise.³⁴ Our principal argument was that such adjustments occur in light of real world experience, which gives regulators concrete information about the impact of a regulation.³⁵ Nevertheless, we also observed that there were certain potential difficulties with this approach, including the potential that regulators could gut a regulation by handing out undeserved exemptions and exceptions.³⁶ We therefore urged that it was essential that agencies be accountable for the back-end adjustments that they make.³⁷

While the front-end effort to rationalize regulation has received most of the attention, less attention has been paid to the regime of back-end adjustments that Congress has authorized. This article seeks to understand better the manner in which Congress has structured existing back-end adjustments and the extent to which agency decision-makers responsible for considering requests for back-end adjustments are accountable for their decisions.

III. THE BACK-END EFFORT TO RATIONALIZE REGULATION

This section considers the degree of regulatory rationality of presently-structured back-end adjustments. We first describe the potential regulatory advantages of back-end adjustments. We then survey the back-end provisions of five federal health, safety, and environmental statutes that provide opportunities for back-end adjustments. Our goal is to determine the conditions under which back-end adjustments are currently made and to assess whether these provisions are likely to produce the regulatory advantages that we have identified.

32. *Id.* at 51–54.

33. *See, e.g.*, ACKERMAN & HEINZERLING, *supra* note 10.

34. SHAPIRO & GLICKSMAN, *supra* note 2, at 158–76.

35. *Id.* at 170–72.

36. *Id.* at 172–74.

37. *Id.* at 174–76.

A. *Potential Advantages*

A back-end adjustment process has a number of policy advantages. First, it permits agencies to preserve relatively stringent baseline risk-reduction standards while still accommodating concerns that the application of these stringent rules will cause irrational or unfair results in particular cases.³⁸ As one court has explained, “a regulatory system which allows flexibility, and a lessening of firm proscriptions in a proper case, can lend strength to the system as a whole.”³⁹ Regulators can make case-by-case adjustments instead of initially watering down standards in anticipation that a general rule may be counterproductive or irrational in some circumstances.⁴⁰

Second, a back-end process addresses the ossification of the rule-making process and the problem of bounded rationality in several ways. Agencies issue back-end adjustments after a rule has been adopted. The availability of these adjustments can avoid delay in the issuance of a rule of widespread applicability because an agency can promulgate a rule and rely on regulated entities to alert it to implementation problems by filing individual requests for relief.⁴¹ A back-end process therefore serves as a check on the rationality of rules that are promulgated. If an agency receives a significant number of meritorious applications, it may suggest that a regulation is flawed and requires adjustment.⁴² Further, a back-end process gives regulated entities a strong incentive to produce evidence that an adjustment in a rule is justified. Since these firms are the most likely entities to possess information bearing on the unique aspects of their situation that justify an adjustment, this process addresses the problem of bounded rationality.⁴³ Moreover, because incremental adjustments limit the scope of factual inquiry, they demand fewer analytical resources and take less time than addressing the same problems in rule-

38. See DANIEL A. FARBER, *ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD* 197 (1999) (“The existence of an escape valve might even strengthen support for the environmental baseline by making it clear that later adjustments would be available.”).

39. *Portland Cement Ass’n v. Ruckelshaus*, 486 F.2d 375, 399 (D.C. Cir. 1973).

40. See Jim Rossi, *Making Policy Through the Waiver of Regulations at the Federal Energy Regulatory Commission*, 47 ADMIN. L. REV. 255, 277 (1995) (noting that administrative equity “eschews the ability of rules to provide universal justice”).

41. SHAPIRO & GLICKSMAN, *supra* note 2, at 170–71.

42. *Id.* at 172.

43. *Id.* at 171.

making,⁴⁴ which frees up agency resources for implementing the agency's statutory mission. Unlike rulemaking, in which regulators must attempt to anticipate problems before they occur in the context of writing general rules, incremental adjustments permit regulators to consider concrete problems, one at a time, in the context of specific circumstances. The back-end process can also make adjustments to circumstances that cannot be anticipated at the time a rule was written.⁴⁵ A back-end adjustment process can also reduce the number of challenges to regulations and the need to use enforcement proceedings to interpret rules and make policy.⁴⁶

Third, a back-end adjustment process can increase the legitimacy of the regulatory program that contains the back-end process by reducing the frustrations likely to result from the application of regulatory requirements in ways that produce harsh or anomalous results. Thus, Judge Harold Leventhal argued in another regulatory context prior to the adoption of any of the laws analyzed in this article that:

[A] rule is more likely to be undercut if it does not in some way take into account considerations of hardship, equity, or more effective implementation of overall policy, considerations that an agency cannot realistically ignore, at least on a continuing basis. The limited safety valve permits a more rigorous adherence to an effective regulation.⁴⁷

Finally, but hardly least of all, a back-end process is one of the ways that regulators can take costs into account when Congress eschews the use of a cost-benefit test to establish the level of regulation. As we explain in our book, Congress has rejected the use of a cost-benefit analysis to establish the level of risk reduction in almost every health, safety, and environmental statute.⁴⁸ Instead, Congress typically requires agencies to take costs into account in one of two ways. In open-ended balancing, agencies consider compliance costs as one of the factors to be considered

44. Peter H. Schuck, *When the Exception Becomes the Rule: Regulatory Equity and the Formulation of Energy Policy Through an Exceptions Process*, 1984 DUKE L.J. 163, 196.

45. See Colin S. Diver, *Policymaking Paradigms in Administrative Law*, 95 HARV. L. REV. 393, 430 (1981) (noting how an incremental process accommodates the "tide of technical and social change"); see also *Natural Res. Def. Council, Inc. v. EPA*, 537 F.2d 642, 647 (2d Cir. 1976) (stating that absent the availability of variances, "there is no guarantee that [a regulatory defect that arose because regulations were ill-suited to individual plants] could be effectively remedied if it occurred").

46. Schuck, *supra* note 44, at 283 ("By reducing the hardships and the sense of injustice suffered by those to whom a rule applies, exceptions diminish the pressure to challenge the rule itself.").

47. *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

48. SHAPIRO & GLICKSMAN, *supra* note 2, at 44.

in establishing the level of regulation, but there is no obligation to balance costs and benefits.⁴⁹ In constrained balancing, an agency chooses the level of protection by identifying and patterning regulatory objectives upon some model technology.⁵⁰ In this manner, Congress limits the authority of agencies to impose abatement costs according to the availability of the technology.⁵¹ Our book contends that there are important moral and practical reasons for using these regulatory approaches instead of a cost-benefit test.⁵² Because a back-end adjustment process that authorizes hardship-based adjustments offers another way to take costs into consideration without relying on a cost-benefit test, it supports the rationality of the current regulatory approaches.⁵³

B. Current Provisions

This section analyzes whether current back-end provisions are likely to produce the policy advantages that we have identified. To make this determination, we surveyed five federal health, safety, and environmental statutes that provide opportunities for back-end adjustments: the Clean Water Act (CWA),⁵⁴ the Resource Conservation and Recovery Act (RCRA),⁵⁵ the Clean Air Act (CAA),⁵⁶ the Occupational Safety and Health Act (OSH Act),⁵⁷ and the Endangered Species Act (ESA).⁵⁸

Our survey finds that Congress has provided for back-end adjustments in the form of deadline extensions and waivers, variances, and exceptions in all five statutes under consideration. A table summarizing these findings can be found in Appendix I. A deadline extension, as its name implies, is an adjustment of the date by which a regulated entity must comply with its regulatory obligations. A waiver, exception, or variance provides relief for a regulated entity from regulatory obligations otherwise applicable to it by affording it treatment that differs from the treatment afforded other entities subject to the same obligations. A variance or exception may subject the entity applying for the back-end ad-

49. *Id.* at 39.

50. *Id.* at 37.

51. *Id.*

52. *Id.* at 46–72.

53. We discuss hardship-based adjustments *infra* Part III.B.2.

54. 33 U.S.C. §§ 1251–1387 (2000).

55. 42 U.S.C. §§ 6921–6939e (2000).

56. *Id.* §§ 7401–7671q.

57. 29 U.S.C. §§ 651–678 (2000).

58. 16 U.S.C. §§ 1531–1544 (2000).

justment to more lenient pollution controls, for example. A waiver or exemption may even exempt an entity altogether from the need to comply.⁵⁹ Congress has made these back-end adjustments available under the statutes we have reviewed on at least six different policy grounds.⁶⁰ Congress permits back-end adjustments on the basis of lack of adverse impact on the environment, hardship or technological unavailability, the desire to provide incentives to develop new pollution control or risk-reducing technology, fairness, conflicts between environmental and other social policy values, and, in at least one instance, in open-ended situations.⁶¹

We conclude that most, although not all, of these provisions provide policy adjustments that should improve regulatory rationality. Our analysis is organized according to the five policy grounds on which the various types of adjustments are available.

1. Harm-Based Adjustments

Harm-based adjustments provide relief to a regulated entity from regulatory obligations that would otherwise apply to it in a situation in which the regulated activity does not create the types of risks to health, safety, or the environment that the regulatory program was designed to

59. It is theoretically possible for an agency to subject a regulated entity to more stringent regulatory requirements by issuing a variance at the behest of an environmental public interest group. EPA's CWA regulations, for example, explain that it may be necessary to adjust the regulatory effluent limitation regulations on a case-by-case basis to "make them either more or less stringent as they apply to certain dischargers within an industrial category or subcategory" to take account of data that EPA never considered in issuing the regulations and that render a particular discharger's situation fundamentally different from the ones EPA considered in the rulemaking. 40 C.F.R. § 125.30(b) (2003); *see also id.* § 125.31(c) (setting forth the criteria for issuance of alternative effluent limitations that are "more stringent than required by national limits"). In practice, however, back-end adjustments more commonly take the form of more lenient (as opposed to more stringent) treatment.

60. Agency regulations may create additional opportunities for back-end adjustments, such as situations in which new information becomes available. *See, e.g., id.* § 233.36(a)(5) (authorizing the modification of dredge and fill permits issued under § 404 of the CWA, 33 U.S.C. § 1344, on the basis of significant new information that would have justified the imposition of different permit conditions had it been available at the time of issuance). *Cf.* 50 C.F.R. § 17.22(b)(5) (2003) (authorizing limited adjustments to incidental take permits under the ESA in the event of changed or unforeseen circumstances).

61. The agencies sometimes make back-end adjustments available even if Congress has not specifically authorized them. The Supreme Court endorsed EPA's creation of fundamentally different factor (FDF) variances from the CWA's effluent limitations for point sources in *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 126–36 (1977). *See also* *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 73–85 (1980) (considering the appropriate grounds for issuance of an FDF variance). More recently, the Second Circuit upheld EPA's authority to issue variances from CWA regulatory requirements on new cooling water intake structures. *Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 186–87 (2d Cir. 2004).

minimize. In such a situation, requiring compliance with the applicable obligations could be regarded as “treatment for treatment’s sake” in that the harm that the statute seeks to avoid will not occur even in the absence of compliance.⁶²

a. Availability

All five statutes contain examples of harm-based adjustments. Our survey found the following examples of such adjustments.

CWA. The CWA is illustrative of the availability of harm-based back-end adjustments under the federal environmental laws. The statute authorizes EPA, with the concurrence of the state, to “modify” the second phase of the technology-based effluent limitations for point sources discharging certain kinds of nonconventional pollutants upon a showing that the modification (i.e., the more lenient treatment sought) will not interfere with the maintenance or attainment of water quality that assures protection of public water supplies, assures protection and propagation of a balanced population of fish and wildlife, and allows recreational activities in and on the water.⁶³ In addition, the applicant must show that the modification will not result in discharges “which may reasonably be anticipated to pose an unacceptable risk to human health or the environment because of bioaccumulation, persistency in the environment, acute [or] chronic toxicity . . . , or synergistic propensities.”⁶⁴ In other words, if a point source is able to show that compliance with effluent limitations less stringent than the technology-based limitations that apply to other point sources in the same industry will not adversely affect the water quality goals of the statute, it may be eligible for individualized regulatory relief. The statute authorizes modifications based on similar

62. Industry has long criticized uniform pollution controls such as the CWA’s technology-based effluent limitations as imposing “treatment for treatment’s sake” in that the treatment required by the regulation is unnecessary to protect the resource in question. See, e.g., Robert W. Adler, *Water Quality and Agriculture: Assessing Alternative Futures*, 25 ENVIRONS L. & POL’Y J. 77, 89 (2002); William L. Andreen, *The Evolution of Water Pollution Control in the United States—State, Local, and Federal Efforts, 1789–1972*, 22 STAN. ENVTL. L.J. 145, 193 (2003); Oliver A. Houck, *Of Bats, Birds, and B-A-T: The Convergent Evolution of Environmental Law*, 63 MISS. L.J. 403, 417 (1994); Christopher H. Schroeder, *Clear Consensus, Ambiguous Commitment*, 98 MICH. L. REV. 1876, 1886 (2000) (reviewing DANIEL A. FARBER, *ECO-PRACTICISM* (1999)).

63. 33 U.S.C. § 1311(g)(2)(c) (2000).

64. *Id.* This water quality-based modification only goes so far. The statute bars EPA from issuing a modification that excuses compliance with the first phase of the technology-based effluent limitations. *Id.* § 1311(g)(2)(A). In addition, a modification may not be issued if it will result in additional requirements on other, presumably downstream, point or nonpoint sources. *Id.* § 1311(g)(2)(B).

grounds for publicly-owned treatment works discharging into marine waters.⁶⁵

Similarly, the CWA authorizes EPA or a state administering the permit program for point sources to impose an alternative effluent limitation if it can show that any effluent limitation for the control of the thermal component of any discharge will require controls more stringent than necessary to assure the protection and propagation of shellfish, fish, and wildlife in the receiving water. The alternative limitation must assure the same degree of protection and propagation.⁶⁶

RCRA. RCRA contains a plethora of mechanisms for individualized adjustments based on the lack of potential for the regulated activity to cause environmental harm. RCRA requires EPA to compile a list of hazardous wastes based on listing criteria that include factors such as toxicity, persistence, . . . degradability in nature, [and] potential for accumulation in tissue.”⁶⁷ Entities engaged in the generation, transportation, treatment, storage, or disposal of listed wastes are subject to a variety of regulatory standards issued by EPA.⁶⁸ An individual facility may petition EPA to exclude a waste generated at that facility from listing.⁶⁹ Although the statute does not explicitly provide the grounds for the granting of a delisting petition, EPA regulations require that the petitioner demonstrate that the waste produced at the petitioner’s facility does not meet any of the criteria under which the waste was listed as hazardous.⁷⁰ The CAA contains a similar petition process for the delisting of pollutants that Congress or EPA has designated as hazardous air pollutants.⁷¹

RCRA prohibits the land disposal of certain hazardous wastes unless EPA determines that the prohibition is not required to protect “human health and the environment for as long as the waste remains hazardous.”⁷² The statute further provides that a method of land disposal may not be deemed protective of human health and the environment unless,

65. *Id.* § 1311(h)(2).

66. *Id.* § 1326(a). For a discussion of § 316 thermal discharge variances, see generally 2 WILLIAM H. RODGERS, JR., ENVIRONMENTAL LAW: AIR AND WATER 574–77 (1986).

67. 42 U.S.C. §§ 6921(a), (b)(1) (2000).

68. *Id.* §§ 6922–6924.

69. *Id.* § 6921(f)(1).

70. 40 C.F.R. § 260.22(a)(1) (2003). EPA regulations also provide a mechanism for the filing of petitions to add a hazardous waste to the list. *Id.* § 260.23. That mechanism is available to environmental public interest groups.

71. 42 U.S.C. § 7412(b)(3). Petitions also may be filed under this provision to add substances to the list.

72. The statute only actually bans the land disposal of hazardous waste that is not treated in conformity with treatment standards issued by EPA. *Id.* §§ 6924(d)(1), (e)(1), (g)(5).

“upon application by an interested person, it has been demonstrated to [EPA], to a reasonable degree of certainty, that there will be no migration of hazardous constituents from the disposal unit or injection zone for as long as the wastes remain hazardous.”⁷³ RCRA therefore creates a back-end adjustment mechanism to the land disposal prohibition. If a regulated entity can convince EPA that a particular form of land disposal of a particular listed hazardous waste will not allow the waste to migrate in such a way as to threaten human health or the environment, EPA is authorized to lift the prohibition on land disposal.

EPA also has the authority to exempt from groundwater monitoring requirements any structure which EPA finds does not receive or contain liquid waste, is designed to operate to exclude liquid from precipitation or other runoff, uses multiple leak detection systems, and provides for continuing operation and maintenance of these leak detection systems during operation, closure, and post-closure.⁷⁴ EPA may issue the exemption only if it concludes that, as a result of these conditions, there is a reasonable certainty that hazardous constituents will not migrate beyond the outer layer of containment before the end of the required post-closure monitoring period.⁷⁵ This exemption is another example of a back-end adjustment that becomes available if EPA determines that the health and environmental risks that the regulatory program was designed to avoid do not exist in a particular situation.⁷⁶

Still another harm-based adjustment provision in RCRA relates to the use of hazardous waste as fuel. RCRA requires that EPA issue regulatory standards applicable to facilities that produce a fuel from any listed hazardous waste and to facilities that burn any such fuel for purposes of energy recovery as may be necessary to protect human health and the environment.⁷⁷ EPA may exempt from these standards (and from related labeling and recordkeeping requirements) any facility which burns de minimis quantities of hazardous waste as fuel, provided EPA determines the incendiary device sufficiently destroys and removes waste

73. *Id.* §§ 6924(d)(1), (e)(1), (g)(5).

74. *Id.* § 6924(p).

75. *Id.*

76. *See also id.* § 6925(j)(4) (authorizing EPA to modify a statutory prohibition on the receipt, storage, or treatment of hazardous waste in surface impoundments not in compliance with statutory minimum technological requirements if the owner or operator of such an impoundment demonstrates that the impoundment is located, designed, and operated such that no hazardous constituent will migrate into groundwater or surface water).

77. *Id.* § 6924(q)(1).

so as to ensure protection of human health and the environment.⁷⁸ Under such circumstances, presumably, compliance with the regulatory standards is not necessary to avoid risks of health or environmental harm.

CAA. The CAA also contains adjustment provisions designed to eliminate regulatory restrictions that EPA deems unnecessary to achieve air quality objectives or that may even impair the pursuit of clean air.⁷⁹ The 1990 amendments to the statute required all states that had not yet achieved the national ambient air quality standards (NAAQS) for carbon monoxide to revise their implementation plans (known as state implementation plans, or SIPs) to require sale of oxygenated gasoline during the period of the year during which the "area is prone to high ambient concentrations of carbon monoxide."⁸⁰ EPA has the power to waive the application of this requirement if a state demonstrates that the use of oxygenated gasoline would interfere with the attainment of an NAAQS for an air pollutant other than carbon monoxide.⁸¹ EPA also may waive the requirement that oxygenated gasoline be sold if it determines that mobile sources of carbon monoxide do not contribute significantly to carbon monoxide levels in a particular area.⁸²

OSH Act. Harm-based, back-end adjustments are not limited to the federal pollution control laws. The Secretary of Labor may issue such adjustments under the OSH Act, too. The OSH Act permits any affected employer to apply to the Secretary for a variance from an occupational safety and health standard.⁸³ The Secretary must grant the application if he or she finds that the employer

has demonstrated by a preponderance of the evidence that the conditions, practices, means, methods, operations, or processes used or proposed to be used by an employer will provide employment and places

78. *Id.* § 6924(q)(2)(B).

79. The CAA, for example, authorizes EPA to make adjustments to regulatory obligations for sources contained within geographic areas based on the absence of a risk to health or the environment from regulated sources in that area. Thus, the statute affords EPA the discretion to waive any requirement imposed on certain areas that are not in compliance with the NAAQS for particulate matter if it determines that anthropogenic sources of PM-10 do not significantly contribute to the violation of the PM-10 standard in that area. *Id.* § 7513(f).

80. *Id.* § 7545(m)(2).

81. *Id.* § 7545(m)(3)(A).

82. *Id.* § 7545(m)(3)(B). EPA also may delay the effective date of the oxygenated fuels requirement if it finds that there is or is likely to be an inadequate domestic supply of or distribution capacity for oxygenated gasoline in the area. *Id.* § 7545(m)(3)(C). This provision is a form of hardship-based adjustment based on technological inadequacy.

83. 29 U.S.C. § 655(d) (2000).

of employment to his employees which are as safe and healthful as those which would prevail if he complied with the standard.⁸⁴

The variance must prescribe the conditions the employer must maintain and the practices it must adopt to the extent they differ from the standard from which the variance is sought.⁸⁵

ESA. Finally, the ESA also provides for harm-based adjustments. The statute authorizes any interested person to file a petition to add a species to or remove a species from the lists maintained by the Fish and Wildlife Service (FWS) of endangered and threatened species.⁸⁶ The FWS must issue a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted.⁸⁷ If so, the FWS must commence a review of the status of the species concerned.⁸⁸ If the FWS decides to grant a delisting petition, it essentially concludes that the harm or risk to species that the ESA is meant to avoid⁸⁹ does not exist. Similarly, the ESA authorizes interested persons to file petitions to revise critical habitat designations previously made by the FWS.⁹⁰

In certain instances, back-end adjustments may be available not because the affected activity lacks the potential to harm the resource or value that the statute seeks to protect, but instead because the application of the regulation from which relief is sought has the potential to harm other resources or values. EPA has authorized the issuance of variances under the CWA, for example, to point sources able to demonstrate that regulatory compliance “would result in significant adverse impacts on local air quality . . . or significant adverse impacts on local energy markets.”⁹¹ Such an adjustment also qualifies as a harm-based adjustment, although the basis for the adjustment is the desire to avoid adverse cross-media impacts rather than to avoid treatment for treatment’s sake.

84. *Id.*

85. *Id.*

86. 16 U.S.C. § 1533(b)(3)(A) (2000).

87. *Id.*

88. *Id.*

89. The ESA is designed in part “to provide a program for the conservation of . . . endangered species and threatened species.” *Id.* § 1531(b).

90. *Id.* § 1533(b)(3)(D)(i).

91. *Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 192 (2d Cir. 2004) (citing 40 C.F.R. § 125.85(a)(2)).

b. Evaluation

A regulated entity is entitled to a harm-based adjustment if it can establish that the adjustment would not lead to decreased protection for people or the environment. When this situation exists, Congress has authorized the agency either to reduce⁹² or waive⁹³ the regulatory requirement.

Harm-based adjustments, such as these provisions, rationalize regulation because they take into account situations in which the regulated entity does not present any danger to the public or the environment or presents less danger than other regulated entities. Assuming that there is an accurate agency determination regarding the risk issue so that the levels of protection chosen by Congress are not jeopardized through individualized adjustments, this category of back-end adjustments would appear to promote the advantages identified earlier. Regulators can eliminate unnecessary costs, but this is done at the back-end instead of during rulemaking. Moreover, regulated entities do not have to sue the agency and contest the rulemaking in order to get regulatory relief. Presumably, the administrative adjustment process will be less onerous than a judicial challenge would be in many cases.

2. Hardship-Based Adjustments

The harm-based adjustments discussed above recognize that some regulated entities may not be endangering the public or the environment in the manner anticipated by a regulation. Hardship adjustments, by comparison, are based on the adverse economic impact of regulation on an individual firm or on the absence of available technology to comply with regulatory standards. The rationale for hardship-based adjustments is as follows:

Though Congress may have decided that industries should internalize certain environmental costs, . . . Congress's broad legislative objectives do not automatically outweigh the continued survival of regulated firms. The regulatory cures for environmental pollution . . . should not necessarily cripple the industries to which they apply. Stability and preservation of economic order go hand in hand with environmental or economic reforms. The regulatory preference for individual firm sur-

92. See *supra* notes 64–66 (discussing the CWA), 83–85 (discussing the OSH Act).

93. See *supra* notes 68–78 (discussing RCRA), 79–82 (discussing the CAA) and 86–91 (discussing the ESA).

vival does not necessarily mean that shutdowns must always be avoided, but such extreme consequences should be the result of a considered process, not the unintended or unconscious fallout of an overbroad statute or rule.⁹⁴

a. Availability

All five statutes also provide for incremental adjustments on the basis of hardship. Our survey found the following examples of such adjustments.

CWA. The CWA authorizes EPA to establish technology-based effluent limitations as the principal device for achieving⁹⁵ the statute's fishable/swimmable waters goal.⁹⁶ To avoid the statutory prohibition on discharges into navigable waters,⁹⁷ point sources of surface water pollution must comply with a phased series of effluent limitations, which are incorporated into individual permits issued either by EPA or an authorized state. The statute authorizes EPA, however, to "modify"⁹⁸ the requirements of the second phase of the effluent limitations "upon a showing by the owner or operator of such point source . . . that such modified requirements (1) will represent the maximum use of technology within the economic capability of the owner or operator; and (2) will result in reasonable further progress toward the elimination of the discharge of pollutants."⁹⁹ Thus, as the Supreme Court has explained, "the economic ability of the individual operator to meet the costs of effluent reductions may in some circumstances justify granting a variance from the [phase two, technology-based] limitations."¹⁰⁰ This kind of hardship-based adjustment "creates for a particular point source a [technology-based] standard that represents for it the same sort of economic and technological commitment as the general . . . standard creates for the class."¹⁰¹

94. Alfred C. Aman, Jr., *Administrative Equity: An Analysis of Exceptions to Administrative Rules*, 1982 DUKE L.J. 277, 302-03.

95. 33 U.S.C. § 1311(b) (2000).

96. *Id.* § 1251(a)(2).

97. *Id.* § 1311(a).

98. The Supreme Court has referred to these modifications as variances. *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 136 (1977).

99. 33 U.S.C. § 1311(c). These modifications apply to point sources discharging nonconventional pollutants. *See id.* § 1311(l) (barring EPA from issuing a modification with respect to listed toxic pollutants).

100. *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 72 (1980).

101. *Id.* at 74. In addition to demonstrating economic hardship, the applicant must show that it will make "reasonable further progress toward the elimination of the discharge of pollutants." 33 U.S.C. § 1311(c). Accordingly, the economic hardship that compliance with regulatory standards

Further, EPA regulations authorize variances from the category-wide effluent limitation regulations on a different basis that relates to the economic impact of regulation on a particular discharger. The regulations make variances available to dischargers able to demonstrate that compliance with the national limits would result in the imposition of a removal cost that is “wholly out of proportion to the removal cost considered during development of the national limits.”¹⁰²

RCRA. RCRA contains an adjustment mechanism based on the unavailability of pollution control technology. RCRA subjects those involved in the treatment, storage, or disposal of hazardous waste to the most rigorous regulatory treatment. When Congress amended the statute in 1984, it adopted a series of bans on the land disposal¹⁰³ of certain kinds of hazardous waste, including wastes containing free cyanides or heavy metals, solvents, or dioxins.¹⁰⁴ RCRA authorizes EPA to defer the effective date of one or more of the land disposal prohibitions based on the unavailability of adequate alternative treatment, recovery, or disposal capacity, provided it protects human health and the environment.¹⁰⁵ If EPA grants a deadline extension (which the statute calls a variance), hazardous waste may be disposed in a landfill or surface impoundment for the duration of the extension period, provided the facility at which the

for a class of point sources would cause for an individual point source is allowed to undercut the statutory goal of reducing water pollution only up to a point.

The CWA also provided relief to publicly owned treatment works on hardship grounds. The statute allowed the owners or operators of such works to request that EPA or an authorized state extend the time for compliance with the technology-based controls applicable to publicly owned treatment works (called secondary treatment). *Id.* §§ 1311(b)(1)(B), 1314(d). To be eligible for such an extension, the applicant had to show that construction was required for the treatment works to achieve secondary treatment but that the United States had failed to make financial assistance available to the treatment works in time for it to achieve the discharge limitations based on secondary treatment. *Id.* § 1311(i). Requests by municipalities for an extension under this provision had to be filed within 180 days of February 4, 1987.

102. 40 C.F.R. § 125.31(b)(3)(i) (2003). This provision is part of the FDF variance mechanism discussed more fully below in connection with fairness-based adjustments. In *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64 (1980), the Court held that, even though FDF variances were available from the phase one, technology-based effluent limitations for point sources, FDF variances were not available on the ground that a particular discharger could not afford to comply with the national limits. *Id.* at 74–78. See also *Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 192 (2d Cir. 2004) (citing 40 C.F.R. § 125.85(a)(2) and stating that a variance may be available from cooling water intake structure regulations based on “compliance costs wholly out of proportion to the costs the EPA considered in establishing the requirement” for which the variance is sought).

103. For purposes of this prohibition, “land disposal” includes “placement of such hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, or underground mine or cave.” 42 U.S.C. § 6924(k) (2000).

104. *Id.* § 6924(d)–(e). The 1984 amendments also banned the disposal of these wastes into deep injection wells, *id.* § 6924(f), and required EPA to determine whether to ban the land disposal of other listed hazardous wastes pursuant to a statutory timetable. *Id.* § 6924(g)(4)–(5).

105. *Id.* § 6924(h)(2).

disposal occurs complies with minimum technological requirements (such as installation of liners and leachate collection systems and the performance of groundwater monitoring) set forth in the statute.¹⁰⁶

CAA. The CAA also envisions the issuance of back-end adjustments based on economic hardship or technological infeasibility.¹⁰⁷ For the most part, those adjustments are issued by the states, not by EPA.¹⁰⁸ EPA is responsible under the CAA for issuing NAAQS that are requisite to protect the public health and welfare.¹⁰⁹ The statute delegates to the states the authority to devise SIPs to achieve the NAAQS.¹¹⁰ States still have considerable discretion to determine the manner in which they will control emissions of air pollutants, provided the mix of controls the state devises is sufficient to achieve the NAAQS,¹¹¹ even though that discretion was reduced by both the 1977 and 1990 amendments.¹¹² States may accommodate concerns that pollution control requirements will adversely affect the economic viability of a regulated source in the implementation plan itself.¹¹³ Alternatively, a regulated air pollution source may apply to the state agency that administers the plan for a variance from the plan, and such a variance may be based on claims of economic hardship or

106. *Id.* § 6924(h)(4).

107. In addition to the individualized adjustment mechanisms described below, the CAA provides for certain “global adjustments” on feasibility grounds as well. For example, the statute authorizes EPA, upon application by a state, to extend the attainment date for compliance with the national ambient air quality standards for particulate matter if the state demonstrates that compliance with the statutory deadline “would be impracticable” and that the state has already required the most stringent control measures that can be feasibly implemented in the area. *Id.* § 7513(e).

108. *But see* 40 C.F.R. §§ 80.560–80.561 (allowing EPA to grant hardship-based relief from requirements of diesel sulfur control program).

109. 42 U.S.C. § 7409(b).

110. *Id.* § 7410(a); *see also id.* § 7407(a) (declaring that each state has the “primary responsibility for assuring air quality within the entire geographic area comprising such State by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained . . . in such State”).

111. *See Union Elec. Co. v. EPA*, 427 U.S. 246, 267 (1976) (“the State has virtually absolute power in allocating emission limitations so long as the national standards are met”); *Train v. Natural Res. Def. Council, Inc.*, 421 U.S. 60, 79 (1975) (“so long as the ultimate effect of a State’s choice of emission limitations is compliance with the national standards for ambient air, the State is at liberty to adopt whatever mix of emission limitations it deems best suited to its particular situation”).

112. *See* ROBERT L. GLICKSMAN, ET AL., ENVIRONMENTAL PROTECTION: LAW AND POLICY 329 (4th ed. 2003) (discussing the effect of the 1990 amendments).

113. *See Union Elec. Co.*, 427 U.S. at 266. The Court states:

Perhaps the most important forum for consideration of claims of economic and technological infeasibility is before the state agency formulating the implementation plan. So long as the national standards are met, the State may select whatever mix of control devices it desires, and industries with particular economic or technological problems may seek special treatment in the plan itself.

Id. (citations omitted).

technological feasibility. The Supreme Court has stated that, while nothing in the CAA requires the states to grant variances based on claims of economic or technological infeasibility, the statute delegates the authority to the states to make adjustments to the SIP on these grounds.¹¹⁴ After the 1990 amendments to the CAA, the states have the authority to accommodate concerns based on economic hardship through the issuance of individual permits.¹¹⁵

The CAA also authorizes EPA and the states to adjust the obligations of a particular class of air pollution sources, primary nonferrous smelters, based on technological unavailability. Either EPA or a state may issue a primary nonferrous smelter order, which becomes part of the state implementation plan, if an individual smelter is unable to meet the implementation plan's deadline for compliance with a sulfur oxide emission standard because no means of emission limitation has been adequately determined to be reasonably available.¹¹⁶ The recipient of such an order must comply with whatever interim measures EPA determines are necessary to assure attainment and maintenance of the NAAQS, taking into account all variances, extensions, waivers, and primary nonferrous smelter orders previously issued under the CAA.¹¹⁷ EPA also may establish alternative, less stringent emission limitations for coal-fired utilities subject to the nitrogen oxides emission reduction program created in 1990 as part of the acid deposition control program if the utility can show that it cannot meet the applicable limitation using the technology on which EPA based the limitation.¹¹⁸

Finally, the CAA provides for adjustments to avoid economic hardship upon the initiative of a state governor, rather than at the behest of individual regulated entities. The governor may submit to EPA a proposed revision to the state's implementation plan that meets CAA requirements and that is necessary to prevent the closing of any source of air pollution and substantial increases in unemployment that would result from such a closing.¹¹⁹ If EPA has neither approved nor disapproved the

114. *Id.* at 267 n.16 (citing 40 C.F.R. §§ 51.2(b), (d) (1975)); *see also Train*, 421 U.S. at 69 n.6 (quoting GA. CODE ANN. § 88-912 (1971)) (allowing issuance of variances based on "special circumstances which would render strict compliance unreasonable, unduly burdensome, or impractical . . . or because strict compliance would result in substantial curtailment or closing down of one or more businesses, plants or operations"). The electric utility that brought suit in *Union Electric* apparently received a variance on economic hardship grounds. 427 U.S. at 252.

115. The permit program created by the 1990 amendments is governed by 42 U.S.C. §§ 7661-7661f (2000).

116. *Id.* § 7419(b)(3).

117. *Id.* § 7419(d)(1)(A).

118. *Id.* § 7651f(d)(2).

119. *Id.* § 7410(g)(1).

proposal within twelve months of submission, the governor may issue a temporary emergency suspension of the part of the implementation plan subject to the proposed revision.¹²⁰ If the governor finds that the source is unable to comply solely because of the conditions upon which the suspension was based, the suspension order may include a provision delaying any compliance order or increment of progress to which a pollution source is subject.¹²¹

The OSH Act. Congress has provided for hardship-based adjustments from workplace health and safety standards as well as from the federal pollution control laws. The OSH Act authorizes any employer to apply to the Secretary of Labor for a temporary order granting a variance from an occupational safety and health standard promulgated by OSHA.¹²² To qualify for a variance, the employer must establish that it is unable to comply with a standard by its effective date because of unavailability of personnel or unavailability of materials and equipment or because required construction or alteration of facilities cannot be completed by the effective date.¹²³ In addition, the employer must show that it is taking all available steps to protect its employees against the hazards covered by the standard and that it has an effective program for coming into compliance with the standard as soon as practicable.¹²⁴ Any variance issued by the Secretary must prescribe the practices the employer must use while the order is in effect.¹²⁵

ESA. Finally, Congress has authorized the issuance of hardship-based adjustments to the prohibition on the taking of endangered species in the ESA. If any person enters into a contract regarding a species of fish, wildlife, or plant before notice is published in the Federal Register listing that species as endangered, and if the subsequent listing of the species will cause "undue economic hardship to such person under the contract," then the Secretary of the Interior may exempt the person from the taking prohibition "in order to minimize such hardship."¹²⁶ The statute defines undue economic hardship to include substantial economic

120. *Id.* A suspension may not last more than four months and may be disapproved by EPA if it does not meet the requirements for implementation plans under the CAA. *Id.* § 7410(g)(2).

121. *Id.* § 7410(g)(3).

122. 29 U.S.C. § 655(b)(6)(A) (2000).

123. *Id.*

124. *Id.*

125. *Id.* Any employer seeking a variance must certify that it has informed employees of the application for a variance. *Id.* § 655(b)(6)(B)(v).

126. 16 U.S.C. § 1539(b)(1). No exemption may last more than one year from the date of publication in the Federal Register of notice of consideration of the species concerned. *Id.*

loss resulting from inability to perform the contract, substantial economic loss to persons who derived a significant portion of their income from the lawful procurement of any listed species, or curtailment of subsistence taking made unlawful by the ESA.¹²⁷ The Secretary may only grant a hardship exemption upon finding that it was applied for in good faith, it will not operate to the disadvantage of the endangered species concerned, and it will be consistent with the ESA's purposes.¹²⁸

b. Evaluation

Congress provided for hardship-based adjustments in all five of the statutes that we have studied. A firm is entitled to a hardship-based adjustment because of its financial difficulty in meeting its regulatory obligations. Although such hardship does not excuse a regulated entity from reducing risks to people or the environment, it may justify a lesser regulatory burden. Thus, unlike a harm-based adjustment, this back-end process exposes people or the environment to greater risks than if a firm were required to comply with the existing regulatory requirement. These provisions reflect one of the ways that Congress takes into account regulatory costs without relying on a cost-benefit test to establish the level of regulation.¹²⁹

Congress has sought to balance cost concerns with regulatory protection in various ways. The CWA permits EPA to modify some regulatory requirements applicable to point sources if those requirements are not "within the economic capability" of a regulated entity, but the revised requirement must "result in reasonable further progress toward the elimination of the discharge of pollutants."¹³⁰ RCRA permits EPA to defer compliance with land disposal prohibitions based on the unavailability of necessary technology or disposal capacity.¹³¹ The CAA permits states to issue variances from implementation plan requirements that accommodate economic concerns, but after these adjustments, the state must still come into compliance with national air quality standards.¹³² OSHA is

127. *Id.* § 1539(b)(2). "The Secretary may make further requirements for a showing of undue economic hardship as he deems fit." *Id.* § 1539(b)(3).

128. *Id.* § 1539(d). These limitations also apply to the technology-improving exemption for experimental populations described below. See *infra* notes 160–61 and accompanying text.

129. See *supra* notes 30–32 and accompanying text (discussing the ways in which costs are taken into account in regulatory statutes). See also *supra* notes 48–53 and accompanying text.

130. 33 U.S.C. § 1311(c); *supra* note 99 and accompanying text.

131. See *supra* notes 105–06 and accompanying text.

132. See *supra* notes 108–15 and accompanying text; 42 U.S.C. § 7410(l) (prohibiting EPA from approving revision to an SIP "if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress").

permitted to grant variances from occupational safety and health standards based on the unavailability of personnel or materials, but only if the employer commits to taking all necessary steps to safeguard employees against the relevant workplace hazards.¹³³ The ESA authorizes exemptions from the taking prohibition based on “undue economic hardship,” but only if the exemption will not operate to the disadvantage of the species concerned and will be consistent with statutory purposes.¹³⁴

As a general proposition, we think that regulated entities should qualify for hardship-based adjustments when regulations will produce excessive regulatory costs, but only if the public and the environment are still substantially protected. We understand that regulation can increase the cost of business for firms, and sometimes substantially so, but existing statutes commit the country to a precautionary tilt in favor of protecting people and the environment.¹³⁵ That tilt is reflected in the willingness of Congress to force some plants unable to comply with their regulatory obligations to shut down.¹³⁶ As one court noted in connection with the CWA, “Congress clearly contemplated that cleaning up the nation’s waters might necessitate the closing of some marginal plants.”¹³⁷ A back-end process that granted regulatory relief without a demonstration of significant economic dislocation would be inconsistent with this approach. So would a regulatory system that fails to obtain significant protection for the public in order to account for excessive costs. While some adjustment may be necessary because of high costs, the public and the environment should still be substantially protected.

On their face, the previous provisions appear to meet these objectives. The devil, of course, is in the details. The way in which regulators interpret these provisions can have a significant impact on how easily regulated entities qualify for an adjustment and how much protection people and the environment actually receive. Because of the frequent clash between the goals of regulatory statutes and the economic self-interest of regulated entities, this category of back-end adjustments is

133. See *supra* notes 122–24 and accompanying text.

134. See *supra* note 128 and accompanying text.

135. SHAPIRO & GLICKSMAN, *supra* note 2, at 31.

136. See, e.g., *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1025 (D.C. Cir. 1978) (discussing the CWA).

137. *Am. Iron & Steel Inst. v. EPA*, 526 F.2d 1027, 1052 (3d Cir. 1975); cf. *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 491 (2001) (Breyer, J., concurring) (quoting 116 CONG. REC. 32,901–02 (1970), reprinted in 1 LEGISLATIVE HISTORY OF THE CLEAN AIR ACT AMENDMENTS OF 1970, at 227 (1974), and indicating that Senator Muskie, the principal sponsor of the CAA, construed the statute as seeking to protect the public health, “even if that means that ‘industries will be asked to do what seems to be impossible at the present time’”).

troublesome. Certainly, hardship-based adjustments have greater potential to frustrate the goals of the statutes that authorize them than either the harm-based adjustments considered above (which are based on the absence of the harm sought to be avoided) or the technology-improvement adjustments considered below (which are based on the hope that potential long-term future risk reductions will more than offset short-term increases in risk). We hesitate to endorse a system that precludes all hardship-based adjustments for fear that such a system will produce economic impacts that society deems unacceptable,¹³⁸ thereby reducing public support for and the legitimacy of the regulatory program. At the same time, readily available hardship-based adjustments can easily undercut the ability of a regulatory program to achieve its protective goals. For this reason, the need to ensure that regulators are accountable in their resolution of requests for hardship-based adjustments is particularly important. The system of accountability provided by statute must be capable of ensuring that back-end adjustments, either individually or cumulatively, do not result in levels of risk or harm antithetical to the regulatory programs designed to control them. We consider the accountability of states and agencies when they grant these adjustments below.

Having recognized that adjustments based on economic harm or technological unavailability are probably inevitable, we nevertheless reach the conclusion that such adjustments are inappropriate if the regulatory requirement from which relief is sought is in the nature of a technology-forcing mandate. A technology-forcing requirement is one that is "expressly designed to force regulated sources to develop pollution control devices [or other control mechanisms] that might at the time appear to be economically or technologically infeasible."¹³⁹ Hardship-based adjustments to technology-forcing standards are inappropriate because these adjustments frustrate the objective of pushing regulated firms that are economically or technologically incapable of compliance with current technology to develop new technology that is capable of doing the job.

138. *But see supra* notes 136-37 and accompanying text (discussing legislative intent that economically marginal firms shut down if unable to comply with CWA regulations).

139. *Union Elec. Co. v. EPA*, 427 U.S. 246, 257 (1976). *See also* *Natural Res. Def. Council v. Reilly*, 983 F.2d 259, 268 (D.C. Cir. 1993) (describing technology-forcing, or absolute, standards as those that "require compliance with statutorily prescribed standards and time tables, irrespective of present technologies. Absolute standards presume that industry can be driven to develop the requisite technologies.").

3. Technology-Improvement Adjustments

Congress has afforded relief to regulated entities under the five statutes we surveyed using a third kind of back-end adjustment, namely the technology-improvement adjustment. Such an adjustment grants time extensions for regulatory obligations as an incentive for those entities to engage in research to develop innovative technologies that will help achieve health, safety, and environmental protection objectives more effectively or more efficiently.

a. Availability

All of the statutes except RCRA contain examples of this type of adjustment. Our survey revealed the following illustrations of technology-improvement adjustments.

CWA. The CWA offers back-end adjustments in the form of deadline extensions based on an effort to induce the development of new technology by regulated entities. The statute provides that EPA or an authorized state may extend the deadline for compliance with the second phase of the technology-based effluent limitations by as much as two years.¹⁴⁰ To qualify for such a deadline extension, the applicant must show that it proposes to comply with the applicable effluent limitations by “replacing existing production capacity with an innovative production process which will result in an effluent reduction significantly greater than required by the limitation otherwise applicable to such facility” or with an innovative control technique that has a substantial likelihood for achieving such an effluent reduction.¹⁴¹ Alternatively, the applicant can qualify for a deadline extension if it demonstrates that it will use an innovative system that has the potential for significantly lower costs than the systems that EPA has determined to be economically achievable for that kind of facility.¹⁴² A technology-forcing deadline extension under the CWA is available only if EPA or the state determines that the innovative technology has the potential for industry-wide application.¹⁴³ Congress apparently was willing to allow higher levels of pollution over the short run at a particular point source if that point source committed to developing innovative technology that had the potential for achieving

140. 33 U.S.C. § 1311(k) (2000).

141. *Id.*

142. *Id.*

143. *Id.*

more effective or more efficient pollution control on an industry-wide basis in the long run. The CWA provides a similar compliance deadline extension for indirect dischargers proposing to comply with pretreatment requirements through the use of innovative systems.¹⁴⁴

CAA. The CAA contains a similar technology-improvement adjustment mechanism that applies to new stationary sources of air pollution.¹⁴⁵ Any person proposing to own or operate a new source may request that EPA issue a waiver from federal standards of performance “to encourage the use of an innovative technological system of continuous emission reduction.”¹⁴⁶ EPA may issue such a waiver if it finds that the proposed system has not been adequately demonstrated, the proposed system will operate effectively and there is a substantial likelihood that it will achieve greater continuous emission reduction than required under the standard or achieve at least an equivalent reduction at lower cost, and the source shows that the “proposed system will not cause or contribute to an unreasonable risk to public health, welfare, or safety in its operation.”¹⁴⁷ No waiver may be issued if it would prevent attainment or maintenance of the NAAQS,¹⁴⁸ and the number of waivers issued with respect to a proposed system of emission reduction may not exceed the number EPA deems necessary to ascertain whether or not the system will achieve the desired results without creating unreasonable risks to health, welfare, or safety.¹⁴⁹

Another technology-improvement adjustment created by the CAA relates to compliance with emission standards applicable to stationary sources of hazardous air pollutants. EPA or a state with an EPA-approved permit program may issue a permit allowing an existing source to meet an alternative emission limitation if the source demonstrates that it has achieved a reduction of 90 percent or more in emissions for six years from the date the regulatory standard would otherwise have applied, provided the source achieved that reduction before the standard was first proposed.¹⁵⁰ The apparent purpose of this provision was to provide incentives for sources of hazardous air pollutants to begin reducing

144. *Id.* § 1317(e). The extension is available only if EPA or the state determines that issuance of the extension will not cause a publicly owned treatment works to violate its permit or applicable sewage sludge disposal requirements. *Id.* § 1317(e)(2)(A).

145. A “new source” for these purposes is one upon which “construction or modification commenced after the publication of regulations (or . . . proposed regulations) prescribing a standard of performance” for the relevant category of sources. 42 U.S.C. § 7411(a)(2) (2000).

146. *Id.* § 7411(j)(1)(A).

147. *Id.*

148. *Id.* § 7411(j)(1)(B)(i).

149. *Id.* § 7411(j)(1)(C).

150. *Id.* § 7412(i)(5)(A).

their emissions even before they were required to do so in exchange for the promise of relatively lenient emission controls when standards for its category of source were eventually promulgated.

The CAA also authorizes EPA to waive the provisions of emission standards for motor vehicle engines to encourage the development of better pollution control technology. EPA may issue a waiver of the standard for emissions of oxides of nitrogen from light-duty engines and vehicles upon the petition of a motor vehicle manufacturer if the manufacturer demonstrates that a "waiver is necessary to permit the use of an innovative power train technology, or innovative emission control device or system."¹⁵¹ The waiver is available only if it would not endanger public health, there is a substantial likelihood that compliance will be possible when the waiver expires, and the technology has a "potential for long-term air quality benefit and has the potential to meet or exceed the average fuel economy standard."¹⁵²

Even the market-based acid deposition control provisions allow for adjustments as a means of improving pollution control performance. The 1990 amendments to the CAA provided for the allocation of "allowances" to regulated sources of sulfur dioxide emissions.¹⁵³ The statute prohibits any source from emitting sulfur dioxide in excess of its allowances.¹⁵⁴ Allowances may be bought and sold¹⁵⁵ so that a source able to limit its sulfur dioxide emissions to amounts lower than the allowances it holds may sell its excess allowances either to another source unable to comply with the emissions cap represented by its allocation of allowances or to a public interest group that wants to retire allowances from the system. The statute allows a regulated source to propose in its permit application to reassign its sulfur dioxide reduction requirements to any other unit under the control of the same owner or operator.¹⁵⁶ EPA may approve the reassignment if it concludes that the reassigned tonnage limits will "achieve the same or greater emissions reduction than would have been achieved" by the transferring source if not for the reassignment.¹⁵⁷ Regulated sources also may petition EPA for extensions of the

151. *Id.* § 7521(b)(3).

152. *Id.* No waiver "shall apply to more than 5 percent of such manufacturer's production or more than fifty thousand vehicles or engines, whichever is greater." *Id.*

153. *Id.* § 7651b(a)(1).

154. *Id.* § 7651c(a)(1). Each allowance constitutes authorization for its holder to emit one ton of sulfur dioxide during a calendar year. *Id.* § 7651a(3).

155. *Id.* § 7651b(b).

156. *Id.*

157. *Id.* § 7651c(b)(5).

deadlines for meeting emission limitation requirements under the acid deposition control program based on the use of certain technologies.¹⁵⁸

OSH Act. The Secretary of Labor has broad authority to issue technology-improvement adjustments from occupational safety and health standards under the OSH Act. The Secretary may grant a variance from any such standard whenever he or she determines, or the Secretary of Health and Human Services certifies, that a variance is necessary to permit an employer to participate in an experiment approved by one of the two Secretaries that is "designed to demonstrate or validate new and improved techniques to safeguard the health or safety of workers."¹⁵⁹ The statute contains no limitations on the number of variances the Secretary may issue or on the duration of any variances issued.

ESA. The ESA also contains a provision authorizing what might be regarded as analogous to a technology-improvement adjustment. The Secretary of the Interior may permit any act that would otherwise qualify as a prohibited taking if it is for "scientific purposes or to enhance the propagation or survival of the affected species, including acts necessary for the establishment and maintenance of experimental populations."¹⁶⁰ As Holly Doremus has explained, "[g]iving landowners permission knowingly or deliberately to take introduced animals in the course of agricultural or other activities on the property will encourage them to host reintroductions. Provided the introduced population can absorb the authorized take, such regulations would further the conservation of the species."¹⁶¹

b. Evaluation

When an agency grants a hardship adjustment, it permits a regulated entity to engage in less protection of people and the environment in light of the excessive costs involved in meeting the level of mandated regulation. A technology-improvement adjustment has another objective. Under this approach, an agency can grant relief from a regulatory mandate if an adjustment is likely to produce either the intended level of protection at lower cost or more environmental protection than required by an existing mandate.

158. *Id.* § 7651c(d)(1).

159. 29 U.S.C. § 655(b)(6)(C).

160. 16 U.S.C. § 1539(a)(1)(A). For discussion of the ESA's treatment of experimental populations, see generally Holly Doremus, *Restoring Endangered Species: The Importance of Being Wild*, 23 HARV. ENVTL. L. REV. 1 (1999).

161. Doremus, *supra* note 160, at 30.

This kind of adjustment has the potential to improve regulatory policy because Congress has been reasonably specific in demanding that there be some advantage in making a technology-improvement adjustment. EPA can grant deadline extensions from technology-based effluent limitations under the CWA but only if an existing point source is committed to developing innovative technology that has the potential to achieve more efficient or more effective pollution control on an industrywide basis in the long run.¹⁶² Under the CAA, new stationary sources¹⁶³ and stationary sources of hazardous air pollutants¹⁶⁴ can obtain waivers from the obligation to comply with existing abatement obligations if they propose to use innovative technologies, but only if there is evidence that the alternative would produce about the same level of protection. A similar waiver concerning emissions standards for motor vehicle emissions is likewise conditioned on evidence that the public health would not be endangered and the new technology is likely to be an improvement over existing technologies.¹⁶⁵ EPA can also make adjustments in the market-based acid rain deposition control provisions, but only if the adjustment will result in the same or greater emissions reductions than would have been achieved without the adjustment.¹⁶⁶

Congress has made similar provisions in the other statutes. OSHA can grant a variance if it is necessary to participate in an experiment to improve worker safety and health.¹⁶⁷ The Secretary of Interior may permit actions that otherwise would violate the taking prohibition of the ESA for scientific purposes or to enhance the propagation or survival of a species.¹⁶⁸

The fact that an agency's power to make an adjustment is conditioned on ensuring that the public and the environment receive a similar level or greater level of protection (at least in the long run) makes this category of adjustments similar to harm-based adjustments. These provisions rationalize regulation because they permit agencies to obtain a similar or enhanced level of protection through the production of more efficient or more effective abatement technologies. Assuming that there is an accurate agency determination regarding the degree to which the

162. See *supra* notes 141–43 and accompanying text.

163. See *supra* notes 145–49 and accompanying text.

164. See *supra* note 150 and accompanying text.

165. See *supra* notes 151–52 and accompanying text.

166. See *supra* notes 153–58 and accompanying text.

167. See *supra* note 159 and accompanying text.

168. See *supra* notes 160–61 and accompanying text.

public is protected and the potential for an improved technology, this provision aids innovation and cost reduction.

4. Fairness-Based Adjustments

The previous adjustments addressed instances where a regulated entity does not present the same level of risk a regulation addresses, where compliance with a regulation presents an economic hardship, or where the agency is willing to allow more time for regulatory compliance in exchange for extracting a commitment from industry to engage in technology-improving research and development. A fourth ground upon which regulatory relief may be available for individual regulated entities is fairness. A fairness-based adjustment addresses factors that affect compliance other than the risks created by a regulated entity, the cost of compliance, or the desire to provide technology-improving incentives.

a. Availability

Our survey revealed two examples of fairness-based adjustments. Congress has provided for such adjustments under the CWA and RCRA.

CWA. As enacted in 1972, the Federal Water Pollution Control Act (now known as the CWA) did not provide for adjustments of industry-wide effluent limitations for individual point sources on fairness grounds. EPA developed by regulation, however, a mechanism called a "fundamentally different factor" or FDF variance, pursuant to which applicable effluent limitations could be made either more or less stringent to the extent that "factors relating to the equipment or facilities involved, the process applied, or other such factors related to such discharger are fundamentally different from the factors considered" by EPA in issuing the effluent limitations for the category or class of point sources involved.¹⁶⁹ The Supreme Court held in an early CWA case that EPA's authority to issue effluent limitations by regulation for classes or categories of point sources was contingent on the availability of variances for individual plants.¹⁷⁰

169. *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112, 122-23 & n.10 (1977) (quoting 40 C.F.R. §§ 415.72, 415.222 (1976)).

170. *Id.* at 128. The Court later held that EPA did not have to make FDF variances from the phase one effluent limitations available on the basis of the economic capability of an individual point source to afford the costs of the classwide effluent limitation regulations. *EPA v. Nat'l Crushed Stone Ass'n*, 449 U.S. 64, 73-78 (1980). Thus, the FDF variance developed by EPA was not a hardship-based adjustment mechanism. A greater than normal cost of compliance, however, could provide the basis for a variance. *Id.* at 68 n.5 (citing 43 Fed. Reg. 50,042 (1978)).

Congress codified the FDF variance mechanism when it adopted the 1987 amendments to the CWA. The statute now provides that EPA, with the concurrence of the state, may establish an alternative effluent limitation that modifies those requirements of the classwide effluent limitation regulations that would otherwise apply to an individual point source¹⁷¹ if the individual facility applying for the alternative requirement demonstrates that “the facility is fundamentally different with respect to the factors (other than cost)” which EPA considered in establishing the classwide effluent limitation regulations.¹⁷² The statute further specifies that “the alternative requirement may be no less stringent than is justified by the fundamental difference” and that it must not “result in a nonwater quality environmental impact which is markedly more adverse than the impact” EPA considered in establishing the classwide regulations.¹⁷³ The premise behind the FDF variance mechanism is that if EPA had known about the unique (fundamentally different) situation of the individual point source when it issued the effluent limitation regulations for the industry involved, it would have concluded that the point source merited differential treatment based on its unique situation.¹⁷⁴ That differential treatment could have been accommodated by creating a separate class for the point source involved. The issuance of an FDF variance “simply represents an alternative procedural mechanism for accomplishing the same result—essentially, promulgation of a rule applicable to a category of one entity.”¹⁷⁵

171. These FDF variances are also available to indirect dischargers subject to categorical pretreatment standards on the same grounds. 33 U.S.C. § 1311(n)(1). Indirect dischargers are facilities that send their waste for treatment at a publicly owned treatment works instead of discharging it directly into waters of the United States.

172. *Id.* § 1311(n)(1)(A).

173. *Id.* § 1311(n)(1)(C), (D). The statute requires that the application be based solely on information submitted to EPA during the rulemaking for establishment of the classwide regulations specifically raising the factors that are fundamentally different for the applicant or on information the applicant did not have a reasonable opportunity to submit during the rulemaking. *Id.* § 1311(n)(1)(B). Thus, the fundamentally different factor must be one that EPA ignored during the rulemaking or that EPA did not have the opportunity to consider at the time of the rulemaking.

174. EPA’s regulations explain that data which could affect the nationally applicable effluent limitations may not be available or may not be considered during the development of the limitations.

As a result, it may be necessary on a case-by-case basis to adjust the national limits, and make them either more or less stringent as they apply to certain dischargers within an industrial category or subcategory. This will only be done if data specific to that discharger indicate it presents factors fundamentally different from those considered by EPA in developing the limit at issue.

40 C.F.R. § 125.30(b) (2003).

175. *Chem. Mfrs. Ass’n v. Natural Res. Def. Council, Inc.*, 470 U.S. 116, 130–31 (1985). Under EPA regulations, however, the FDF variance is issued in the context of informal adjudication rather than informal rulemaking. See *infra* notes 245–51 and accompanying text.

RCRA. RCRA also authorizes what appears to be a fairness-based variance that is analogous to the CWA's FDF variance. In addition to authorizing EPA to extend the deadline for compliance with one of the statute's land disposal prohibitions for a category of facilities, RCRA allows EPA to issue extensions of the deadlines for complying with the same prohibitions on a case-by-case basis. The applicant for such an extension (which the statute refers to as a variance) must demonstrate that there is a binding contractual commitment to construct or otherwise provide alternative treatment, storage, or disposal capacity but that, due to circumstances beyond the control of the applicant, that capacity cannot reasonably be made available by the deadline.¹⁷⁶ We characterize this as a fairness-based adjustment because it appears to be based on the presence of unique circumstances that render a particular treatment, storage, or disposal facility unable to comply with a land disposal prohibition, even though the rest of the industry can. In light of those unique circumstances, it is fair to provide individualized relief to the affected regulated entity.

b. Evaluation

Fairness-based adjustments are made when a regulatory requirement is not a rational policy choice because of the unique situation of the regulated entity. The entity presents the same risk as other firms, and thus it is not entitled to a harm-based exemption. The entity is not claiming excessive cost, and thus it is not entitled to a hardship exemption.¹⁷⁷ Rather, it is entitled to a variance because it is in a fundamentally different situation than other firms that create the same type of risks, and it is therefore inequitable to treat it in the same manner as the regulations treat more typically situated firms.¹⁷⁸ For example, a factory in Alaska may not be able to employ the same pollution reduction technology as other firms because of the extreme cold in many months of the year. Had the agency known about this situation at the time it had written its regulation, it could have written a different regulation for firms in this situation.¹⁷⁹

176. 42 U.S.C. § 6924(h)(3). The extension is limited to one year, renewable for one additional year. *Id.*

177. *See, e.g.,* EPA v. Nat'l Crushed Stone Ass'n, 449 U.S. 64 (1980) (upholding EPA's refusal to issue FDF variances to point sources regulated under the CWA on the basis of economic inability to comply with regulatory obligations).

178. *See supra* notes 172-74 and accompanying text.

179. *See supra* note 175 and accompanying text.

Although Congress has permitted adjustments on this basis under the CWA, it has also required that any alternative requirement be no less stringent than is justified by the regulated firm's unique situation.¹⁸⁰ The CWA's FDF variance provision also requires the applicant for a variance to demonstrate that the relief it seeks will not result in a disproportionately adverse non-water quality impact.¹⁸¹ By limiting the level of relief provided by the variance to the amount justified by the fundamentally different factor, the statute provides some safeguards against the creation of increased environmental risk. In a sense, this restriction represents an attempt to ensure that the recipient of a variance "do the most it can" to protect the environment, in light of its unique situation. EPA's regulations include an additional requirement that a variance recipient maintain pre-existing regulatory requirements.¹⁸² We would be more comfortable with a statutory fairness-based adjustment that not only restricts relief to the level justified by the unique situation involved but also insists upon maintenance of some minimum level of health, safety, or environmental protection.

Congress has built similar protective safeguards into the provision of RCRA that arguably qualifies as a fairness-based adjustment.¹⁸³ EPA may issue individualized relief from RCRA's land disposal prohibitions based on the unavailability of alternative treatment, storage, or disposal capacity only if the affected hazardous waste is disposed in a facility that complies with minimum technological requirements, such as liners and groundwater monitoring.¹⁸⁴

5. Policy Conflict-Based Adjustments

All of the previous adjustments focus on policy factors related to the statute being enforced by an agency. Congress has sometimes provided for the modification of regulatory requirements when compliance with those requirements would conflict with other policy objectives that Congress has deemed important.

180. See *supra* note 173 and accompanying text.

181. 33 U.S.C. § 1311(n)(1)(D).

182. 40 C.F.R. § 125.31(b)(2) (2003).

183. See *supra* note 176 and accompanying text.

184. 42 U.S.C. § 6924(h)(4), (o).

a. Availability

Our survey found a number of policy factors that Congress uses to make conflict-based adjustments. Agencies are authorized to make adjustments in light of small business status, nationality security, energy policy, and other factors. With one moribund exception, however, Congress has not authorized adjustments to promote economic efficiency.

Small Businesses. Congress often has accommodated important social values by affording preferential treatment to small business entities. As Professor Richard Pierce has explained, “[t]he belief that small is good and big is bad is deeply rooted in our culture and has affected the contours of the United States legal system significantly since the nation’s founding.”¹⁸⁵ The government’s decision to promote the values associated with small business enterprise is reflected in the fact that “[e]very regulatory system includes a variety of features that confer favorable treatment on small firms.”¹⁸⁶

One example of this pattern of relatively lenient treatment for small businesses arises under RCRA. RCRA required that EPA promulgate standards by 1986 for regulation of hazardous waste that is generated in small quantities.¹⁸⁷ These standards, which were to include standards relating to the legitimate use, reuse, recycling, and reclamation of such wastes, could vary from the standards applicable to hazardous waste generated by large quantity generators but had to be sufficient to protect human health and the environment.¹⁸⁸ EPA regulations under the CAA provide for economic hardship extensions for small refiners of the deadlines for complying with requirements for sulfur in gasoline.¹⁸⁹

National Security. A common ground for issuance of back-end adjustments is the potential for health, safety, or environmental regulation to conflict with the national security interests of the United States.¹⁹⁰ Many federal pollution control statutes require that federally owned fa-

185. Richard J. Pierce, Jr., *Small Is Not Beautiful: The Case Against Special Regulatory Treatment of Small Firms*, 50 ADMIN. L. REV. 537, 538 (1998).

186. *Id.* at 539. According to Pierce, EPA alone has nearly fifty regulations in which the scope or stringency of the regulation varies with firm size or amount of pollution emitted. *Id.* at 542 n.25 (citing CHARLES BROWN ET AL., EMPLOYERS LARGE AND SMALL 82–83 (1990)).

187. 42 U.S.C. § 6921(d)(1).

188. 42 U.S.C. § 6921(d)(2).

189. 40 C.F.R. §§ 80.225–80.270 (2003). See also *id.* §§ 80.550–80.553 (listing similar deadline extensions from requirements of diesel fuel sulfur control program).

190. “Historically, the call of military necessity has been in direct conflict with the goal of environmental protection. National security and environmental regulation were seen as an either/or proposition, with the environment uniformly sacrificed in the name of national defense.” Joshua E. Latham, *The Military Munitions Rule and Environmental Regulation of Munitions*, 27 B.C. ENVTL. AFF. L. REV. 467, 469 (2000).

cilities comply with regulatory requirements to the same extent as non-governmental entities engaged in the same activity. The statutes also authorize exemptions, however, to protect national security. The CWA, for example, authorizes the President to exempt any effluent source operated by a federal agency from compliance with water pollution requirements “if he determines it to be in the paramount interest of the United States to do so.”¹⁹¹ In addition, the President may exempt from regulation any weaponry, equipment, aircraft, vessels, vehicles, and other property (and access to property) owned or operated by the armed forces on the same grounds.¹⁹² The President has similar authority to provide exemptions from the obligations of federal facilities to comply with regulatory requirements on national security grounds under RCRA¹⁹³ and the CAA.¹⁹⁴ The CAA also empowers the President to issue exemptions on national security grounds from national emission standards for hazardous air pollutants¹⁹⁵ and from the prohibition on production and use of ozone-depleting chemicals.¹⁹⁶ The OSH Act authorizes the Secretary of Labor to issue “reasonable variations, tolerances, and exemptions” from any statutory requirements “as he may find necessary and proper to avoid serious impairment of the national defense.”¹⁹⁷ Finally, the ESA allows the Endangered Species Committee to grant an exemption from the no jeopardy prohibition for any agency action if the Secretary of Defense finds that it is necessary for reasons of national security.¹⁹⁸

Energy Policy. The CAA provides a back-end adjustment based on the potential conflict between national environmental and energy policy objectives. Upon application by the owner or operator of a fuel burning stationary source, the governor of the state in which the source is located may petition the President to determine that an energy emergency exists justifying a temporary suspension of part of an applicable state implementation plan, provided there are no other adequate means of respond-

191. 33 U.S.C. § 1323(a).

192. *Id.* § 1323(a).

193. 42 U.S.C. § 6961(a) (authorizing the President to exempt any federal solid waste management facility if it is in the paramount interest of the United States).

194. *Id.* § 7418(b). The CAA exemption authority also applies to weaponry, equipment, aircraft, vehicles, or other classes of property owned or operated by the armed forces or by the National Guard of any state and which are “uniquely military in nature.” *Id.*

195. *Id.* § 7412(i)(4).

196. *Id.* § 7671c(f). EPA must determine that adequate substitutes are not available. *Id.*

197. 29 U.S.C. § 665.

198. 16 U.S.C. § 1536(h)(1)(A)(iii). The no jeopardy prohibition is described below at notes 209–11 and accompanying text.

ing to the energy emergency.¹⁹⁹ If the President determines that an emergency exists, the governor may issue a temporary suspension of the plan. The governor may issue a suspension to a source only if the governor finds that a temporary energy emergency exists in the vicinity of the source involving high levels of unemployment or loss of necessary energy supplies for residences and that the unemployment or loss of supplies can be alleviated by the suspension.²⁰⁰ A suspension may authorize a delay in any compliance schedule or increment of progress to which the source is subject.²⁰¹ EPA also has provided for the issuance of back-end adjustments by regulation in situations where regulatory compliance would adversely affect national energy policy.²⁰²

Other Objectives. Back-end adjustments serve to accommodate a variety of other policy concerns. The CAA provides a host of exceptions from the phase-out of production and consumption of substances with the potential to deplete the stratospheric ozone layer based on the need to promote policy goals other than protection of air quality. EPA has the power to authorize the production of chemical substances otherwise scheduled to be phased out if the substances are used for "essential applications" (such as testing for metal fatigue and corrosion in airplane engines and parts),²⁰³ are used in medical devices,²⁰⁴ are necessary for aviation safety purposes,²⁰⁵ are necessary to comply with sanitation or food protection,²⁰⁶ or are used for purposes of fire suppression or explosion prevention.²⁰⁷ EPA also may authorize the production of ozone-depleting substances for export to developing countries.²⁰⁸

Policy conflicts also provide the basis for back-end adjustments under the ESA. The ESA mandates that federal agencies insure that their actions are "not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species."²⁰⁹ A federal agency, a

199. 42 U.S.C. § 7410(f)(1)(A)–(B). The President may not delegate this authority to anyone else. *Id.*

200. *Id.* § 7410(f)(2)(A)–(B).

201. *Id.* § 7410(f)(5).

202. *See, e.g.,* *Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 192 (2d Cir. 2004) (providing for variances from cooling water intake structure requirements under the CWA if compliance would result in "significant adverse impacts on local energy markets") (40 C.F.R. § 125.85(a)(2) (2003)).

203. 42 U.S.C. § 7671c(d)(1).

204. *Id.* § 7671c(d)(2); *see also id.* § 7671d(d)(1) (allowing use of methyl chloroform in medical devices pursuant to subsection (d)(2)).

205. *Id.* § 7671c(d)(3).

206. *Id.* § 7671c(d)(5).

207. *Id.* § 7671c(g)(1).

208. *Id.* § 7671c(e)(1).

209. 16 U.S.C. § 1536(a)(2).

governor, or an applicant for a federal permit or license, however, may apply to the Endangered Species Committee for an exemption from this “no jeopardy” prohibition.²¹⁰ The Committee may grant an exemption if it determines that

- (i) there are no reasonable and prudent alternatives to the proposed agency action;
- (ii) the benefits of [the] action clearly outweigh the benefits of alternative courses of action consistent with conserving the species or its critical habitat, and [the] action is in the public interest;
- (iii) the action is of regional or national significance; and
- (iv) neither the Federal agency concerned nor the exemption applicant made any irreversible or irretrievable commitment of resources [to the proposed action].²¹¹

The exemption also must establish reasonable mitigation and enhancement measures as are necessary to minimize the adverse effects of the agency action upon the listed species and its critical habitat.²¹² The second factor listed above justifies characterizing this exemption as a policy conflict-based adjustment. The benefits of the action that qualify it for an exemption are presumably economic or social benefits of some kind, and the action must be in the public interest despite its adverse impacts on listed species.

Similarly, the ESA provides for policy conflict-based adjustments to the statutory prohibition on the taking of endangered species.²¹³ The statute authorizes the Secretary of the Interior to issue a permit for any taking that “is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.”²¹⁴ To qualify for an incidental take permit, an applicant must submit to the agency a habitat conservation plan (HCP) that specifies the impact that will likely result from the taking, the steps the applicant will take to diminish those impacts, and the alternative actions the applicant considered and the reasons why they were not pursued.²¹⁵ The Secretary must issue the incidental take permit if he or she finds that the taking will be incidental, the applicant will take practicable steps to diminish the impacts of the taking, the applicant will make sure

210. *Id.* § 1536(g)(1).

211. *Id.* § 1536(h)(1)(A).

212. *Id.* § 1536(h)(1)(B).

213. *See id.* § 1538(a)(1)(B) (prohibiting any person from taking any endangered species of fish or wildlife located “within the United States or the territorial sea[s] of the United States”).

214. *Id.* § 1539(a)(1)(B).

215. *Id.* § 1539(a)(2)(A).

adequate funding for the HCP will be provided, and the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.²¹⁶ The permit must contain whatever terms and conditions the Secretary deems necessary or appropriate, including reporting requirements.²¹⁷ Although the statute does not specify what policies might override the desire to protect endangered species, we characterized this mechanism as a policy conflict-based adjustment because the strict application of the taking prohibition is subordinated to an activity designed to serve some other legitimate purpose that has the incidental effect of causing the taking of an endangered species. The requirements that the applicant minimize and mitigate adverse impacts on listed species and demonstrate that the taking will not appreciably reduce the likelihood of the survival and recovery of the species provide protection against harm to species despite issuance of the permit.²¹⁸

Other ESA adjustments clearly qualify as policy conflict-based adjustments. The President has the authority under the ESA to issue an exemption from the no jeopardy prohibition for projects for the repair or replacement of public facilities adversely affected by natural disasters.²¹⁹ In addition, the statute specifies that the taking prohibition generally does not apply to the taking of any endangered or threatened species by Alaskan natives if the taking is for subsistence purposes.²²⁰ No taking for subsistence purposes may be accomplished in a wasteful manner.²²¹

Economic Efficiency. Economic efficiency may conflict with health, safety, or environmental regulation. If the costs of complying with a regulation exceed the benefits that society derives from the regulation, compliance with the regulation generates economic inefficiency because the regulation yields a net decline in social welfare. Just as Congress rarely has authorized agencies to promulgate health, safety, or environmental regulation pursuant to a cost-benefit test,²²² it rarely has authorized agencies to provide relief on cost-benefit grounds from regulations promulgated pursuant to some other substantive criterion. One statute in which it has done so is the CWA, which authorizes EPA, with the concurrence of the state, to issue a permit that modifies effluent limitations

216. *Id.* § 1539(a)(2)(B)(i)–(iv).

217. *Id.* § 1539(a)(2)(B)(v).

218. The ESA contains a similar exemption from the taking prohibition for agency actions for which the FWS has issued an incidental take statement. *Id.* § 1536(o)(2).

219. *Id.* § 1536(p). EPA may grant exemptions on similar grounds from the gasoline toxics provisions. 40 C.F.R. § 80.995 (2003).

220. 16 U.S.C. § 1539(e)(1).

221. *Id.* § 1539(e)(2).

222. See SHAPIRO & GLICKSMAN, *supra* note 2, at 32.

on the ground that there is no reasonable relationship between the economic and social costs and the benefits to be obtained from compliance.²²³ EPA has never implemented this provision, however, and it has been characterized as a “dead letter.”²²⁴ The bill that became the CWA originally included a provision that would have authorized the issuance of variances to modified new point sources on cost-benefit grounds, but the provision was deleted in conference and was never adopted.²²⁵

b. Evaluation

The previous provisions all involve environmental policy objectives and considerations of implementation costs and technologies. This category of adjustments permits EPA to take into account other policy considerations, including the promotion of small business,²²⁶ national security,²²⁷ energy policy,²²⁸ and other policies.²²⁹

As a general matter, it is rational for agencies to take into account important public policies that impact a few entities and that were not part of the agency’s considerations when it promulgated a regulation. This assumes, of course, that the extraneous policy objective itself is valid, and some of these objectives have been the subject of criticism. Some analysts, for example, are skeptical about the regulatory breaks that Congress has given small business.²³⁰ It also assumes that Congress or the agency properly balances environmental and other regulatory goals with

223. 33 U.S.C. § 1312(b)(2)(A).

224. Michael P. Healy, *Still Dirty After Twenty-Five Years: Water Quality Standard Enforcement and the Availability of Citizen Suits*, 24 *ECOLOGY L.Q.* 393, 414 (1997) (quoting WILLIAM H. RODGERS, JR., *ENVIRONMENTAL LAW* 26 (2d ed. 1994)); see also JOHN E. BONINE & THOMAS O. MCGARITY, *THE LAW OF ENVIRONMENTAL PROTECTION: CASES-LEGISLATION-POLICIES* 346 (2d ed. 1992).

225. *Riverkeeper, Inc. v. EPA*, 358 F.3d 174, 192–93 n.19 (2d Cir. 2004) (citing S. 2770, 92d Cong., § 2, at 93 (1971); H.R. 11896, 92d Cong. § 2, at 297; S. CONF. REP. NO. 92-1236, at 128–29 (1972)).

226. See *supra* notes 185–89 and accompanying text.

227. See *supra* notes 190–98 and accompanying text.

228. See *supra* notes 199–202 and accompanying text.

229. See *supra* notes 203–218 and accompanying text.

230. See, e.g., Pierce, *supra* note 185, at 576 (“[s]pecial treatment of small firms has little beneficial effect on society and a host of serious bad effects”); Sidney A. Shapiro & Randy Rabinowitz, *Voluntary Regulatory Compliance in Theory and Practice: The Case of OSHA*, 52 *ADMIN. L. REV.* 98, 132–33 (2000). C. Steven Bradford contends in, *Does Size Matter? An Economic Analysis of Small Business Exemptions from Regulation*, 8 *J. SMALL & EMERGING BUS. L.* 1 (2004), that small business exemptions may or may not be efficient depending on the size of the transactions costs involved in granting the exemptions. The same author also has analyzed whether regulatory exemptions in general are economically justified. C. Steven Bradford, *The Cost of Regulatory Exemptions*, 72 *UMKC L. REV.* 857 (2004).

these other concerns when it provides relief from environmental regulation. After September 11, 2001, for example, it has become more difficult to know how to balance national security concerns with environmental protection mandates.²³¹

Congress generally has limited the use of these adjustments in ways that protect people and the environment. In some cases, the adjustment is a time extension, after which the regulated entity must come into compliance.²³² In other cases, Congress has required as much regulatory protection as is feasible in light of the other policy objectives.²³³ Some of the national security adjustments, however, provide unqualified authority for the President or an agency to exempt regulated entities from the need to obey federal regulations.²³⁴ Thus, the extent of public and environmental protection will depend on how many times these exemptions are invoked and the extent of the risks posed by the exempted activities. If the exemption provisions are only used occasionally and are limited to relatively small-scale risks, they would not generally impact the level of protection. But even in those situations they may have a significant adverse impact on persons living near the facility that is exempted.²³⁵

6. Open-Ended Adjustments

As the survey of statutory back-end adjustments above demonstrates, Congress typically spells out in the statute the criteria the agency must use in deciding whether to provide a particular kind of back-end adjustment. Occasionally, however, the statute delegates broad authority to the agency to decide not only whether to issue such adjustments but also the grounds upon which to issue them.

a. Availability

Our survey found only one example of an open-ended authorization. It relates to EPA's authority under the CWA to issue standards of per-

231. See Christopher Gozdor, et al., *Where Streets Have No Name: The Collision of Environmental Law and Information Policy in the Age of Terrorism*, 33 ENVTL. L. REP. 10978 (2003).

232. See, e.g., *supra* note 189 and accompanying text (time extension under RCRA for small businesses); *supra* note 200 and accompanying text (temporary suspension under CAA).

233. See, e.g., *supra* note 212 and accompanying text (explaining that the ESA requires reasonable mitigation and enhancement measures); *supra* note 217 and accompanying text (explaining that the ESA requires such other measures as the agency determines are necessary and appropriate).

234. See, e.g., *supra* notes 190–98 and accompanying text.

235. See Gozdor et al., *supra* note 231, at 10984 (highlighting stories of water pollution at military installations).

formance for marine sanitation devices, which are devices for sewage treatment by vessels.²³⁶ The statute allows the Secretary of the department in which the Coast Guard is operating to “waive applicability of standards and regulations as necessary or appropriate” for individual vessels.²³⁷ The statute provides no guidance on when such a waiver would be necessary or appropriate.

b. Evaluation

The previous categories of adjustments are based on specific criteria that Congress has established. Congress, however, has not always limited an agency’s discretion in this fashion. The CWA, for example, authorizes EPA to waive the applicability of standards and regulations relating to marine sanitation devices “as necessary or appropriate.”²³⁸ This type of authorization is highly problematic as a policy matter because it fails to rein in EPA’s authority by specifying the factors the agency is to balance in granting an adjustment. There is no need for Congress to do business in this fashion. As the previous discussion indicates, Congress has a number of ways that it can provide for adjustments and provide for specific criteria that indicate when a regulated entity is eligible for the adjustment. As Judge Leventhal stated:

Sound administrative procedure contemplates waivers, or exceptions granted only pursuant to a relevant standard—expressed at least in decisions accompanied by published opinions, especially during a period when an approach is in formation, but best expressed in a rule that obviates discriminatory approaches. The agency may not act out of unbridled discretion or whim in granting waivers any more than in any other aspect of its regulatory function. The process viewed as a whole leads to a general rule, and limited waivers or exceptions granted pursuant to an appropriate general standard. This combination of a general rule and limitations is the very stuff of the rule of law, and with diligent effort and attention to essentials administrative agencies may maintain the fundamentals of principled regulation without sacrifice of administrative flexibility and feasibility.²³⁹

236. 33 U.S.C. §§ 1322(b)(1), 1321(a)(3) (2000).

237. *Id.* § 1322(c)(2).

238. *Id.*

239. *WATT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

The absence of statutory standards for the issuance of back-end adjustments invites arbitrary and discriminatory regulation, and the absence of limitations requiring the agency to minimize health, safety, or environmental risk creates the potential for the adjustment process to thwart regulatory goals.

7. Conclusion

Congress has authorized a significant number of back-end adjustments for a variety of purposes in the statutes that we surveyed. Each of the five statutes we surveyed authorizes the administering agency to make back-end adjustments to regulatory standards or prohibitions. In all but one case (the CWA waivers for standards of performance for sewage treatment by vessels), the statutes spell out the substantive criteria for issuance of these adjustments. Each of the five statutes allows an agency to alter regulatory requirements when the activity for which an adjustment is sought does not pose a risk of the kind of harm targeted by those requirements. All of the statutes provide for some sort of adjustment based on economic hardship or technological unavailability. Each, except RCRA, includes authorization to issue technology-improvement adjustments.²⁴⁰ The CWA and RCRA authorize adjustments on fairness grounds. All five statutes provide for the issuance of adjustments as a means of avoiding a conflict between the environmental goals that the regulatory standards seek to promote and conflicting goals or policies that are allowed to trump the environmental goals. National security concerns provide the most common such conflict, but the statutes also seek to accommodate other concerns as diverse as the viability of small businesses and preservation of the lifestyle of Alaskan Natives.

For the most part, the criteria that Congress has established for the issuance of back-end adjustments should lead to more rational public policy according to the previous analysis. Each of the first five kinds of back-end adjustments we described above has the potential to improve regulatory policy. Harm-based adjustments preclude the need for a regulated entity to incur compliance costs when it does not pose the kind of risk to health, safety, or the environment that the regulation from which the adjustment is sought was designed to prevent. Accordingly, these adjustments prevent "treatment for treatment's sake" by requiring control when its absence would do no harm. Hardship-based adjustments pro-

240. RCRA perhaps lacks explicit authorization for technology-improvement adjustments because the land disposal restrictions for certain hazardous wastes are themselves designed to facilitate the development of effective treatment technologies.

vide a means for agencies to take cost into account in determining the appropriate level of regulation for a particular regulated entity without requiring the agency to conduct a formal cost-benefit analysis. Information about the cost of compliance of a particular firm or the availability of control technology to that firm is likely to be more readily available and accurate than the results of a cost-benefit analysis that requires quantification of values that are resistant to expression in terms of dollars and cents (and that ought not to be so expressed on moral grounds). Moreover, if a hardship-based adjustment is issued only on the condition that the recipient of the adjustment continue to provide substantial environmental protection, then such an adjustment should not undercut the purpose of the regulatory program.

Technology-improvement adjustments enable the agency granting them to allow greater levels of harm to occur in the short run in exchange for a commitment on the part of the regulated entity receiving the adjustment to conduct research and development into more effective or efficient risk-reduction technology. If the research succeeds, the agency may be able to ratchet up the level of control for one or more entire industries, thereby more than offsetting the short-term increase in risk that resulted from issuance of the adjustment. Fairness-based adjustments permit the agency to promulgate regulations based on representative conditions within an industry without having to take the time to investigate every peculiarity within the regulated community. If it later turns out that it does not make sense to apply the regulations to a particular entity because it finds itself in a unique situation of which the agency was not aware when it issued the classwide regulations, the agency can adjust that entity's obligations to accommodate its unique situation. Finally, policy conflict-based adjustments reflect a recognition on the part of Congress that there may be instances in which important social policies (like protection of small businesses or the national security) ought to override, at least in part, the desire to achieve reductions in the risk to health, safety, or the environment. Instead of simply sacrificing environmental values wholesale, the statutes vest in the President or in a regulatory agency the authority to adjust the obligations imposed by statute only to the extent necessary to accommodate the conflicting policy. The adjustment is sometimes conditioned by requiring the maintenance of some degree of protection of health, safety, or the environment.

The conclusion that these kinds of back-end adjustments have the potential to improve the rationality of regulation assumes that an agency applies the criteria for issuance sensibly and in good faith. If not, back-end adjustments have the potential to frustrate an agency's statutory mis-

sion to protect people and the environment. In light of this potential downside to the back-end adjustment process, it is important to ensure that agencies are accountable for the decisions they make to issue back-end adjustments. In the next section, we discuss the degree to which agencies are accountable under current legislation and recommend changes to current procedures that would make agencies even more accountable.

IV. THE BACK-END EFFORT AND ACCOUNTABILITY

The efficacy of a back-end adjustment process depends not only on suitable criteria but on how well an agency implements the process. This section considers the potential for misuse of back-end adjustments and then considers whether existing procedures sufficiently guard against this potential. To make this determination, we surveyed the same five statutes considered in Part III to identify what procedures are used. We conclude that notice and comment procedures are generally sufficient to ensure the accountability of the back-end process if augmented by two steps that would increase the transparency of the process for considering back-end adjustments. We propose that agencies create electronic reading rooms for back-end adjustment documents and report annually on the back-end process.

A. *The Potential for Misuse*

The statutory mission of an agency can be frustrated by the back-end process in three ways. Regulators can rely too heavily on an adjustment process, they can fail to consider the cumulative effects of adjustments, or they can grant adjustments in bad faith.

Excessive reliance on back-end adjustments can water down a rule to the point that it is far less effective in protecting the public or the environment than it would be if implemented as designed and without adjustments. Moreover, once the exceptions swallow a rule, regulatory policy becomes incoherent.²⁴¹ Excessive reliance on an adjustment process also will encourage regulated entities not to comply with the original rule. Companies will be reluctant to invest the money it takes to comply with a regulation if they think there is a good chance that they can obtain a favorable adjustment of some sort. Indeed, as noted above, regulators should interpret a large number of legitimate applications for adjustments

241. SHAPIRO & GLICKSMAN, *supra* note 2, at 172.

as evidence that the original rule needs to be reassessed. In this circumstance, reassessment is a more rational approach than granting a large number of adjustments.

The integrity of a rule may also be threatened if regulators fail to consider the cumulative impact of the adjustments.²⁴² In particular, regulators should be concerned that exceptions will cause some people or some areas of the environment to be subject to greater risks than people or areas in which the original regulation is enforced. This result may occur if an agency grants adjustments to firms located in close proximity to one another.

Finally, in the hands of industry-friendly regulators, an adjustment process can become a means to water down regulation by granting adjustments that are undeserved or weakly supported while maintaining the illusion that a protective regulatory regime remains in place.²⁴³

B. *The Administrative Process*

This section surveys the five statutes under review to determine what procedures agencies use to make back-end adjustments. The following section then assesses how well these procedures guard against the potential problems we have identified.

Agencies use both adjudication and rulemaking to adopt back-end adjustments. Adjudication occurs when an agency determines the outcome of a request for a back-end adjustment under a statutory provision or regulation that makes an adjustment available if the applicant meets certain criteria.²⁴⁴ Rulemaking is necessary when there is no pre-existing statutory or regulatory provision that authorizes a back-end adjustment. In this circumstance, a back-end adjustment requires an agency to amend an existing regulation to permit the applicant to engage in some form of adjusted compliance.

For both adjudication and rulemaking, agencies use three approaches. For most adjudications and rulemakings, agencies provide public notice (usually through publication in the Federal Register) and

242. *Id.*; see Daniel A. Farber, *Taking Slippage Seriously: Noncompliance and Creative Compliance in Environmental Law*, 23 HARV. ENVTL. L. REV. 297, 299 (1999) (arguing the broad exception process created under the Endangered Species Act “threatens to eclipse the rest of the statute”); Rena I. Steinzor, *Reinventing Environmental Regulation: The Dangerous Journey From Command to Self-Control*, 22 HARV. ENVTL. L. REV. 103, 138 (1998) (arguing that EPA’s administration of Project XL has become a “regulatory free-for-all”).

243. SHAPIRO & GLICKSMAN, *supra* note 2, at 173.

244. See 5 U.S.C. §§ 551(6)–(7) (2000) (defining adjudication under the APA).

allow the public to file comments on a proposed adjustment. In a few instances, there may be a legislative-type hearing and there are three situations in which agencies use formal, trial-like procedures.

1. Adjudication

Many of the back-end adjustments involve adjudication. We found numerous examples of adjudications under the CWA, RCRA, the CAA, and the ESA.

CWA. The CWA does not prescribe procedures for the issuance of most of the back-end adjustments it authorizes. It is generally silent on the procedures that EPA (or authorized permitting states) must use when considering whether to issue hardship-based,²⁴⁵ harm-based,²⁴⁶ technology-improvement,²⁴⁷ fairness-based,²⁴⁸ policy conflict-based,²⁴⁹ and open-ended²⁵⁰ adjustments.²⁵¹

Although the CWA does not specify any hearing procedures, EPA's regulations fill this gap. These procedural regulations apply generally to the disposition of applications for permits or permit renewals by point sources, and it is during this process that an applicant can apply for a back-end adjustment.²⁵² The regulations provide that "[d]ecisions on [National Pollutant Discharge Elimination System] variance requests ordinarily will be made during the permit issuance process. Variances and other changes in permit conditions ordinarily will be decided through the same notice-and-comment and hearing procedures as the basic per-

245. 33 U.S.C. § 1311(c), (i).

246. *Id.* § 1311(g). The statute does specify that modifications of secondary treatment requirements for publicly owned treatment works shall take the form of permit provisions issued by EPA with the concurrence of the state. *Id.* § 1311(h). Under EPA regulations, states may have to certify compliance with the CWA in the course of considering variance requests under this provision. 40 C.F.R. § 124.54 (2003).

247. 33 U.S.C. §§ 1311(k), 1317(e).

248. *Id.* § 1311(n).

249. *Id.* § 1323(a) (authorizing Presidential exemptions "in the paramount interest of the United States"); *see also* 42 U.S.C. § 7412(i)(4) (authorizing a similar exemption under the CAA for federal facilities from national emission standards for hazardous air pollutants on national security grounds); *id.* § 7418(b) (authorizing CAA exemption for federal facilities "in the paramount interest of the United States"); *id.* § 7671c(f) (authorizing Presidential exemptions under the CAA from prohibitions on the production and use of ozone-depleting substances on national security grounds; congressional notification required).

250. 33 U.S.C. § 1322(c)(2).

251. In one case, the statute mandates that EPA "hold a public hearing" before modifying a water quality-related effluent limitation. *Id.* § 1312(b)(1)-(2)(A). As indicated above, however, EPA has never implemented this provision. *See supra* note 224 and accompanying text.

252. The regulations specify time limits for the filing of requests for FDF variances, hardship-based variances, and harm-based variances under the CWA. 40 C.F.R. § 122.21(m)-(n) (2003).

mit.”²⁵³ The burden of proof for these adjustments is on the applicant seeking the adjustment.²⁵⁴ The basic permit hearing procedures, which also apply to the issuance of permits for treatment, storage, and disposal facilities under RCRA,²⁵⁵ require that EPA (or a state authorized by EPA to issue CWA or RCRA permits) provide public notice when the agency has tentatively denied a permit, prepared a draft permit, or scheduled a hearing.²⁵⁶ Public notice of the preparation of a draft permit or of a decision to deny a permit requires at least thirty days for public comment.²⁵⁷

The agency must “notify the applicant and each person who has submitted written comments or requested notice of the final permit decision.”²⁵⁸ The final decision must include a response to significant comments on the draft permit raised during the comment period or during a hearing.²⁵⁹ Final decisions must be based on the administrative record, which includes the record for the draft permit, all comments received during the comment period, the response to comments, and the final permit.²⁶⁰ Within thirty days after the final permit decision, “any person who filed comments on [the] draft permit . . . may petition the Environmental Appeals Board to review any condition of the permit decision.”²⁶¹

One CWA adjustment may require a formal hearing. Decisions on whether to issue a more lenient effluent limitation under the CWA for a point source engaging in a thermal discharge must be made by EPA or the state “after opportunity for public hearing.”²⁶² One court has concluded that this language triggers formal adjudication under the APA for

253. *Id.* § 124.51(b).

254. *See, e.g., id.* § 125.32(b) (placing the burden on the person requesting FDF variances).

255. *Id.* § 124.1(a).

256. *Id.* § 124.10(a)(1). The contents of the notice are described at section 124.10(d)(1), including a brief description of the comment procedures and the time and place of any hearing to be held. The regulations also require that the applicant for a RCRA permit “hold at least one meeting with the public in order to solicit questions from the community and inform the community of proposed hazardous waste management activities.” *Id.* § 124.31(b). The applicant must provide at least 30 days prior notice of the meeting. *Id.* § 124.31(d). In addition, EPA or the state must notify the public that RCRA permit applications have been submitted and are available for review. *Id.* § 124.32(b)(1).

257. *Id.* § 124.10(b)(1). For RCRA permits, the regulations require a minimum of 45 days notice. *Id.*

258. *Id.* § 124.15(a). The regulations specify time frames for issuance of decisions on adjustment requests when EPA is the permitting authority. *Id.* § 124.63.

259. *Id.* § 124.17(a)(2).

260. *Id.* § 124.18(a)–(b). The administrative record must also include the tape or transcript of any hearing and of any written materials submitted at a hearing.

261. 40 C.F.R. § 124.19(a). A person who participated in the public hearing is also qualified to bring a lawsuit.

262. 33 U.S.C. § 1326(a) (2000).

the imposition of thermal discharge limitations.²⁶³ This decision has been criticized by commentators,²⁶⁴ and subsequent court decisions cast doubt on whether formal adjudication is required under a statute merely on the basis of a reference to an "opportunity for public hearing."²⁶⁵ EPA's regulations do not require formal adjudication for permit decisions concerning thermal dischargers.²⁶⁶

RCRA. Like the CWA, RCRA provides little guidance as to the procedures that should be used in considering requests for back-end adjustments. The statute is silent on the procedures EPA must use in determining whether to allow land disposal of hazardous wastes when an entity asserts that the prohibition on disposal is not necessary to protect health and the environment.²⁶⁷ Nor does the statute speak to what procedures are necessary when EPA provides exemptions from groundwater monitoring requirements or requirements relating to the burning of hazardous waste as fuel.²⁶⁸ It does not indicate what procedures the President must follow when he determines that "the paramount interests of the United States" support exemption of federal facilities from solid or hazardous waste management requirements.²⁶⁹ RCRA does allow hardship-based extensions of the deadlines for compliance with land disposal prohibitions to be issued "after notice and opportunity for comment and after consultation with appropriate State agencies in all affected States."²⁷⁰ Likewise, EPA or an authorized state agency may modify the prohibition on the receipt, storage, or treatment of hazardous waste at surface impoundments "after notice and opportunity for comment."²⁷¹

EPA's regulations describe notice and comment procedures for many of the RCRA back-end adjustments, just as they do for many of the adjustments available under the CWA.²⁷² For example, "[a]ny person who

263. In *Seacoast Anti-Pollution League v. Costle*, 572 F.2d 872 (1st Cir. 1978), the court held that formal adjudication was required in permit proceedings conducted under § 1326(a) even though the statute does not require that the determination be made "on the record." *Id.* at 876-78. See also *United States Steel Corp. v. Train*, 556 F.2d 822, 833-34 (7th Cir. 1977).

264. E.g., ALFRED C. AMAN, JR. & WILLIAM T. MAYTON, *ADMINISTRATIVE LAW* § 8.2.1, at 202-04 (2d ed. 2001); KENNETH CULP DAVIS & RICHARD J. PIERCE, JR., *ADMINISTRATIVE LAW TREATISE* § 8.2, at 382-83 (3d ed. 1994).

265. See, e.g., *Chem. Waste Mgmt., Inc. v. EPA*, 873 F.2d 1477, 1480-81 (D.C. Cir. 1989) (formal adjudication not required for issuance of corrective orders under RCRA).

266. See 40 C.F.R. § 124.66.

267. 42 U.S.C. § 6924(d)(1), (e)(1), (g)(5).

268. *Id.* § 6924(p), (q).

269. *Id.* § 6961(a).

270. *Id.* § 6924(h)(3).

271. *Id.* § 6925(j)(4).

272. As indicated above, if any back-end adjustment is issued in the course of a RCRA permit proceeding for treatment, storage, or disposal facilities, the procedures are similar to those that apply to CWA permits. See *supra* note 255 and accompanying text.

generates, treats, stores, or disposes of hazardous waste may submit an application . . . for an extension to the effective date of any applicable” RCRA restriction.²⁷³ EPA may grant an extension “after notice and opportunity for comment, and after consultation with appropriate State agencies in all affected States.”²⁷⁴ EPA must provide public notice of its intent to approve or deny a petition and provide an opportunity for public comment.²⁷⁵ Final decisions must be published in the Federal Register.²⁷⁶ Entities subject to RCRA’s land disposal restrictions also may submit a petition seeking exemptions from those restrictions on the ground “that there will be no migration of hazardous constituents from the disposal unit.”²⁷⁷ Again, EPA must provide notice of its “intent to approve or deny a petition and provide an opportunity for public comment” and must publish the final decision in the Federal Register.²⁷⁸ The regulations also authorize a generator or treater of hazardous waste to file a petition for a variance from the treatment standards for hazardous wastes subject to land disposal restrictions.²⁷⁹ The procedures are the same as those that apply to petitions for exemptions from the land disposal restrictions.²⁸⁰

CAA. The CAA does not specifically dictate procedures for the issuance of some back-end adjustments, such as hardship-based adjustments to primary nonferrous smelters²⁸¹ and waivers from the oxygenated fuels requirements for carbon monoxide nonattainment areas.²⁸² EPA regulations require notice and opportunity for public hearing for at least some of these adjustments.²⁸³ For some adjustments, such as the technology-improvement deadline extensions for new sources using innovative technological systems of emission reduction, the CAA requires that EPA make its determinations “after notice and opportunity for public hear-

273. 40 C.F.R. § 268.5(a) (2003).

274. *Id.* § 268.5(e).

275. *Id.*

276. *Id.*

277. *Id.* § 268.6(a).

278. *Id.* § 268.6(j).

279. *Id.* § 268.44(a).

280. *Id.* § 268.44(e) (requiring public notice and opportunity for public comment).

281. But the statute does require that EPA conduct a hearing if it determines that the state has not issued the order in accordance with the requirements of the CAA. 42 U.S.C. § 7419(a)(1)(B) (2000).

282. *Id.* § 7545(m)(3). That provision authorizes any person to petition EPA for an extension of the deadline for compliance with these requirements based on the inadequacy of supplies of oxygenated gasoline, but it does not specify the procedures to be used in responding to such petitions. *Id.* § 7545(m)(3)(C).

283. *E.g.*, 40 C.F.R. § 57.201(d)(4) (primary nonferrous smelter orders).

ing," but the CAA says nothing else about the form or content of those proceedings.²⁸⁴

Other adjustments are subject to the procedures that govern the issuance of permits. For example, hardship-based adjustments from the limitations on nitrogen oxides emissions promulgated under the acid deposition control program are issued by "permitting authorit[ies]."²⁸⁵ Under the CAA, permitting authorities must notify EPA and other affected states of permit applications and proposed permits.²⁸⁶ In addition, EPA will not approve a state permit program under the CAA unless, among other things, it contains "[a]dequate, streamlined, and reasonable procedures" for public notice, including an opportunity for public comment and a hearing.²⁸⁷ A state program also must provide an opportunity for judicial review in state court "by the applicant, any person who participated in the public comment process, and any other person who could obtain judicial review . . . under applicable law."²⁸⁸

The procedures for CAA permits are similar to those for CWA and RCRA permits. EPA regulations require that the permitting authority give public notice of actions such as initial denial of a permit application, preparation of a draft permit, and scheduling of a hearing.²⁸⁹ The permitting authority must allow at least thirty days for public comment.²⁹⁰ During the comment period on a draft permit, any interested person may submit written comments and request a hearing.²⁹¹ The permitting au-

284. 42 U.S.C. § 7411(j)(1). For other adjustments under the CAA that require notice and opportunity for either public hearings or comment, see *id.* § 7410(f)(1) (petitions for temporary emergency suspensions of state implementation plan provisions); *id.* § 7521(b)(4) (waivers from standards for emissions of oxides of nitrogen from light-duty motor vehicles); *id.* § 7671(c)(1)-(3), (d)(6), (e)(1), (g)(1) (various policy conflict-based exemptions from prohibitions on the production and use of ozone-depleting substances).

285. *Id.* § 7651f(d); see also *id.* § 7651g(a) ("The provisions [of the acid deposition control program] shall be implemented . . . by permits issued to units . . . in accordance with the provisions of [the title V permit program].") EPA regulations allow those seeking alternative emission limitations under this program to "petition the permitting authority," although the procedures applicable to such petitions are not spelled out. 40 C.F.R. § 76.10(a)(1). Technology-improvement alternative emission limitations for sources emitting hazardous air pollutants are also issued by permit. 42 U.S.C. § 7412(i)(5)(A), (D); 40 C.F.R. §§ 71.21-71.27. Permits also control technology-improvement reassignments of sulfur dioxide reduction requirements under the acid deposition control program and technology-improvement requests for extensions of the deadline for meeting those requirements. 42 U.S.C. § 7651c(b), (c)(1), (d)(1). EPA regulations provide for the issuance of technology-improvement compliance extensions from national emission standards for hazardous air pollutants in the course of the Title V CAA permit process. 40 C.F.R. §§ 63.72; 63.77(a), (g).

286. 42 U.S.C. § 7661d(a).

287. *Id.* § 7661a(b)(6).

288. *Id.*

289. 40 C.F.R. § 71.11(d)(1)(i).

290. *Id.* § 71.11(d)(2)(i).

291. *Id.* § 71.11(e). The permitting authority must respond to comments when it issues a final decision. *Id.* § 71.11(j)(1).

thority may hold a public hearing whenever it finds a significant degree of public interest in a draft permit or whenever a hearing might clarify one or more issues involved in the permit decision.²⁹² Any person may submit oral or written statements and data concerning the draft permit.²⁹³ The permitting authority must notify each person who has submitted written comments or requested notification of the final permit decision, and the notification must make reference to the procedures for appeal of a final permit decision.²⁹⁴

ESA. The ESA provides for informal notice-and-comment procedures for most of the back-end adjustments it authorizes. The Interior Department must publish notice in the Federal Register of each application for an exemption or permit concerning the statute's taking prohibition.²⁹⁵ The notice must invite interested persons to make written submissions relating to the application.²⁹⁶ The Department must make information it receives as part of an application available to the public at every stage of the proceeding.²⁹⁷ These procedures apply to technology-improvement permits and incidental take permits and to hardship-based and subsistence exemptions from the taking requirement.²⁹⁸ Interior Department regulations²⁹⁹ require only that the agency publish notice in the Federal Register of each application for a permit to take endangered wildlife for scientific purposes or to enhance propagation or survival³⁰⁰ or for an incidental take permit.³⁰¹ The notice must invite written sub-

292. *Id.* § 71.11(f)(1)–(2).

293. *Id.* § 71.11(f)(5). A tape recording or written transcript of the hearing must be made available to the public. *Id.* § 71.11(f)(6).

294. *Id.* § 71.11(i). The regulations governing acid rain permits are governed by procedures similar to those applicable to the CAA permit procedures described above. *See, e.g., id.* § 72.62(d) (requiring opportunity for public comment and opportunity to request a public hearing on draft permit); *id.* § 72.65 (requiring public notice of opportunities for public comment); *id.* § 72.66(a) (granting right of any person to submit written comments on draft permit); *id.* § 72.67 (requiring opportunity for public hearing); *id.* § 72.68 (obligating consideration of and response to comments).

295. 16 U.S.C. § 1539(c) (2000).

296. *Id.*

297. *Id.*

298. The statute makes these procedures applicable to “an exemption or permit which is made under this section.” *Id.* The relevant permit and exemption provisions are at *id.* § 1539(a)(1)(A)–(B), (b), (e). The statute is silent on the procedures that apply to exemptions from the no jeopardy prohibition issued by the Secretary of Defense on national security grounds. *Id.* § 1536(j).

299. 50 C.F.R. § 17.22.

300. *Id.* § 17.22(a)(1).

301. *Id.* § 17.22(a)(2).

missions by interested parties.³⁰² The same procedures apply to permits to take based on the prevention of undue economic hardship.³⁰³

One back-end ESA adjustment, however, requires a formal hearing. Federal agencies, states, or permit applicants may seek exemptions from the ESA's no jeopardy provision from the Endangered Species Committee. When the Interior Secretary receives an application for an exemption, he or she must notify the governor of each affected state and publish notice of receipt of the application in the Federal Register.³⁰⁴ If the Secretary determines that the concerned federal agency and the exemption applicant have met certain consultation and assessment requirements, the Secretary, in consultation with the members of the Committee, must hold a hearing on the exemption application in accordance with the APA's requirements for formal adjudication.³⁰⁵ All meetings and records resulting from exemption proceedings are open to the public.³⁰⁶ The Committee must grant an exemption if it determines "on the record" that the statutory criteria are met.³⁰⁷ That phrase is also evocative of formal procedures.³⁰⁸

Interior Department regulations provide for the use of formal adjudication in the development of a report to the Endangered Species Committee.³⁰⁹ An administrative law judge presides over the required hearing.³¹⁰ The regulations require that notice of hearings and prehearing conferences be published in the Federal Register.³¹¹ The parties to the proceedings include the exemption applicant, the federal agency responsible for the agency action in question, and any intervenors.³¹² The administrative law judge must grant leave to intervene if an intervenor's participation would contribute to a "fair determination of the issues," taking into account whether the intervenor represents a point of view not already adequately represented.³¹³

302. *Id.* § 17.22.

303. *Id.* § 17.23. They also apply to applications for permits to take threatened wildlife. *Id.* § 17.32(b)(1)(ii).

304. 16 U.S.C. § 1536(g)(2)(B) (2000); 50 C.F.R. § 451.02(h).

305. 16 U.S.C. § 1536(g)(4), (6).

306. *Id.* § 1536(g)(8); 50 C.F.R. § 425.05(f). These procedures do not appear to apply to exemptions from the no jeopardy prohibition issued by the President to prevent the recurrence of national disasters. 16 U.S.C. § 1536(p).

307. *Id.* § 1536(h)(1)(A).

308. The APA's procedures for formal adjudication apply to cases of adjudication "required by statute to be determined on the record after opportunity for an agency hearing." 5 U.S.C. § 554(a).

309. 50 C.F.R. § 425.05(a)(1).

310. *Id.* § 425.05(a)(2).

311. *Id.* § 425.05(c).

312. *Id.* § 452.06(a).

313. *Id.* § 452.06(b)(2).

The regulations also specify the procedures that govern the Committee's deliberations, although the applicable procedures are less formal and elaborate than those that apply to the Secretary's determinations. If the Committee finds that written submissions are necessary to enable the Committee to make its final determinations, it must publish in the Federal Register a notice inviting written submissions from interested persons.³¹⁴ The Committee must convene a public hearing if oral presentations are necessary to enable the Committee to make its final determinations.³¹⁵ The Committee must publish a notice of the hearing in the Federal Register.³¹⁶ The hearing is open to the public and is "conducted in an informal manner."³¹⁷ All information relevant to the Committee's decision is admissible.³¹⁸

2. Rulemaking

Agencies rely on rulemaking to a lesser extent in making back-end adjustments. Nevertheless, rulemaking procedures are used in RCRA, the CAA, the ESA, and the OSH Act.

RCRA. In some instances, the government rules on requests for back-end adjustments such as petitions for delisting regulated chemicals or endangered species by conducting informal rulemaking proceedings. EPA must provide notice and opportunity for comment before granting or denying a petition to delist a hazardous substance under RCRA if it considers factors that could cause a waste to be a hazardous waste "other than those for which the waste was listed."³¹⁹ EPA's regulations authorize any person to file a "petition for a regulatory amendment" to exclude from RCRA regulation a waste generated at a particular facility.³²⁰ EPA must publish notice of a tentative decision to grant or deny such a petition in the Federal Register "in the form of an advanced notice of proposed rulemaking, a proposed rule, or a tentative determination to deny the petition."³²¹ Upon the written request of any interested person, EPA, in its discretion, may "hold an informal public hearing to consider oral

314. *Id.* § 453.04(a).

315. *Id.* § 453.04(b)(1).

316. *Id.* § 453.04(b)(3).

317. *Id.* § 453.04(b)(4).

318. *Id.*

319. 42 U.S.C. § 6921(f)(1) (2000). The CAA is silent on the procedures that apply to petitions to delist hazardous air pollutants. *See id.* § 7412(b)(3).

320. 40 C.F.R. § 260.22(a).

321. *Id.* § 260.20(c).

comments on the tentative decision."³²² EPA must publish its final decision in the Federal Register in the form of a regulatory amendment or a denial of the petition.³²³

One other form of back-end adjustment under RCRA is also subject to informal rulemaking procedures. When Congress ordered EPA to make adjustments under RCRA for small quantity generators of hazardous waste, it mandated that EPA do so by promulgating "standards,"³²⁴ which presumably means regulations. EPA has in fact issued the special provisions for small quantity generators by way of informal rulemaking.³²⁵

CAA. Informal rulemaking also may provide the forum for certain CAA back-end adjustments.³²⁶ The states are free to provide waivers or variances from their implementation plans. These adjustments may take the form of revisions to the plan.³²⁷ The statute requires that a revision to the implementation plan be adopted by the state "after reasonable notice and public hearing."³²⁸ According to Professor Rodgers:

The Clean Air Act extends no right to an adjudicatory hearing, and most states treat preparation of the plans as inviting legislative-type decisions where affected parties may appear and present statements but not participate further through cross-examination and submission of questions, unless a particular need is shown.³²⁹

EPA regulations require that a state conduct at least one public hearing before adopting and submitting a plan revision to EPA.³³⁰ The state must supply at least thirty days' notice before holding a hearing.³³¹

ESA. Petitions to list or delist species under the ESA also are subject to informal rulemaking procedures. The Interior Department, for exam-

322. *Id.* § 260.20(d). EPA also may decide on its own motion to hold a hearing. *Id.*

323. *Id.* § 260.20(e).

324. 42 U.S.C. § 6921(d).

325. *See, e.g.*, Hazardous Waste Management System, 51 Fed. Reg. 10,174 (Mar. 26, 1986) (to be codified at 40 C.F.R. pts. 260-63, 270-71).

326. The CAA is silent on the procedures that apply to certain adjustments of SIPs, including temporary emergency suspensions issued by state governors under 42 U.S.C. § 7410(g) to prevent plant closings. The governor may issue a temporary emergency suspension on the basis of a national or regional energy emergency "after notice and opportunity for public hearing." *Id.* § 7410(f)(1).

327. *See* 40 C.F.R. § 51.104(d) (stating that, in order for a variance to be considered for approval as a revision to a state plan, "the State must submit it in accordance with the" procedures applicable to plan submissions).

328. 42 U.S.C. § 7410(l).

329. 1 RODGERS, *supra* note 66, § 3.9B, at 255-56.

330. 40 C.F.R. § 51.102(a).

331. *Id.* § 51.102(d).

ple, must publish in the Federal Register its findings as to whether a listing or delisting petition “presents substantial scientific evidence or commercial information indicating that the requested action may be warranted.”³³² If the agency makes an affirmative finding, it must subsequently decide whether the requested action is warranted.³³³ If not, the agency must publish that finding in the Federal Register.³³⁴ If so, the Department must issue a proposed regulation.³³⁵ The ESA specifies that the APA procedures for informal rulemaking apply to any regulation promulgated in response to a petition.³³⁶ The statute requires that the Interior Department provide actual notice of proposed listing or delisting regulations to the state agency in each state in which the species is believed to occur and invite each such agency to submit comments.³³⁷ The agency may give notice to professional scientific organizations³³⁸ and must publish a summary of the proposal in a newspaper of general circulation in each part of the United States in which the species is believed to occur.³³⁹ The ESA requires the Interior Department to hold a public hearing if any person requests one within forty-five days after public notification.³⁴⁰

OSH Act. The OSH Act authorizes employers to apply to the Secretary of Labor “for a rule or order” for a harm-based variance from an occupational safety and health standard.³⁴¹ A request for a rule would presumably be subject to rulemaking proceedings, while OSHA would consider a request for an order through adjudication.³⁴² The statute dictates that the Secretary issue the rule or order “if he determines on the record, after opportunity for an inspection where appropriate and a hear-

332. 50 C.F.R. § 424.14(b)(1). *See also* 16 U.S.C. § 1533(b)(3)(A).

333. 16 U.S.C. § 1533(b)(3)(A); 50 C.F.R. § 424.14(b)(1).

334. 16 U.S.C. § 1533(b)(3)(B)(i); 50 C.F.R. § 424.14(b)(3)(i).

335. 16 U.S.C. § 1533(b)(3)(B)(ii); 50 C.F.R. § 424.14(b)(3)(ii).

336. 16 U.S.C. § 1533(b)(4). Those procedures are spelled out in the Interior Department’s regulations. 50 C.F.R. § 424.16(c).

337. 16 U.S.C. § 1533(b)(5)(A)(ii).

338. *Id.* § 1533(b)(5)(C).

339. *Id.* § 1533(b)(5)(D).

340. *Id.* § 1533(b)(5)(E); 50 C.F.R. § 424.16(c)(3).

341. 29 U.S.C. § 655(d).

342. The OSH Act also authorizes employers to apply for “a temporary order granting” a hardship-based variance. *Id.* § 655(b)(6)(A). The statute requires notice to employees and an opportunity for a hearing. *Id.* Because the statute does not require that the decision be based “on the record,” informal adjudication would seem to be the proper procedure for consideration of these hardship-based variances. Nevertheless, OSHA has promulgated regulations that apply the same formal procedures to § 655(b)(6)(A) and § 655(d) variances. *See* 29 C.F.R. § 1905.1(a)(1). These same procedures also apply to back-end adjustments based on national security grounds under 29 U.S.C. § 665. 29 C.F.R. § 1905.1(a)(2) (2003).

ing, that the proponent of the variance has demonstrated by a preponderance of the evidence that the conditions” the proponent proposes will provide places of employment that are as safe as those that would result from compliance with the standard from which the variance is sought.³⁴³ The APA requires that agencies use formal rulemaking procedures “[w]hen rules are required by statute to be made on the record after opportunity for an agency hearing.”³⁴⁴ The OSH Act references to a decision “on the record” and to an opportunity for a hearing trigger this APA requirement.³⁴⁵ Similarly, the OSH Act authorizes the Secretary, “on the record, after notice and opportunity for a hearing,” to issue “rules and regulations” that provide reasonable variations and exemptions from any provisions of the statute if he finds that such action is necessary “to avoid serious impairment of the national defense.”³⁴⁶

OSHA has issued regulations establishing formal procedures for both the harm-based and national security adjustments.³⁴⁷ Once OSHA determines that an application for a variance has been filed with the agency, it must publish a notice of the filing of the application in the Federal Register.³⁴⁸ The notice must include an invitation to interested persons to submit written information concerning the application.³⁴⁹ Any affected employer, employee, or state agency having jurisdiction over places of employment covered in the application for the variance or exemption may request a hearing on the application.³⁵⁰ The agency must convene a hearing whenever one is requested.³⁵¹ A hearing officer vested with powers similar to those specified for administrative law judges under the APA³⁵² presides over the hearing.³⁵³ OSHA’s regulations detail the availability of discovery³⁵⁴ and the manner in which hearings will be conducted.³⁵⁵ A party is entitled to present its case by oral or

343. 29 U.S.C. § 655(d).

344. 5 U.S.C. § 553(c).

345. Similarly, if the employer applied for an order containing a variance, formal adjudication would seem to be required. *See* 5 U.S.C. § 554(a) (“This section applies . . . in every case of adjudication required by statute to be determined on the record after opportunity for an agency hearing.”).

346. 29 U.S.C. § 665.

347. By contrast, informal rulemaking governs the issuance of occupational safety and health standards, although OSHA’s procedures go beyond the minimum requirements of the APA. 29 C.F.R. § 1911.15(a)(1), (b).

348. 29 C.F.R. § 1905.14(b)(1).

349. *Id.* § 1905.14(b)(2)(iii).

350. *Id.* § 1905.15(a).

351. *Id.* § 1905.20(a).

352. 5 U.S.C. § 556(c).

353. 29 C.F.R. § 1905.22(a).

354. *Id.* § 1905.25.

355. *Id.* § 1905.26.

documentary evidence, to submit rebuttal evidence, and to conduct cross-examination.³⁵⁶ The hearing examiner's final decision must "be based upon a consideration of the whole record."³⁵⁷ If a party files exceptions to the hearing examiner's decisions, the Assistant Secretary of Labor reviews that decision.³⁵⁸ OSHA must publish every final action granting a variance or exemption in the Federal Register.³⁵⁹ Only a decision by the Assistant Secretary is regarded as a final agency action for purposes of judicial review.³⁶⁰

C. Evaluation

Most of the back-end adjustments in the five statutes we have surveyed are subject to notice and comment adjudicatory procedures, particularly adjustments issued in the course of decisions on permit applications. Informal rulemaking involving notice and comment procedures governs several adjustments, such as those involving requests for the delisting of chemicals regulated under RCRA or the CAA or of endangered or threatened species under the ESA. In some instances, an agency may also hold a legislative-type hearing. Formal adjudication is confined to requests to the Endangered Species Committee for exemptions from the ESA's no jeopardy provision and perhaps to requests for more lenient restrictions on thermal discharges under the CWA. Formal rulemaking governs only requests for certain variances and exemptions from occupational safety and health standards under the OSH Act. This section analyzes the adequacy of existing procedures to promote public accountability concerning back-end adjustments.

1. Notice and Comment Procedures

The type of notice and comment procedure that is employed for most of the back-end adjustments is the same type of procedure that is widely employed in the administrative process for making decisions about regulatory policy. Nevertheless, there are reasons why it may not be ade-

356. *Id.* § 1905.26(c)(1). Cross-examination is limited to whatever "is required for a full and true disclosure of the facts." *Id.*

357. *Id.* § 1905.27(b).

358. *Id.* § 1905.29.

359. *Id.* § 1905.6.

360. *Id.* § 1905.51.

quate in the context of back-end adjustments in light of the resources available to the public to monitor the back-end process.

a. Advantages

As Roger Cramton pointed out long ago, the potential benefits of administrative procedure—fairness and accuracy—need to be balanced against the “efficient disposition of [agency] business.”³⁶¹ In light of the tradeoffs involved, a notice and comment process is generally considered adequate for promoting the accountability of public policy decisions for three reasons.

First, the procedures are efficient. Since the agency is not involved in holding a hearing, it can make its decision relying entirely on the written input that it receives.

Second, notice and comment procedures are adequate to vet the issues involved because public policy decisions are normally based on scientific and policy information.³⁶² The extra time and expense of using trial-type procedures, such as testimony and cross-examination, is considered to be unnecessary since these decisions do not involve specific facts that are within the knowledge of specific individuals.³⁶³ Thus, the right to file written comments usually offers an adequate opportunity to contest scientific or policy information on which an agency may rely.³⁶⁴

The criteria that Congress has established for making back-end adjustments appear to involve mostly scientific and policy information. Harm-based adjustments authorize regulatory relief if a polluter does not create the same risk to people and the environment that a rule was designed to address.³⁶⁵ Technology-improvement adjustments authorize relief if it is likely to produce innovative abatement technologies.³⁶⁶ Fairness-based adjustments involve claims that a firm cannot meet the abatement goal for reasons (other than cost, in the case of the CWA) not anticipated by the agency at the time a rule was adopted,³⁶⁷ and policy-

361. Roger C. Cramton, *A Comment on Trial-Type Hearings in Nuclear Power Plant Siting*, 58 VA. L. REV. 585, 592 (1972).

362. See generally RICHARD J. PIERCE ET AL., *ADMINISTRATIVE LAW AND PROCESS* § 6.3, at 225–79 (3d ed. 1999).

363. *Id.*

364. *Id.*

365. See *supra* Part III.B.1.

366. See *supra* Part III.B.3.

367. See *supra* Part III.B.4.

based adjustments involve balancing environmental and other policy goals.³⁶⁸

One form of adjustment—the hardship-based adjustment—may appear to be more on the borderline between scientific and policy facts and information that is uniquely known to a particular person. This adjustment is available if a firm can demonstrate that compliance with a regulation involves a degree of economic hardship not anticipated by the agency when it adopted a rule.³⁶⁹ Nevertheless, it appears that informal procedures are adequate to resolve whatever adjudicatory facts might be in issue.³⁷⁰ First, the evidence regarding a firm's economic hardship will be documentary, and it seems unlikely that testimony and cross-examination will be necessary to assess its accuracy.³⁷¹ Second, the firm's claim of unique hardship can be judged by looking at information such as industry profitability data, which is publicly available.³⁷² Moreover, to qualify for this adjustment, a firm typically must still demonstrate its ability to protect people and the environment from some degree of risk, even if it is granted regulatory relief.³⁷³ An agency assessing whether a firm has made this showing will be analyzing scientific and policy information.

Third, an agency is subject to judicial review concerning its adjustment decisions,³⁷⁴ and a court would expect the agency to justify its decision in light of the comments that it has received.³⁷⁵ This gives interested parties the opportunity to contest an outcome that they oppose and requires the agency to rebut any relevant, substantial objections that were brought to its attention.³⁷⁶ Thus, the public is assured that an agency has

368. See *supra* Part III.B.5.

369. See *supra* Part III.B.2.

370. See *PIERCE*, *supra* note 362, at 267 (“not all controversies concerning adjudicative facts require use of a judicial-type hearing”).

371. See *Chem. Waste Mgmt., Inc. v. EPA*, 873 F.2d 1477, 1482–83 (D.C. Cir. 1989) (upholding EPA's determination that a judicial-type hearing was unnecessary regarding a corrective order in part because there would be little need to establish witness credibility through demeanor evidence or cross-examination).

372. *Id.* (upholding EPA's determination that a judicial-type hearing was unnecessary regarding a corrective order in part because evidentiary disputes could be resolved on the basis of the written evidence in the record).

373. See *supra* notes 130–34 and accompanying text.

374. If the mandate that an agency uses to approve an adjustment does not provide for judicial review, the agency could be sued under the APA, which authorizes judicial review at the behest of persons “adversely affected or aggrieved by agency action.” 5 U.S.C. § 702 (2000).

375. See, e.g., *Rodway v. USDA*, 514 F.2d 809, 817 (D.C. Cir. 1975) (agency's justification must “explain how the agency resolved any significant problems raised by the comments”).

376. See, e.g., *Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 651 (D.C. Cir. 1973) (“agency [must] set forth with clarity the grounds for its rejection of opposing views”).

to take seriously the comments that are filed. The agency's failure to respond adequately to significant comments will lead a court to remand a decision back to an agency to address such comments.

b. Disadvantages

Despite the advantages of a notice and comment process, it may not be sufficient to ensure the proper use of back-end adjustments. A back-end adjustment process is subject to three potential problems that may not be solved by relying on notice and comment procedures.³⁷⁷

First, Congress has failed to require any procedures for some back-end adjustments, leaving it to the agency concerned to determine what type of procedures to use.³⁷⁸ As a general matter, Congress should mandate the use of administrative procedures when it authorizes the use of adjudication to implement back-end adjustments. Otherwise, an agency is free to have no such procedures or to provide less procedural protection than is adequate for the decision-making process. EPA has voluntarily plugged this gap,³⁷⁹ but without a legislative mandate, it would not have to do so.

Second, without effective public monitoring, an agency may grant so many exceptions that a rule becomes incoherent,³⁸⁰ or unacceptable levels of harm to the public health or the environment may be threatened if regulators fail to consider the cumulative impact of the adjustments that they are making.³⁸¹ If environmental and public interest groups are aware that this is happening, they can point it out to the agency when they file written comments in an adjustment proceeding. This pattern of behavior, however, may be difficult to spot due to the piecemeal nature of the regulatory adjustment process. The groups could monitor the ad-

377. In addition to the accountability problems addressed below, the back-end adjustment process may be subject to abuse if adjustments are issued by state agencies in the absence of sufficient oversight. Many of the back-end adjustments discussed in this Article may be issued only by EPA, although the statutes sometimes require concurrence by the state. *See, e.g.*, 33 U.S.C. § 1311(c) (EPA may issue hardship-based adjustments under the CWA); *id.* § 1311(g) (EPA, with the concurrence of the state, may issue harm-based adjustments under the CWA); *id.* § 1311(n) (EPA, with the concurrence of the state, may issue FDF variances). In other situations, the states may issue adjustments, but only with EPA's approval. Under the CAA, for example, variances adopted as SIP revisions are subject to EPA approval. 42 U.S.C. § 7410(l). Although the subject of state issuance of back-end adjustments is largely beyond the scope of this Article, we favor vesting the states with the authority to issue back-end adjustments of the sort discussed in this Article only if a state's decisions are subject to EPA oversight.

378. *See, e.g.*, *supra* notes 245–50 and accompanying text.

379. *See supra* note 252–80 and accompanying text.

380. *See supra* note 241 and accompanying text.

381. *See supra* note 242 and accompanying text.

justment process on an ongoing basis to obtain information about the number and impact of adjustments, but this type of monitoring may require resources that the groups lack. Moreover, due to the esoteric nature of regulatory adjustments, it seems unlikely that the press will serve this watch-dog role.

Third, although notice and comment procedures are considered to be adequate to promote public accountability in rulemaking, back-end adjustments may pose a different situation than the promulgation of a rule. Agencies may make a bad policy decision in both an initial rulemaking and a back-end adjustment, but it may be easier for interested parties to influence the rulemaking process than the adjustment process. Agencies typically have only a few ongoing rulemakings at any one time, whereas EPA or other agencies might have many more adjustment proceedings. In light of the limited resources of environmental and other public interest groups, they may not be able to participate in dozens of back-end proceedings that make regulatory adjustments.³⁸² Moreover, even if they do participate, these groups may lack the scientific and technical resources to participate effectively in adjustment proceedings to the extent that such decisions turn on this information.³⁸³

Other papers presented in this symposium suggest that the lack of participation may be a significant problem. David Cozad, an EPA attorney who participated in this symposium, noted that, in his experience, there is almost no involvement of public interest groups or others in adjustment proceedings.³⁸⁴ Professor Rechtschaffen likewise observed that there was limited or no citizen or interest group participation in enforcement proceedings.³⁸⁵ If public interest groups or citizens are unable to participate in enforcement proceedings, this would suggest that they would be unable to participate in adjustment proceedings.

Nevertheless, there are also reasons to think that notice and comment procedures will provide accountability. First, if the policy process is re-oriented as we recommend, there will be a less cumbersome and elaborate process at the front-end, which should free up resources for public interest groups to participate at the back-end. Second, even without this shift, state and local environmental groups could focus their efforts on

382. SHAPIRO & GLICKSMAN, *supra* note 2, at 173.

383. *Id.*

384. David Cozad, *Responsive Remarks to Articles Presented at the Kansas Law Review Symposium on Reforming Environmental Law: Can Regulation Be More Adaptive?*, 52 U. KAN. L. REV. 1401 (2004).

385. Rechtschaffen, *supra* note 6, at 32.

the adjustment process.³⁸⁶ The lack of such participation at the moment may be attributable to the lack of transparency of this process, which we address in the next section.

2. Hearing Procedures

There is some reason to be concerned that notice and comment procedures, as currently structured, may not promote the necessary accountability for back-end adjustments. The question, then, is whether there are additional procedures that Congress should require that would address these potential problems. Congress could authorize interested persons to request a public hearing and require agencies to hold such a hearing upon some statutory trigger. As our survey indicated, there are legislative-type hearings for some of the back-end adjustments, and a formal hearing is required in three instances.

A legislative-type hearing process would give interested parties an additional opportunity to influence the agency, but environmental and public interest groups can bring the same information to the attention of an agency in written comments as they can through testimony, assuming that the groups have the resources to participate effectively. Indeed, written advocacy probably would be more effective than speaking orally for a short period of time. Thus, a legislative-type hearing does not address the limitations of a notice and comment process in promoting the rationality of the back-end process. A legislative-type hearing process would allow citizens who normally would not file comments to appear before the agency and make their views known, but such presentations are less likely to present policy information that is influential to an agency or a reviewing court, although it may indicate something about the extent and intensity of public support or opposition.

A more formal hearing process is not the answer either. First, as noted earlier, procedures such as calling witnesses and cross-examination do not generally illuminate scientific and policy issues.³⁸⁷ Second, even

386. See, e.g., John S. Applegate, *Beyond the Usual Suspects: The Use of Citizen Advisory Boards in Environmental Decision-making*, 73 IND. L.J. 903 (1998) (addressing the procedures for involving the public in environmental decision-making); Zygmunt B. Plater, *A Modern Political Tribalism in Natural Resources Management*, 11 PUB. LAND L. REV. 1 (1990) (describing the way small groups of people living in cohesive affiliation have a narrowed community interest in natural resource management). See also PHILIP SHABECOFF, *A FIERCE GREEN FIRE: THE AMERICAN ENVIRONMENTAL MOVEMENT* 233-34 (1993) ("Where the national groups are prone to settle their differences with polluters through compromise, the grass-roots groups usually will settle for nothing less than complete victory because the health of their children as well as their own and the habitability of their own homes are on the line.").

387. See *supra* notes 362-64 and accompanying text.

if additional hearing rights gave interested members of the public a greater opportunity to build a record against back-end adjustments, participation in such a hearing is resource-intensive, which is likely to limit the number of environmental or public interest groups that could afford to participate, at least if the hearing procedures are frequently invoked. Finally, expanded hearing rights might be used strategically by opponents of adjustments, such as competitors of the company requesting the adjustment. Thus, this solution has the potential to slow down the approval process in cases where approval is in the public interest.

D. Greater Transparency

A better way to improve public accountability is to increase the transparency of the back-end approval process. The idea is to give the public access to information that allows interested persons to evaluate the extent to which the potential problems identified earlier might exist. More specifically, we propose that agencies be required to make all relevant information about the adjustment process available on the agency's web site and that agencies be required to report annually to the public on their use of back-end adjustments, including information that bears on the problems that we have identified.

1. Electronic Reading Rooms

Under existing notice and comment procedures, agencies are required to notify the public, usually in the Federal Register, that they have received a request for a back-end adjustment,³⁸⁸ but there is no further requirement that the other documents that comprise the decision-making process be readily available to the public. If someone wants to look at the comments that have been filed or the agency's justification for granting or denying an application for an adjustment, he or she would have to visit the document room the agency maintains either in its headquarters in Washington or in an appropriate regional office to request the documents, or would have to locate and communicate with the appropriate agency employee to request that the documents be sent to him or her.

These hurdles would disappear if all of the written information relevant to adjustment proceedings were posted by an agency on its web site. All regulatory agencies now have web sites and the government has es-

388. See *supra* Part IV.B.1-2.

tablished one location—www.firstgov.gov—that provides central access to all agency databases. An electronic reading room for adjustment documents should be established within this framework.

Congress has already required agencies to make some documents available on the Internet, but this requirement probably would not force agencies to establish this type of electronic reading room. The Freedom of Information Act (FOIA) obligates an agency to make available to the public other records in its files,³⁸⁹ except to the extent that the records fall within one of the exceptions from disclosure that Congress established.³⁹⁰ The FOIA, therefore, would require an agency to divulge most, if not all, adjustment documents if requested by a member of the public.³⁹¹ The FOIA further obligates an agency to make available to the public in a reading room “final opinions, including concurring and dissenting opinions, as well as orders, made in the adjudication of cases”³⁹² and any other records that “the agency determines have become or are likely to become the subject of subsequent requests.”³⁹³ The Electronic Freedom of Information Act Amendments of 1996 require federal agencies to establish electronic reading rooms—i.e., web sites—for information that the FOIA requires to be made available in reading rooms.³⁹⁴ Nevertheless, agencies are likely to escape from any legal obligation to establish a web site for adjustment documents on the grounds that they are not the subject of widespread requests. It is unlikely that environmental or other public interest groups will be in a position to file numerous requests for such information, and agencies, therefore, are not likely to be bombarded with requests for such documents.

Since agencies can avoid establishing electronic reading rooms for adjustment documents, Congress should require them to establish such rooms. Such legislation should also include some of the recommendations of the American Bar Association about how to make administrative proceedings more useful to members of the public via agency web sites.³⁹⁵ Concerning notice and comment rulemaking, the ABA has rec-

389. 5 U.S.C. § 552(a)(3)(A) (2000).

390. *Id.* § 552(b).

391. *See* PIERCE, *supra* note 362, at § 8.3.3 (describing the exemptions from disclosure). Some documents might qualify for protection as trade secrets and confidential commercial information. *See* 5 U.S.C. § 552(b)(4).

392. 5 U.S.C. § 552(a)(2)(A).

393. *Id.* § 552(a)(2)(D).

394. Pub. L. No. 104-231, 110 Stat. 3048 (1996) (codified at 5 U.S.C. § 552).

395. AMERICAN BAR ASSOCIATION, SECTION OF ADMINISTRATIVE LAW AND REGULATORY PRACTICE, GOVERNMENT AND PUBLIC SECTOR LAWYERS DIVISION, RECOMMENDATION (2001) (outlining recommendations on Federal Agency Web Pages), available at <http://www.abanet.org/adminlaw/federal02.pdf>.

ommended that agencies provide “a means for interested persons to enroll for electronic notification of further developments in a matter,” post “notices of proposed rulemaking on the agency’s own site, and provid[e] opportunities for electronic comment there,” and post “required analyses, public comments, and other constituent elements of a rulemaking docket on the agency’s web site as far as practicable in readily searchable form.”³⁹⁶ The same requirements would be useful to the public in terms of monitoring the notice and comment procedures used in informal adjudications by EPA that determine adjustment requests.

An electronic reading room for adjustment applications should lower the cost of participation for interested persons and groups. A party can sign up for electronic notice that an application has been made and can monitor whether anyone has filed comments in favor of or in opposition to an application. If groups have an easier way to monitor the process, they may be able to determine more easily which applications pose a threat to people and the environment and file comments in those proceedings. If this occurs, an agency will be more accountable for its actions.

An electronic reading room will also permit interested persons to monitor whether an agency appears to be engaged in granting an excessive number of applications or whether the agency has taken into account the cumulative impact of the applications that it has granted. Since, however, these functions would require someone to engage in constant monitoring, or at least visit the reading room to see whether these problems might exist, we also recommend that Congress require agencies to publish an annual report, which would make monitoring of these potential problems easier.

2. Annual Reports

Congress should also require an agency to publish an annual report on its web site concerning its adjustment activities. This report should include statistics indicating the number of adjustment requests that the agency received and the disposition of those requests, both in total and in relationship to the statutory provisions that authorize adjustments. The report should also organize this information by geographical area so that readers can determine the number and type of adjustments made under different statutory provisions in the same location. Finally, Congress

396. *Id.*

should require the agency to report on how the adjustment process has served the statutory goals of the statutes under which adjustments have been granted.

This report should make it easier to identify when an agency may have granted an excessive number of adjustments or failed to consider the cumulative impact of its adjustments. If an agency has granted a large number of adjustments, either in total or concerning a particular statutory provision, it would alert interested persons to go to the agency's electronic reading room and review the available information. The goal would be to determine whether the adjustments appear to be justified and whether the agency has granted so many adjustments that the integrity of a regulation is threatened. Similarly, the report should make it easier to identify whether an agency has taken into account the cumulative impact of the adjustments it has granted. If the agency has granted significant adjustments in one geographical area, readers could go to the electronic reading room to see if the agency has taken the cumulative impact of its adjustments into account when granting the adjustments.

Armed with the previous information, interested parties could take several steps to attempt to rein in inappropriate use of the adjustment process. Environmental and other interest groups could use the information to prioritize their intervention in ongoing adjustment proceedings. They could focus their efforts on those agencies and those adjustment proceedings where it appeared that an agency was acting inappropriately. Thus, despite limited resources, the groups would have a better chance at heading off misuse or mistaken use of the adjustment process. The same groups could call the attention of their political allies in Congress to any misuse of the adjustment process, which may result in political pressure being brought to bear on the agency. Similarly, they could call the attention of the media to the misuse of the adjustment process by an agency, which may result in adverse publicity for the agency.

Annual reports are not likely to prevent all misuse of the adjustment process. Environmental groups still may be hamstrung by limited resources despite prioritizing their intervention in adjustment proceedings. The media may be uninterested in stories about a complicated, inside-the-beltway story about the administrative process. The political allies of environmental and other public interest groups may lack the clout to rein in misguided or captured agencies. No administrative process, however, will prevent all misfeasance or malfeasance by the government. Moreover, the greater degree of transparency that we propose will expose agencies to significant public monitoring of their actions, and the amount of oversight and concern will increase if agencies adopt the back-end

adjustment process as an important method of adjusting regulatory policy.

E. Conclusion

Most back-end adjustments occur using notice and comment procedures. This approach is efficient, yet it gives the public an opportunity to present evidence or make arguments to which the courts expect agencies to respond. A legislative-type hearing or a formal hearing would reduce the efficiency of the adjustment process and is unnecessary to promote rational decision-making.

Notice and comment procedures are effective to hold an agency accountable for back-end adjustments, provided there is public participation. The potential weakness of a back-end process is that environmental and other public interest groups, or individual citizens, may not participate because of the number of such adjustments and a lack of resources to participate effectively both on the front end and the back end of the process. To enhance the ability of interested persons to oversee agencies' use of back-end adjustments to make regulatory policy, we therefore propose that the back-end process be made more transparent by the use of electronic reading rooms and annual reports.

Greater transparency is not likely to produce public involvement in every adjustment decision or even in most adjustment decisions. Universal participation, however, is not necessary to have the back-end process work effectively. First, many of the adjustment applications are likely to be routine and non-controversial. Second, although the notice and comment process is a check on agency decision-making, this does not mean that agencies will make unreasonable decisions without public participation. Third, we anticipate that local environmental groups will focus their advocacy on the adjustment process as it becomes a more central element in regulatory policy. Finally, these and national advocates can monitor the back-end situation using the electronic reading room and annual reports and prioritize their participation based on agency performance and the significance of the adjustment applications.

IV. THE POTENTIAL OF THE BACK-END

For years, critics of environmental and other forms of regulation have criticized prevailing methods of regulation as unnecessary, inefficient, unduly burdensome, or otherwise irrational. Although the critics' calls for reform have not convinced Congress to repeal existing regula-

tory schemes, Congress has imposed on agencies such as EPA a series of analytical obligations with which agencies must comply before they may adopt new regulations. Additional such requirements have been adopted by executive order. Supporters of these techniques assert that they will improve the rationality of regulation. Cost-benefit analysis, for example, is supposed to assure that agencies do not adopt counterproductive regulations whose economic costs exceed the environmental, health, or safety benefits that result from regulation.

We have argued in our book on risk regulation, and others have argued elsewhere, that the effort to improve the rationality of regulation at the front end of the regulatory process by heaping on agencies a plethora of analytical obligations such as the obligation to undertake a cost-benefit analysis is misguided. As the number of analytical requirements has mushroomed, it has become more difficult and time-consuming for agencies to run the gauntlet of applicable analytical procedures. The strains on agencies have been exacerbated by a scarcity of agency resources. Front-end analysis therefore creates the risk of less agency regulation as agencies devote more and more time to each regulatory project. Moreover, the new analytical requirements do not necessarily improve regulatory policy. The problem of bounded rationality makes it difficult, if not impossible, for agencies to provide accurate and useful information in performing front-end analytical tasks, such as cost-benefit analysis. If such techniques are incapable of calculating the optimal level of regulation, then agencies forced to rely on them may wind up delaying issuance of regulations while they conduct their analyses with no assurance of improved quality of eventual regulatory output.

We took the position in our book on risk regulation that a better approach to improving regulatory policy is for agencies to focus increased attention on the back end of the regulatory process instead of seeking to perfect regulation through ad nauseum front-end analysis. Back-end adjustments can provide a safety net to protect against the risk of erroneous or incomplete decisions when agencies initially adopt regulations. The availability of this safety net may make agencies more comfortable in issuing regulations that have not been analyzed to death. Agencies are likely to have more accurate information at the back end of the process than at the front end because back-end analysis typically takes place when agencies already have had some experience in administering the applicable regulatory scheme. Back-end adjustments, therefore, should be less susceptible to the problem of bounded rationality than front-end analysis.

In this Article, we surveyed five federal statutes designed to protect the public health, safety, and the environment to determine whether these

statutes provide agencies with the opportunity to make back-end adjustments. Our survey reveals that these statutes authorize EPA, OSHA, and the Department of the Interior to issue back-end adjustments on at least five different grounds, each of which has the potential to improve regulatory policy in the context of individualized regulatory applications. Although we have, for the most part, endorsed these back-end techniques, we also have suggested some limitations, such as eliminating the availability of hardship-based adjustments from technology-forcing regulations and the adoption of a requirement that the recipients of some kinds of back-end adjustments demonstrate that the relief they seek will not subject the public health and safety or the environment to unacceptable levels of risk.

We recognize that the resort to back-end adjustments creates the risk of regulatory failure if agencies issue adjustments that, either individually or cumulatively, allow levels of pollution or other harm-creating activity that are inconsistent with statutory goals. But front-end analytical requirements also create a risk of regulatory failure. An agency determined to avoid meaningful regulation, for example, can skew its cost-benefit analysis by ignoring or deemphasizing the unquantifiable benefits that a regulation is designed to produce. The greater the costs appear to be in relation to the resulting regulatory benefits, the less protective the regulation issued by the agency in reliance on that cost-benefit analysis is likely to be. Consequently, the risk of capture or other regulatory failure is not, by itself, a convincing reason to prefer front-end analysis to back-end adjustments. That risk may be troublesome, however, if oversight of the agency is less effective at the back end than at the front end of the regulatory process. There is a legitimate concern that public interest groups will find it more difficult to monitor agency decisions at the back end than at the front end because those decisions will be more numerous, more dispersed, and less visible. To counter that danger, we recommend that all back-end adjustments continue to be subject to a notice and comment process. In addition, we support the adoption of requirements that are designed to improve the transparency of the decision-making process, including the establishment of electronic reading rooms and the submission of annual reports on back-end activity. These steps will allow agencies to rely on back-end adjustments to improve regulatory policy while minimizing the risk of abuse through the issuance of excessive or unwarranted back-end adjustments.

APPENDIX I: SURVEY OF BACK-END ADJUSTMENTS

	Hardship-Based	Harm-Based	Technology-Improvement	Fairness-Based	Policy Conflict-Based	Open-Ended
CWA	33 U.S.C. §§ 1311(c), (i)	33 U.S.C. §§ 1311(g), (h); 1326(a)	33 U.S.C. §§ 1311(k); 1317(e)	33 U.S.C. § 1311(n)	33 U.S.C. §§ 1312(b)(2)(A) (cost-benefit imbalance); 1323(a) (national security)	33 U.S.C. § 1322(c)(2)
RCRA	42 U.S.C. § 6924(h)	42 U.S.C. §§ 6921(f); 6924(d)(1), (e)(1), (g)(5), (p), (q); 6925(j)(4)		42 U.S.C. § 6924(h)(3)	42 U.S.C. §§ 6921(d) (small business); 6961(a) (national security)	
CAA	State adjustments to SIPs; 42 U.S.C. §§ 7410(g); 7419(b)(3); 7545(m)(3)(C); 7651f(d)(2)	42 U.S.C. §§ 7412(b)(3); 7545(m)(3)(A), (B)	42 U.S.C. §§ 7411(j); 7412(i)(5); 7521(b)(3); 7651c(b)(5), (d)(1)		42 U.S.C. §§ 7410(f) (energy policy); 7412(i)(4) (national security); 7418(b) (national security); 7671c(f) (national security); 7671c(d), (e)(1), (g) (essential applications, med. devices, exports, etc.)	
OSH Act	29 U.S.C. § 655(b)(6)	29 U.S.C. § 655(d)	29 U.S.C. § 655(b)(6)(C)		29 U.S.C. § 665 (national security)	
ESA	16 U.S.C. § 1539(b)	16 U.S.C. §§ 1533(b)(3)(A), (D)(i)	16 U.S.C. § 1539(a)(1)(A)		16 U.S.C. §§ 1536(g)-(h) (cost-benefit imbalance, pub. interest), (j) (national security), (p) (disaster relief); 1539(a) (actions causing incidental takes), (e) (subsistence takes)	