The Risks and the Advantages of Agency Discretion: Evidence from EPA's Project XL

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I.
INTRODUCTION

Academic criticism of the administrative state has increased exponentially over the past several years, particularly with regard to environmental regulation. Many commentators insist that the command and control approach to enforcement is no longer useful Further, they contend that this approach likely will discourage innovation and create a disincentive to continuous environmental improvement. They also assert that many prevailing environmental regulations are economically inefficient, vio-

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Fundamentally, command and control is an approach to regulation in which the regulator tries to control some aspect of the regulated community's conduct by specifying behavioral or technological requirements, i.e., "inputs." For example, command and control regulations tell firms what pollution control technologies to use and how much pollution they can emit. "Inputs" can include raw materials, labor or capital that a company applies to the production of a good or a service. In the case of air pollution, inputs might include provisions requiring or encouraging coal-fired power plants to use low sulfur coal, a particular type of scrubber or taller smokestacks.

late free market principles, and are undemocratic.[1] Most commentators urge some form of "regulatory reinvention." Agreement ends, however, when it comes to determining which reforms to adopt.

Since 1995, the U.S. Environmental Protection Agency ("EPA" or the "Agency") has tried to implement some reforms of its own, including Project XL (which stands for "Excellence in Leadership"). Through Project XL, EPA is exploring more flexible approaches to encourage collaborative performance-oriented compliance with federal and state standards. Much of what EPA has attempted is based on "adaptive management" theory. However, this theory is very much at odds with the enforcement philosophy upon which EPA was founded.[2]

In implementing Project XL, EPA has faced intellectual, legal and cultural obstacles of many kinds. This paper analyzes a number of ways these obstacles have impeded Agency efforts to adopt a more flexible approach to regulation that relies more on "market mechanics."

Part I reviews the strategic considerations behind the founding of EPA, as well as its institutional structure and operation. EPA's history and structure make it a problematic setting in which to apply adaptive management techniques. EPA was designed to carry out a quasi-military mission, featuring vertical review of all decisions taken at lower levels. In addition, a more flexible and decentralized approach to decision making would require the Agency to alter its mission. Since the Agency's focus remains result-oriented and its management style almost entirely reactive, a clash between philosophies of adaptive management and command and control is inevitable.

Part II reviews the doctrine of administrative discretion, noting that the dominant perspective in administrative law has been "to fear discretion, reluctantly accept its presence, and attempt to

1. The examples are legion. They include: Philip J. Harter, *Regulatory Negotiation: A Cure for Malaise*, 71 GEO L. J. 1, 1992; AL GORE, REPORT OF THE NATIONAL PERFORMANCE REVIEW, FROM RED TAPE TO RESULTS, CREATING A GOVERNMENT THAT WORKS BETTER & COSTS LESS (US GPO, 1993); Eric W. Orts, *Reflexive Environmental Law*, 89 NW. U. L. REV, 1227 (1995); Peter F. Drucker, *Really Reinventing Government*, ATLANTIC MONTHLY MAG., Feb. 1995.

2. KAI N. LEE, COMPASS AND GYROSCOPE: INTEGRATING SCIENCE AND POLITICS FOR THE ENVIRONMENT (Island Press 1993); MALCOLM K. SPARROW, IMPOSING DUTIES: GOVERNMENT'S CHANGING APPROACH TO COMPLIANCE. (Praeger Publishers 1994).

control it."[3] According to this view, Congress chronically delegates broad authority to administrative agencies. Thus, agencies are relatively unsupervised in their exercise of regulatory discretion. Part II concludes by arguing that this view is incorrect; Congress does not habitually abdicate its lawmaking responsibilities to agencies. In fact, Congress retains more oversight of agencies like EPA than most commentators presume.[4] There is a surprising amount of discretion built into the administrative system. Unfortunately, most of it is not the kind that will encourage EPA or the private sector to pursue innovation.

Part III outlines several related attempts to move EPA toward more collaborative and "performance-based" approaches to achieving compliance under the Bush and Clinton administrations. These initiatives were actually the precursors to Project XL. Significantly, building on adaptive management principles, XL sought to incorporate the results of these experiments into EPA's existing institutional framework. Part III also describes the first group of proposed XL projects.

Part IV analyzes the political reactions to Project XL and reviews intra-agency disagreements over the appropriate exercise or discretion in specific XL projects. In addition, Part IV considers the strong reactions of the public and regulated community to this move toward more flexible and performance-based regulation are analyzed.

Part V suggests ways in which the Agency and the regulated community might work together to overcome obstacles to an increased reliance on administrative discretion, which is critical to the ultimate success of Project XL and similar reform efforts.

II.
EPA'S ORGANIZATIONAL STRUCTURE AND HISTORY

Throughout its history, EPA has failed to articulate a mission that has survived beyond a single administration. This failure explains, in large part, EPA's enormous political vulnerability and

3. CHRISTOPHER F. EDLEY, ADMINISTRATIVE LAW: RETHINKING JUDICIAL CONTROL OF BUREAUCRACY 6 (1990); Abner S. Greene, *Checks and Balances in an Era of Presidential Lawmaking*, 61 U. CHI. L. REV. 123, 125 (1994).

4. The authors acknowledge the work of Timothy A. Wilkins and Terrell E. Hunt on this point. *See* Timothy A. Wilkins and Terrell E. Hunt, *Agency Discretion and Advances in Regulatory Theory: Flexible Agency Approaches Toward the Regulated Community as a Model for the Congress-Agency Relationship*, 63 GEO. WASH. L. REV. 479 (1995).

institutionally reactive posture. Indeed, this is an unpromising context into which to introduce a new philosophy of environmental regulation. A brief review of EPA's history explains why.

Major EPA programs include air and water quality, drinking water, hazardous waste, Superfund, pesticides, radiation, toxic substances, enforcement and compliance assurance, pollution prevention, oil spills, and leakage of underground storage tanks. In addition, EPA provides assistance in the design and construction of wastewater treatment, drinking water, and other water infrastructure projects. The Agency is responsible for conducting research; establishing environmental standards; monitoring levels of pollution; enforcing compliance; managing audits and investigations; and, providing technical assistance and financial support to states and tribes to which the Agency has delegated authority for program implementation. Finally, the Agency participates in a narrow range of international activities.

EPA's regulatory operations are, with the exception of Superfund, centered around issuing permits. The Agency can allow facilities to discharge specific levels of certain pollutants within prescribed limits. Permits sometimes (but not always) mandate specific technologies that must be used to achieve specified limits. Permit holders are required to file regular reports indicating their emission levels. These reports are screened for compliance with permit conditions and periodic site visits are made to confirm the accuracy of self-reporting. Violations are referred to an enforcement division, which files suit against entities that exceed their permit conditions.

EPA's approach to duties other than enforcement tends to be passive. For example, in issuing permits, the applicant must prepare and file the necessary studies and forms. EPA processes these forms, comments on the material provided, returns the application for further study, when necessary, and requests appropriate revisions. EPA personnel understand that it is not their job to work with an applicant to ensure a mutually acceptable set of permit conditions.

Practically all environmental statutes provide for delegation of certain powers to the states or tribes so that they can issue permits, screen for violations and enforce compliance. For this to happen, a state must apply to EPA for permission to operate a program and EPA must certify the adequacy of the state's proposed efforts. If the program is delegated, EPA remains involved

in an oversight capacity. If a state presents no program for authorization, EPA remains the permitter of last resort.

The Agency's oversight function is intended to ensure that the permitting activities it has delegated to the states are being carried out as EPA expects. In some cases, EPA has rescinded state programs and resumed enforcement and permitting functions itself.[5]

EPA's regional structure follows the ten region model created during the Nixon administration. This was designed to encourage devolution of responsibility, although a great deal of decision making is not decentralized. The broad division of labor between EPA headquarters and regions is as follows: headquarters writes regulations, standards and policy, funds research and development, and oversees the regions to assure national consistency in the enforcement of statutory mandates; regions implement enforcement, authorization, and oversight programs.

Congress did not create EPA, nor did it ever give the Agency a clear mandate or efficient long-term priorities.[6] Further, Congress provided EPA no means to allocate resources among different environmental statutes in a balanced way. For this reason alone, it is difficult for the Agency to set priorities. Finally, in reaction to Reagan-era environmental policies, Congress compounded the Agency's problems by including in key pieces of environmental legislation deadlines for the promulgation of regulations, detailed instructions, and "hammer" clauses threatening penalties for missed deadlines.[7]

The scope of scientific information that EPA, industry and the public must integrate from medical, economic, engineering, legal, and other sources before reaching decisions is enormous. At the same time, laws and regulations governing how certain decisions

5. Details of the EPA's revocation of the Connecticut Resource, Conservation and Recovery Act (RCRA) program are set out in the Federal Register. 55 Fed. Reg. 51707 (December 17, 1990). The details of an attempted RCRA state program revocation in North Carolina are set out at 52 Fed. Reg. 43903 (November 17, 1987).

6. The EPA was created through an executive order issued by President Richard Nixon, Reorganization Plan No. 3 of 1970. The order consolidated nine programs from five different federal agencies and departments into the new EPA. Unlike most federal agencies and departments, the EPA was not created by legislative action. Thus, the Agency lacks the benefit of a congressional charter defining its mission and priorities.

7. This is particularly significant, given EPA's shrinking personnel base. The process EPA must administer under its authorizing statutes is extremely complex. For example, 10,000 pages of regulations had to be drafted, revised after public comment and promulgated to implement the 1990 Clean Air Act Amendments alone.

should be made are often internally inconsistent with regard to the kinds of information that should be taken into account.

There is also a significant and growing discrepancy between the responsibilities assigned to EPA via statute and the resources Congress provides the Agency to carry them out. Congress has charged EPA with the implementation of a complex set of functions. To carry these out, the Agency must administer a collection of laws specifying how pollution is to be managed within specific "media" or programs. The Agency's task is to design, implement and enforce an enormous number of regulations. This requires substantial institutional capacity. Yet, EPA's institutional capacity is actually shrinking. EPA had 7000 employees and a budget of $3.3 billion in 1971; at the time, twelve percent ($512 million) of this money was spent on program administration. The remainder was used to fund state and local grants. By 1980, the Agency's employee base had increased to 12,000 and its budget to $5 billion, $1.5 billion was spent on program administration. The 1989 budget totaled only $4.8 billion, with $1.6 billion set aside for program administration—a drop in real terms of fifteen percent over the decade. Congress has never restored the resources it cut.[8]

EPA's organizational structure has created an imposing barrier to technological innovation. Despite recent attempts at cross-media re-organization, EPA remains oriented towards a traditional medium-by-medium or law-by-law enforcement strategy. Enforcement consumes a majority of the Agency's resources. Indeed, EPA's budget is largely determined by Congress' assessment of the number of enforcement actions the Agency took (and penalty dollars it collected) in each prior fiscal year.

EPA views enforcement as an outcome, not as a means to an end. This has been the Agency's position since 1970, when its first administrator, William Ruckleshaus, adopted this view. In order to ensure Congressional and public support, Ruckleshaus believed it was vital to establish the new Agency's credibility by demonstrating its commitment to achieving environmental goals. Thus, his strategy was to "hit the ground running" by giving enforcement top priority. Alternate organizational strategies were considered B strategies that concentrated on research and development, or on regional assessment and planning. However,

8. PHILIP B. HEYMAN, THE POLITICS OF PUBLIC MANAGEMENT (1987); WALTER A. ROSENBAUM, 1995. ENVIRONMENTAL POLITICS AND POLICY (3d ed. 1995). The budget figures are transcribed from data on file with the U.S. EPA.

these would have been considerably more difficult to implement, and would not have produced measurable results nearly as quickly. Making enforcement a priority required only that Ruckleshaus order a corps of attorneys to file suit, under statutes already in place, against polluters known to be out of compliance.[9]

His strategy may well have been correct for its time. It established EPA in the public eye and encouraged the private sector to internalize costs associated with environmental compliance. However, over the decades, Congress and EPA have come to rely on enforcement as an end in itself. They stress enforcement numbers ("beans," in Agency parlance) when measuring the Agency's success.

This emphasis on enforcement helps to explain EPA's difficulty in recognizing that the initial phase of America's environmental policy has ended.[10] Indeed, EPA's continued reliance on traditional enforcement strategies is inappropriate given environmental problems the Agency and the country now face. In the words of Malcolm K. Sparrow, "[l]ining up industrial polluters for prosecution has limited tangible effect on the quality of the environment. There are too many violators, too many laws to be enforced and not enough resources to get the job done."[11]

New challenges must be approached in a different way. Ideally, it would be best if the Agency could find a way to encourage all private actors to adopt more environmentally sustainable development behaviors *voluntarily*. Since the costs of each additional unit of environmental improvement are going up steadily, it also makes sense to carefully tailor pollution control and prevention strategies to each situation. Those strategies that take account of the unique problems facing each regulated actor are likely to be most effective. Collaboration, not confrontation, and a flexible approach to regulation that emphasizes environmental performance rather than penalties and expensive litigation, should be the goal.

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9. Walter A. Rosenbaum, Environmental Politics and Policy (3d ed. 1971); Marc K. Landy et al., The Environmental Protection Agency: Asking the Wrong Questions (1990).

10. George S. Hawkins, Esq., *The Eagle Agenda: An Agenda for the Future of Environmental Protection.* (Unpublished essay on file with the authors).

11. MALCOLM K. SPARROW, IMPOSING DUTIES: GOVERNMENT'S CHANGING APPROACH TO COMPLIANCE 96 (1994).

III.
THE DOCTRINE OF ADMINISTRATIVE DISCRETION

In every administrative system, regulators have some degree of freedom. Although it may seem counterintuitive, such discretion offers insulation from reversal or revision by outside reviewers or administrators higher up the ladder because an agency has a right to be wrong.[12] Nevertheless, for a variety of reasons, the dominant perspective in administrative law has been "to fear discretion, reluctantly accept its presence, and attempt to control it."[13]

Commentators generally agree that untrammeled agency discretion can lead to unfairness and inefficiency.[14] Nevertheless, Congress chronically delegates broad authority to administrative agencies.[15] The alternative would be for Congress to micromanage each agency's activities by writing all statute-implementing regulations itself. Congress does not have the resources to do this for one agency, let alone the entire administrative bureaucracy.

Further, Congress' delegation of discretion to the federal bureaucracy has deep historical roots. When the "spoils system" was replaced by Civil Service in the 1880s, the goal was eminently practical: hire qualified people to administer the program and let them do their best under general guidelines without attempting to spell out the minutiae for them. Giving professional

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12. Maurice Rosenberg, *Judicial Discretion of the Trial Court, Viewed from Above*, 21 SYRACUSE L. REV. 635, 637 (1967).

13. EDLEY, *supra* note 3, at 217.

14. A frequently cited example occurred in 1993, when the state of Washington submitted its Clean Air Act (CAA) operating permit program to the EPA for approval. Washington's application proposed exempting a number of sources as "insignificant emitters" of air pollution. The EPA had approved a number of state programs exempting "insignificant activities and emissions levels" from certain requirements. This was done to reduce the regulatory burden on the state and the emitter. Although Washington's proposed plan was analogous to other state proposals already approved, the EPA refused to approve the state plan in 1994, making full approval conditional on the deletion of these exemptions. In 1995, a lawsuit was filed against the EPA for abuse of discretion. In 1996, three full years after Washington's initial submission, the EPA's refusal to approve the program was found by the U.S. Court of Appeals for the Ninth Circuit to be an abuse of discretion. See Western States Petroleum Association et al. v. Environmental Protection Agency, 87 F.3d 280; 1996 U.S. App. LEXIS 14612.

15. An impressive scholarly treatment in support of this view is KENNETH C. DAVIS & RICHARD J. PIERCE, JR., ADMINISTRATIVE LAW TREATISE § 2.6, at 74; *see also* Abner S. Greene, *Checks and Balances in an Era of Presidential Lawmaking*, 61 U. CHI. L. REV. 123 (1994). For popular "broadsides" along similar lines, *see* JONATHAN RAUCH, DEMOSCLEROSIS: THE SILENT KILLER OF AMERICAN GOVERNMENT (1995).

civil servants "large discretion as to the management of the fires and ovens," wrote Woodrow Wilson soon after the creation of the Civil Service, would liberate government from the procedural quagmire of the courts. No procedural protection from the bureaucrats was needed; neutral professionals were themselves the protection from the unabashed partisan politics that had flourished under the spoils system. The vision of neutral experts, liberated from procedure, remained the bureaucratic ideal.[16]

Critics argue that this concept of bureaucracy never worked as intended. As one put it, "The age-old tendency of institutions to build up layers of process, like sediment on a harbor bottom, soon also bogged down the budding regulatory state . . . The temptation to compromise by promising one more layer of review and oversight is apparently irresistible."[17] In the words of another critic, "Reliance on the expectation that principles of rational administration will be self-limiting is risky business. It requires stepped-up legislative vigilance to keep administrative power within bounds."[18]

According to this view, excessive and unchecked agency discretion in the formulation of policy undermines the legitimacy of the administrative state. The remedy, presumably, is to encourage the involvement of interest groups in agency decision making and to protect that involvement through judicial intervention. This would cause agencies to assume the role of "honest brokers" among competing interest groups that bargain over policy. Judges then ensure that all relevant parties are represented by requiring agencies to take these parties' views into account in reasoned decision making. Through the threat of legal challenge, parties derive indirect bargaining power.

Advocates for tight constraints on discretion analyze the existing administrative system operations as follows:

- Congress delegates a subset of its legislative powers to administrative agencies by statute.
- Congress outlines regulatory directives via statute.
- The statutes instruct the agencies to promulgate rules and regulations implementing Congress' intentions.

16. PHILIP K. HOWARD, THE DEATH OF COMMON SENSE (1994).

17. *Id.* at 77.

18. E.P. Krauss, *Unchecked Powers: The Supreme Court and Administrative Law*, 75 MARQ. L. REV. 797, 812 (1992).

- Agencies translate these statutory outlines into specific rules controlling private behavior.

Thus, regulations are, in effect, administratively-derived statutes completing the initial legislative design. Critics pinpoint this last step as the weak link in controlling discretion within the administrative system. In allowing agencies to formulate specific rules, Congress gives away "great swaths of lawmaking power" to the executive and other agencies.[19] Agencies are therefore relatively uncontrolled in their exercise of regulatory discretion; these same critics believe that judicial review no longer provides adequate oversight of agency decision making.

The authors do not agree with the view set out above that Congress habitually abdicates its lawmaking responsibilities to agencies, resulting in their untrammeled power to make administrative law. Experience and study show that Congress retains more oversight of agencies like EPA than most commentators presume.[20] However, Congress concentrates its control on limiting an agency's procedures to specific regulatory methods; at the same time, Congress often fails to protect against discretionary abuse.[21] The key to improving the regulatory process thus lies in identifying precisely what categories of agency discretion Congress should retain, and which to delegate. Close examination of the structure underlying major environmental statutes demonstrates that Congress places tight controls on the agency's choice of regulatory methods, rather than focusing on mandating environmental outcomes and allowing agencies to develop processes to efficiently achieve them.[22]

There is a surprising amount of discretion built into the existing administrative system. Unfortunately, most of it is not the kind that will encourage EPA or the private sector to pursue in-

19. EDLEY, *supra* note 3, at 6; Abner S. Greene, *Checks and Balances in an Era of Presidential Lawmaking*, 61 U. CHI. L. REV. 123, 125 (1994).

20. The authors wish to acknowledge the work of Timothy A. Wilkins and Terrell E. Hunt on this point. *See* Wilkins, *supra* note 4, at 479.

21. Part III argues that sections of the EPA's command and control system should be replaced by non-command approaches, focusing on outcomes and driven largely by economic self-interest. Statutes and regulations should be retooled to monitor and control outcomes or performance, leaving the EPA free to experiment, collaborate and implement more optimal methods of regulation.

22. "Regulatory method" refers to the specification of policy details or regulatory methods. For example, the choice between controlling air pollution through mandatory pollution control technologies and levying emissions taxes is an example of competing regulatory methods.

novation.[23] It is not discretion per se, but Congress' means of *defining and controlling* what categories of discretion an agency can utilize, that inhibits innovation and creates inefficiency.

It is a mistake to define "discretion" unidimensionally. Indeed, there are several kinds of discretion that Congress confers upon EPA.[24] Some, such as the power to set standards, should probably be used sparingly. They provide no motive to innovate, nor do they encourage corporate attempts to reduce emission levels below regulatory benchmarks. Other kinds of discretion, typically those allowing latitude in how performance is achieved, should be increased.

A. *From Theory to Practice: EPA's Use of Discretion*

The primary constraint on agency behavior is the Administrative Procedure Act (APA).[25] The APA requires that agency rulemaking must be preceded by a Notice of Proposed Rule Making in the Federal Register and by consideration of and response to public comments received. More formal, on the record, agency adjudication must be accompanied by trial-like procedures.[26] The APA further bounds agency discretion by calling for judicial review of various agency actions, including rule-making.

By specifying the procedural requirements that must accompany various types of agency action, Congress seeks to bound agency discretion. However, there is a growing consensus that the procedural burdens imposed by the APA have made rulemaking "excessively costly, rigid and cumbersome . . . impos[ing]

23. *See* 42 U.S.C. § 7470 (1988). The chronic dysfunction that exists between EPA and Congress on this issue is illustrated by The Prevention of Significant Deterioration (PSD) program (Title I, Part C) of the Clean Air Act. There, Congress explicitly detailed the mechanisms to be employed by EPA to achieve its performance goals: preserving levels of clean air wherever it exists. In fact, ratcheting up the statutory specificity of the PSD program increased the complexity and difficulty of its implementation and compliance, while sacrificing legitimate policy options and barring consideration of important case-by-case situational concerns. *See* A. STANLEY MEIBURG, PROTECT AND ENHANCE: "JURIDICAL DEMOCRACY" AND THE PREVENTION OF SIGNIFICANT DETERIORATION OF AIR QUALITY (1991).

24. Rosenberg, *supra* note 13, at 635; Ronald Dworkin, *The Model of Rules*, 35 U. CHI. L. REV. 14 (1967).

25. 5 U.S.C. §§ 551-559, 701-706 (1994).

26. *But see* § 303 of the Negotiated Rulemaking Act of 1990 (Pub.L. 101-648, Nov. 29, 1990, 104 Stat. 4969) (codified at 5 U.S.C.A. T. 5, Pt. I, Ch. 5, Subch. III (1998)) (allowing a negotiated option that is somewhat less formal).

perverse incentives that conspire to undermine sound public policy."[27]

EPA reaction to the constraints imposed by the APA was to resort to new forms of policy creating immunity from judicial review: for example, interpretive rules, policy statements and "guidances" are exempt from APA requirements.[28] EPA increasingly issues unreviewable non-legislative guidances to advance its policy agenda. Courts have generally sidestepped the Agency's challenge on this issue, refusing to mandate additional procedural requirements unless a judge perceives them to already exist in the Constitution, the APA or an enabling statute.[29]

Thus, EPA relies as much as possible on informal regulatory instruments (interpretive rules and policy guidances) to avoid the procedural constraints imposed by formal and informal rulemaking. The Agency deals with specific questions of interpretation through the release of interpretive guidance letters. It resolves more general ambiguities at the headquarters level, through the issuance of non-legislative interpretive rules. Issuance of interpretive material helps to ensure consistency in day-to-day administration by Agency staff. However, it leaves EPA open to charges that it can exercise too much administrative discretion.

Of course, agency guidance on correct legal interpretation is not legally binding; courts and members of the public are free to ignore it. In practice, however, an agency's view of the correct resolution of specific legal questions usually prevails. Few informal agency guidance interpretations are challenged in court; the ones that are almost always upheld.[30]

The fact is, EPA enforcement and regulatory personnel exercise discretion on a daily basis at all levels of responsibility. For example, EPA staff exercises almost complete discretion over its enforcement activities. All the following decisions are within the Agency's discretion: whether to initiate a hazardous waste in-

27. Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1, 9 (1997). In the late 1980s, up to 80 percent of the rules promulgated by EPA were challenged in federal court. *See* William Ruckleshaus, *Environmental Protection: A Brief History of the Environmental Movement in America and Its Implications Abroad*, 15 ENVTL. L. 455, 463 (1985).

28. *See* 5 U.S.C. § 553(b)(A), (d)(2) (1994).

29. *See* Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519 (1978).

30. *See* Chevron U.S.A. Inc. v. NRDC, 467 U.S. 837, 844-855 (1984). *See also* Michael Asimow, *Nonlegislative Rulemaking and Regulatory Reform*, 1985 DUKE L. J. 381, 385 (1985).

spection of a particular facility; whether to audit a company's monthly Clean Water Act compliance reports; against which companies to initiate enforcement actions; what laws to enforce against them; whether to do so criminally or civilly (in consultation with the U.S. Department of Justice); whether to bring an enforcement action administratively or in federal court; whether to impose a high monetary penalty or to accept a defendant's performance of an environmentally beneficial project. Additionally, EPA personnel have broad discretion to issue operating permits under the Clean Water Act, Clean Air Act, hazardous waste statutes and other statutes.[31] Finally, EPA can grant statutorily-sanctioned variances or exemptions from certain regulatory requirements, a form of discretion upon which Project XL proposals largely depend. Sometimes headquarters drafts guidance documents to advise staff on the proper exercise of these discretionary functions. When such guidance is not issued, regional staff members develop "regional guidances" to ensure consistency of action within the region and to build some protective administrative "common law" precedents.

In sum, federal agencies have developed or been granted more discretion than they admit. The constraints on the use and abuse of this discretion are imposed by the APA, Congressional oversight and judicial review. These undoubtedly limit what agencies might otherwise do; however, they also create rigidity, time delays and inefficiencies of their own. This article explores how encouraging greater agency discretion can ensure that the intent of federal legislation is achieved in the least burdensome and most creative ways, while also guarding against abuse.

IV.
THE DEVELOPMENT OF ALTERNATE REGULATORY MODELS

Traditionally, Congress carefully specifies a methodological framework in each regulatory regime it delegates to EPA. Command and control instruments are extremely attractive to bureaucrats and lawmakers alike. In one analyst's view, they "represent the shortest distance between two points: if Congress decided it wanted the price of natural gas reduced, the most direct and obvious thing to do would be to legislate a cap on its price." The analyst continues: "[h]owever . . . the wisdom of pol-

31. Denial of such permits generally means closure of the facility in question.

icy design is almost wholly independent of directness. Command and control is frequently an inappropriate approach despite its directness, apparent administrability and enforceability because it precludes or at least problematizes adaptation to divergent and changing circumstances."[32]

The criticism leveled against the inherent rigidity of command and control approaches to enforcement has resulted in pressure to try alternate regulatory techniques. One alternative involves an incentive-based option. This method emphasizes the importance of cost-effectiveness analysis to determine what regulatory strategy will produce optimum social and economic benefits. It seeks to take account of all direct and indirect social costs prevented by and/or caused by a proposed regulation.[33] It presumes that the costs and benefits caused and avoided by a given action can be measured. The new discipline of environmental economics tracks this effort to reorient regulatory thinking. It argues that command and control might be the most direct route to accomplishing a regulatory objective, but is likely to produce substantial inefficiencies that could be avoided by a case-by-case release on cost-effectiveness analyses.

Incentive theory seeks less socially costly methods to achieve the same regulatory ends. It claims to do this by "harnessing the power of markets," assuming the best way to accomplish a regulatory objective is to offer the regulated community "a direct and daily self-interest" in attaining it.[34] "Sin taxes" illustrate this idea. Proponents argue that increasing taxes on tobacco and alcohol not only generates revenue that can be used for other beneficial purposes, but increases prices in such a way as to discourage consumers from purchasing and using harmful substances. By making undesirable behavior more costly, market-based approaches presumably give members of the regulated community an economic stake in conforming to government-specified social goals. Moreover, incentives of this sort, at least

32. Michael Asimow, *Nonlegislative Rulemaking and Regulatory Reform*, 1985 DUKE L. J. at 483.

33. SUSAN ROSE-ACKERMAN, RETHINKING THE PROGRESSIVE AGENDA: THE REFORM OF THE AMERICAN REGULATORY STATE (1992). This theory has been widely criticized for its failure to account for environmental values due to the difficulty in assigning them a "non-input" monetary value.

34. Robert Stavins, and Thomas Grumbly, *The Greening of the Market: Making the Polluter Pay*, in MANDATE FOR CHANGE (Will Marshall & Martin Schram, eds., 1993).

in theory, should lead to the achievement of regulatory goals at "the least" cost to society. Wilkins and Hunt explain why:

> [I]f . . . EPA [were] to promulgate a pollution tax on the emission of particular contaminants into the air, every firm would have a direct monetary incentive to find the best and cheapest technology or other method of reducing its output of such pollutants. The more pollution a company prevents, the less tax it would pay. Under a command and control regime, a firm might be required to reduce pollution emissions by installing a filtering device at a cost of two thousand dollars . . . . [F]aced with a choice under an incentives approach between reducing one unit of pollution by installing a filtering device at a cost of two thousand dollars [or] reducing a unit by purchasing cleaner raw materials at a cost of one thousand dollars . . . a profit motivated firm will select the cheaper option.[35]

EPA has implemented a number of incentive-based regulatory measures that build on these ideas, including the "bubble" concept under the Clean Air Act and the tradable emissions permit program under the 1990 amendments to the Clean Air Act.[36] In both cases, once key clean air objectives were set, the regulated community was allowed greater flexibility in choosing the means it preferred to use to achieve these goals. In the case of the bubble concept, industry could make cross-media comparisons and choose to meet some regulations by exceeding others. In the case of tradable permits, regulated companies could "buy" the right to pollute (within strict limits) from others who had already exceeded the required standards.

These two trial programs are interesting. However, they do not represent a new compliance philosophy or standard (other than a reliance on basic market principles). Along with the voluntary and "compliance-plus" approaches described below they represent an inconsistent, experimental approach to innovation. A plethora of environmental issues remain unaddressed by either scheme: which, if any, pollutants can be "traded" given cost-benefit and health concerns? How should the public, the Agency and the private sector come to agreement on this question? Is a mar-

35. Wilkins, *supra* note 4, at 479-489.

36. *See* Clean Air Act, Amendments, Pub. L. No. 101-549 § 401, 104 Stat. 2399, 2584 (1990). The Clean Air Act's "bubble concept" treats an entire plant as a single emissions source instead of attempting to monitor each of the (possibly) hundreds of individual sources existing within the plant's boundaries. Title IV of the act established an innovative emissions trading program: each major coal-fired plant is allocated a set amount of permissible sulfur dioxide emissions that it may trade, buy or sell. The first government sponsored auction of the rights took place in March 1993.

ket (or incentive-based) scheme capable of incorporating a community's collective assessment of a clean environment into the prices that it sets? Market realities might encourage larger companies to buy the pollution rights of smaller entities, rendering them non-competitive; it is not clear that this would be a good outcome. While the stockpiling of pollution credits might create satisfaction with the status quo—in the same way that command and control already does—this could discourage technological innovations that might lead to an even cleaner environment at lower cost.

It should make sense to monitor the results of the "bubble" concept and the tradable emissions permit program. Even if they generate unintended negative consequences, it will be difficult for EPA to withdraw them; their promulgation created constituencies that now have a vested interest in their continuation.

A. *Voluntary and Compliance-Plus Approaches*

The Bush Administration pursued a non-legislative strategy to push for government-sponsored environmental improvement. It engaged corporate voluntarism, enticing companies with the lure of being named a "corporate environmental leader" by the President of the United States. Voluntary strategies encouraged business to focus on preventing pollution at its source, instead of focusing on "end of the pipe" solutions. At the same time, the Agency hoped voluntary partnerships would institutionalize cooperation and trust between government and the regulated community. Examples of this approach included the 1991 "Green Lights" program, which encouraged businesses to install energy-efficient light fixtures and bulbs, and the "33/50" program, designed to voluntarily reduce the use and release into the environment of seventeen especially toxic chemicals by fifty percent by the end of 1995.[37]

These programs produced modest gains, leading to calls for their adoption as techniques for creating more efficient and environmentally protective strategies.[38] By one account, "[a]dministrative costs in voluntary programs are certainly lower than those in mandatory programs . . . . As to social costs,

37. William J. Clinton, U.S. Actions for a Better Environment: A Sustained Commitment (U.S. Pub. Info. Off., 1992).

38. In a 1992 speech, EPA Administrator William Reilly stated that voluntary programs had produced reductions "faster and more cost effectively than under any regulatory program I administer." *See* SPARROW, *supra* note 11, at 96.

although some industries doubtless bore some expense in attaining these reductions . . . some likely even experienced savings."[39] Other observers noted, "[i]ndeed, if these volunteer efforts were to have drastically increased industry's net costs, profit-motivated companies responsible to their investors would not and could not continue to sign up."[40]

However, EPA enthusiasm for voluntary compliance worried environmentalists and certain members of Congress. "They suspected industry of cooking the books, of changing measurement systems and definitions and switching . . . [statutorily] listed chemicals to unlisted ones; all to make themselves look good without any real benefit to the environment." Others thought EPA could not set important new directions for environmental protection relying on voluntarism and targeting issues like energy-efficient light fixtures.[41]

Neither EPA nor its serious critics want the Agency to rely entirely on voluntary appeals for pollution reduction. Voluntary cooperation is not an alternative to enforcement in many situations. The ultimate goal is to push for innovations through a novel mix of tactics.

B. *Adaptive Management and Project XL*

Project XL represented a natural outgrowth of earlier efforts to experiment with incentive-based and voluntary approaches to achieving compliance. It also built on the theory of adaptive management. Proponents argue that feedback through experimentation provides opportunities to examine and inform the ways in which producer and consumer practices in the economy may be altered to create environmentally compatible industrial ecosystems.[42] Collectively, these are known as adaptive management techniques. Philosophically, adaptive management treats economic uses of nature as experiments, assuming that humankind will continue to learn over time what works and what does not. The adaptive management process presumes ongoing insti-

39. *See "Over 280 Companies Commit to Reduce, Reuse, Recycle Waste, EPA Announces,"* BUREAU OF NAT'L AFFAIRS CHEM. REGULATION DAILY, July 21, 1994 (noting multimillion dollar savings experienced by firms under WasteWise, a comparable voluntary source reduction program for solid waste).

40. Wilkins, *supra* note 4, at 479, 495.

41. SPARROW, *supra* note 11, at 96.

42. *See* Deanna J. Richards et al., *The Greening of Industrial Ecosystems: Overview and Perspective* in THE GREENING OF INDUSTRIAL ECOSYSTEMS 1-19 (Braden R. Allenby and Deanna J. Richards eds., 1994).

tutional transformation; entities should develop their philosophies and strategies in an evolutionary way through continuous adaptation and assessment. These changes should be driven by a constant flow of information gathered from purposeful experiments. Adaptive management may be thought of as a research strategy designed to generate feedback. Thus, governing institutions using adaptive management techniques should evolve towards increased efficiency in meeting environmental policy goals based on continuous learning.

This approach to natural resource policy embodies a simple imperative: policies are experiments; learn from them. In order to live, man must use the resources of the world; yet our species does not understand nature well enough to know how to live harmoniously within environmental limits. Adaptive management takes that uncertainty seriously, treating human interventions in natural systems as experimental probes. Its practitioners take special care with information. First, they are explicit about what they expect, so that they can design methods to make reliable measurements. Second, they collect and analyze information so that expectations can be compared with reality. Finally, they translate comparisons into learning: they seek to correct errors, improve their imperfect understanding, and change action and plans.

In theory, Project XL hopes to implement an adaptive management approach by jointly planning experiments and monitoring their results for possible integration into the existing regulatory system. Its proponents wanted to encourage the private sector to collaborate with EPA to plan, run, and monitor experimental efforts to achieve compliance, rethink regulation, and test new technologies.[43] Unfortunately, as discussed in Part III, these outcomes have not yet occurred to the extent XL's designers had aspired.

C. *Project XL*

EPA envisions Project XL as a national pilot program to test innovative ways of achieving better and more cost-effective public health and environmental protection. Through site-specific

43. *See* Regulatory Reinvention (XL) Pilot Projects, 60 Fed. Reg. 27282 (1995). Project XL is one of several initiatives undertaken by EPA, pursuant to the Clinton Administration's Regulatory Reinvention agenda. Project XL also solicited project proposals from entire industry sectors and from various government agencies including states, cities and towns.

agreements with project sponsors, EPA gathers data and project experience that the Agency can use to redesign existing approaches to public health and environmental protection. Under Project XL, sponsors (private facilities, industry sectors, federal facilities and communities) can implement innovative strategies that produce superior environmental performance, escaping some regulatory mandates, and promoting greater accountability.

Proposals that have become XL pilot projects are intended to be real-world tests of innovative strategies that might achieve cleaner and cheaper results than conventional regulatory approaches. Indeed, EPA proposes to grant regulatory flexibility (i.e. greater choice in *how* standards were to be met) in exchange for commitments to achieve better environmental performance than might be attained through full compliance with regulations. EPA's initial goal was the implementation of fifty pilot XL projects in four categories: specific facilities, industrial sectors, government agencies, and communities.

Criteria for individual project selection are superior environmental performance, regulatory flexibility and stakeholder involvement. Development of XL projects is divided into three phases. First, the project sponsors (usually the regulated company and any co-sponsoring organizations) propose a project to EPA, which reviews the proposal in collaboration with the appropriate state(s). EPA uses a competitive process for initial selection of such proposals. Proposals spell out: 1) the environmental benefits the project seeks to generate; 2) what regulatory flexibility the applicant is requesting; and, 3) how the applicant intends to involve those who may be affected by the proposed effort. Thus, under XL, a corporation can propose an alternate compliance strategy that would require the Agency to authorize a revision or reinterpretation of an existing regulatory requirement. The suggested compliance strategy must result in environmental performance superior to that which would have been achieved under normal circumstances; i.e., performance superior to that which would have been achieved if the applicant had merely complied with the existing regulatory scheme.

A development phase then follows during which project conditions are analyzed and negotiated. This culminates in the negotiation of a non-enforceable, non-binding memorandum of

understanding known as a Final Project Agreement (FPA).[44] FPAs have been negotiated between applicants, the EPA and, where applicable, state environmental protection agencies and project stakeholders. FPAs, when complete, contain a detailed blueprint of the steps a company will follow to run the experiment and improve its environmental performance.[45]

EPA and the applicable state agencies then generally issue the company a new, enforceable permit intended to last the life of the experiment. XL contemplates that the Agency will issue permits granting businesses the flexibility to make process changes and increase emissions (up to specified levels) without having to secure the approvals normally required. Thus, the "XL" permit breaks regulatory barriers by exempting corporations from precise regulatory requirements that would otherwise have barred such experiments. Alternatively, the Agency may resort to discretionary rationales involving reinterpretation of a rule's presumed intent, or may grant a variance from existing regulations.

Finally, XL projects enter an implementation and evaluation phase. Experiments are implemented at participating facilities and then evaluated for effectiveness, transferability to other industry sectors and their potential effect on the existing regulatory structure. This evaluation is conducted by project sponsors, stakeholders, regulatory agencies, and other parties. EPA was particularly concerned that all relevant points of view be taken into account in developing and evaluating these experiments. Thus, EPA views projects proposed by "stakeholder groups" most favorably. The input and ultimate support of environmental groups, elected officials, other industries, and affected communities have been essential to Agency approval.

Proponents in the White House and EPA viewed (and still view) XL as a long overdue opportunity for the private sector and EPA to cooperate in permit design. However, critics were and remain skeptical that firms would always use XL to improve environmental performance or test transferable technologies. "XL could be a recipe for undermining existing environmental standards under the guise of regulatory reinvention."[46] They suspected that XL participants would offer EPA multimedia trades

44. The FPAs are unenforceable. However, their terms and conditions are ultimately subsumed within a permit or other legal instrument, which is enforceable.

45. *See* Regulatory Reinvention (XL) Pilot Projects, 60 Fed. Reg. 27282. *See also* EPA Project XL homepage, <http://www.epa.gov/ProjectXL>.

46. Freeman, *supra* note 27, at 38.

that might pose new and worse hazards to workers and the environment. They argued that community groups were neither sufficiently funded nor well enough informed to be either meaningful participants in, or credible watchdogs over, FPA negotiations and permit implementation.

D. *Information on Specific XL Projects*

As of mid-1997, projects had been implemented by Berry Corporation, Intel Corporation and Weyerhaeuser.[47] Three other projects were determined to be worthy of development, although not sufficiently innovative to satisfy XL criteria at the time they were reviewed by EPA. These are going forward under a separate process.[48] Twelve projects are in various stages of development and five others are under consideration. Twenty-five proposed XL projects have been rejected by EPA or withdrawn by their sponsors.[49]

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47. The Berry Corporation and Intel Corporation projects are discussed in Section V.

48. The companies involved are IBM, Akzo Chemical and South Coast Air Quality Management District. Such projects are "facilitated" to the implementation stage by EPA personnel. This is done through informal meetings and data exchange between EPA, the project proposer and stakeholders.

49.

Table of Specific XL Projects

Implemented and Evaluated	Under Development	Proposed	Successfully Facilitated with the help of XL, but not XL projects
1. Berry Corporation 2. Intel Corporation 3. Weyerhaeuser	1. PCS Nitrogen, L.P., (formerly Arcadian Fertilizer) 2. Hadco Corporation 3. Imation 4. Lucent Technologies 5. Massachusetts Dept. of Environmental Protection 6. Merck & Co., Inc. 7. Minnesota Pollution Control Agency 8. Molex Incorporated 9. New York State Dept. of Environmental Conservation 10. OSi Specialties, Inc. 11. Union Carbide 12. DOD: Vandenberg Air Force Base	1. CITGO 2. Dow-Texas 3. Eastman Chemical 4. DOD: Elmendorf Air Force Base 5. DOD: Air Force Plant #4	1. IBM 2. Akzo Chemical 3. South Coast Air Quality Management District

For the most up-to-date information on EPA's Project XL, see Website: http://Project XL/XL_home.nsf.

E. *Projects Under Development*

Below are brief descriptions of twelve projects under development in order to demonstrate the types of proposals that XL has received thus far.[50]

1. PCS Nitrogen, L.P.

PCS Nitrogen, L.P., of Baton Rouge, Louisiana, is a major manufacturer of food-grade phosphoric acid. The phosphoric acid production process generates large amounts of phosphogypsum as a byproduct. This phosphogypsum is stored in inactive "gyp stacks" at the facility. Significant runoff is generated from the inactive stacks. PCS discharges 190 million gallons of this runoff annually directly into the Mississippi River under a Clean Water Act (CWA) National Pollution Discharge Elimination System permit. This runoff contains up to fourteen million pounds of phosphoric acid, which must be reported to the EPA's Toxic Release Inventory (TRI).

PCS wants to reduce its TRI reporting burden and curb the expanding gyp stacks. Specifically, the company plans to make a product for enhancing agricultural soils by composting the gyp from their facility, runoff waters from their inactive stacks, and organic waste from outside sources such as sugar cane processing. The composting would occur at the stack itself in a patented biological process that combines fifty percent gyp with fifty percent organic waste to manufacture the soil enhancer.

PCS believes that the resulting soil enhancer B referred to as "Gyp-Post" B has multiple agricultural and horticultural applications. Through the incorporation of gyp, the product is high in calcium and sulfur. The presence of the organic waste serves as a further supply of nutrients and increases the bindability of soils. However, existing Clean Air Act (CAA) regulations prohibit PCS from utilizing gyp in this manner. Thus, to proceed with its plan, PCS needs an exemption under CAA regulations. Existing CAA regulations are aimed at preventing radiation risk from land application of gyp in the event the agricultural lands are subsequently converted to residential use. Under these CAA rules, waste gyp with radioactive content higher than ten picocuries per gram cannot be used for agricultural purposes.

50. The EPA lists twelve projects as being under development. All project descriptions are taken from EPA's Project XL website, <http://www.epa.gov/ProjectXL>.

PCS's gyp, by and large, has higher radiation content — up to thirty seven picocuries per gram. However, the company proposes to use only gyp with radiation content no higher than fourteen picocuries per gram to make "Gyp-Post." Since this gyp would be combined with fifty percent non-radioactive materials, the company claims that the net radiation for the soil enhancer would be no greater than seven picocuries per gram. Consequently, the EPA's concerns about radiation risk would be adequately addressed.

2. Hadco Corporation

Hadco Corporation manufactures printed wiring boards for the computer industry. Hadco proposes to enhance the direct recycling of metal bearing streams from its printed wiring board (PWB) manufacturing facilities. Because of their toxicity, etching solvents in wastewater treatment (WWT) sludge from PWB manufacturing were listed as hazardous wastes in the 1970s under the Resource, Conservation and Recovery Act's (RCRA) Subtitle C.

Hadco proposes that EPA delist its sludge because the industry has since switched to less toxic etching solvents; delisting would reclassify the sludge as nonhazardous. The sludge generated by electroplating operations is regulated as hazardous waste because of its assumed cadmium, chromium cyanide, and nickel levels. Hadco intends to show that its modern sludges contain substantially lesser amounts of these constituents than presumed by EPA when it defined PWB sludge as a listed hazardous waste over twenty years ago.[51] Hadco proposes that a delisting will allow it to transport WWT sludges directly to recycling facilities rather than having to trans-ship the wastes through specially permitted hazardous waste treatment facilities. Currently, Hadco must transport its WWT sludge to Pennsylvania, where it is treated and then sent to Canada or overseas for recycling.

Based upon the cost savings of delisting, the second phase of this proposal would allow Hadco to purchase on-site sludge dryers so it can recycle other non-RCRA process wastes. In addition, the company proposes to create a market for PWB WWT sludge, whereby Hadco could accept non-hazardous wastes from smaller PWB manufacturers for recycling.

51. WWT sludge from PWB manufacturers is subject to a blanket F006 listing as a hazardous waste under Subtitle C of RCRA. 40 C.F.R. § 261.31.

3. Imation

Imation's Camarillo, California, facility manufactures magnetic data storage cartridges for the computer industry. (The facility was established by Minnesota Mining and Manufacturing Company ["3M"]) in 1963 and was transferred to a newly created spin-off company, Imation, in 1996.)

Magnetic tape manufacturing requires regular changes to plant operations, requiring frequent amendments to Imation's multiple air permits. Imation proposes to simultaneously simplify its operations and improve its environmental performance by obtaining a performance-based "Beyond Compliance" permit. A single, simplified multimedia permit would establish emission caps below existing regulatory limits and implement a simplified reporting system and Environmental Management System verification process. This proposal would allow Imation to operate with more flexibility, reduce costs and paperwork, explore innovative approaches to environmental management and provide environmental benefits. Imation will accomplish this by working with various communities to develop plans for the generation and use of emission reduction credits.

In exchange for enhanced environmental performance, Imation would be given flexibility to make changes in operations without undergoing Agency review. Imation will obtain a new multimedia permit that will affect numerous federal, state, and local regulations focusing mainly on air emissions, but also include wastewater and waste generation. The air regulations affecting the facility include New Source Review in both non-attainment and attainment areas, Reasonably Available Control Technologies, Maximum Achievable Control Technologies, Title V Clean Air Act operating permit programs and others. Reporting requirements will also be included in the permit as Imation will develop public reporting procedures.

4. Lucent Technologies

Lucent Technologies, in fulfillment of the ISO 14001 standard for environmental management systems (EMS), seeks to certify its EMS through Project XL.[52] It proposes using its EMS as a framework to develop specific proposals simplifying permitting, record keeping, and reporting requirements. The proposal would

52. ISO is a set of environmental management systems designed by the Geneva-based International Standards Organization.

first establish an EMS for the entire microelectronics unit of Lucent Technologies and then develop specific proposals for regulatory flexibility at other Lucent facilities. Lucent intends to use this proposal to test the broad applicability of ISO 14001 as a standard to determine regulatory flexibility and enhanced environmental performance.

The proposal does not yet address any specific regulations, but discusses permitting, permit modification, compliance monitoring and record keeping requirements under the Clean Air Act, the Clean Water Act, RCRA and the Toxic Substances Control Act.

5. The Massachusetts Department of Environmental Protection (DEP)

DEP proposes to streamline its permitting and reporting processes. DEP developed the Environmental Results Program to reduce the number of permits applied for, renewed, and issued through a program of facility-wide, performance-based self-certification. The project will begin with a demonstration project; the first two industry sectors are drycleaners and photo processors. Without developing permits for each facility, industry representatives will cooperate with DEP to establish criteria for reporting compliance with state performance and operating standards.

The project is intended to reduce resources expended by both DEP and industry in the permitting process, as well as to improve compliance by offering companies flexibility in the ways they move toward pollution prevention. The majority of federal and state environmental regulatory programs are based on the issuance of permits. Therefore, DEP believes this program should be transferable to other industry sectors.

6. Merck & Company, Inc.

Merck is a large manufacturer of pharmaceuticals. Its XL project involves negotiating of an innovative draft air permit with the Virginia Department of Environmental Quality and EPA that would result in environmental benefit to the surrounding area while providing operational flexibility at the Merck site.[53]

The draft permit would provide a sitewide cap on total criteria air pollutants (ozone, sulfur dioxide, particulates, carbon monox-

53. The negotiators include the National Park Service, EPA, the Virginia Department of Environmental Quality and the communities of Elkton and Rockingham County. Regional environmental organizations were sought out for comment on the evolving draft permit.

ide and oxides of nitrogen) emitted from the site. The cap should result in an initial emission reduction of 950 tons of criteria pollutants; the initial reduction would be achieved by converting the facility's main powerhouse from coal to natural gas. As long as emissions remain below the cap, Merck will be allowed to change existing manufacturing operations or to add new processes and equipment without seeking prior approval from regulators. Should new regulations be promulgated, the facility will have the option of either complying with the rule as written, or lowering the emission cap by the amount that the rule would have reduced the site's emissions.

Merck's XL proposal also features an innovative three-tiered approach to monitoring, record keeping, and reporting. Each tier has specific monitoring, record keeping, and reporting requirements that come into effect once that tier is reached. This approach is designed to give Merck added incentive to minimize emissions in order not to trigger higher tiers, which would result in more frequent and comprehensive requirements.[54]

7. Minnesota Pollution Control Agency (MPCA)

MPCA is seeking approval to implement three to five proposals from specific facilities. The Minnesota proposal aims to allow greater operating flexibility in exchange for meeting emission caps beyond current levels required by existing regulations. Permitting requirements under the major media statutes (RCRA, CAA and CWA) would be affected. Current stakeholders are the state of Minnesota and a committee comprised of industry, academic, government and citizen group representatives.

Minnesota's most fully developed project was proposed by U.S. Filter Corporation; it would allow the company to implement new recycling operations that would otherwise require major modifications of its RCRA Subtitle C permit. Specifically, U.S. Filter will recover and reuse spent hydrochloric acid contaminated with metals and cyanides used in its manufacturing op-

54. Tier I: Whenever the actual total criteria pollutant emissions for the last 12 months are determined to be greater than 0 percent and less than 75 percent of the total emissions cap, compliance with this tier is required; Tier II: whenever the actual total criteria pollutant emissions for the last 12 months are determined to be equal to or greater than 75 percent and less than 90 percent of the total emissions cap, compliance with requirements in this tier is required; Tier III: whenever the total actual criteria pollutant emissions for the last 12 months are determined to be equal to or greater than 90 percent of the total emissions cap, compliance with requirements of this tier is required.

erations. The used hydrochloric acid would otherwise be defined as hazardous waste (under existing regulations) and be difficult or impossible to recycle. The company also proposes to recover and reuse its contaminated process wastewater.

Anderson Windows has submitted a similar project proposal to recycle its spent vinyl, sawdust and window components for use in new products. These actions would otherwise violate portions of RCRA.

8. Molex, Incorporated

Molex proposes to segregate the wastewater stream at its new electroplating facility in Lincoln, Nebraska. Molex suggests that recognizing that its waste contains valuable by-products and reclassifying them as hazardous materials (not hazardous waste) would result in significant financial savings and environmental benefit. It claims that the treatment of segregated wastewater streams could result in at least a fifty percent reduction in mass loadings of its treatment plant and lower sludge disposal costs because pure metal sludges can be sold directly to processors. Since pure sludge does not require disposal, the proposal eliminates disposal fees. Reclassifying valuable by-products under RCRA from hazardous wastes to hazardous materials would shift the method of shipping to common carriers, no longer requiring shipping by licensed hazardous waste haulers.

9. New York State Department of Environmental Conservation (NYSDEC)

RCRA requires producers of hazardous wastes at remote locations, such as manholes and trenches, to transport any quantity of waste directly to a treatment, storage and disposal facility and to obtain a separate EPA identification number for each location. The producer must also file a Hazardous Waste Report for each instance of hazardous waste spillage.

NYSDEC's project will allow public utilities to consolidate essentially identical hazardous wastes and store them for up to ninety days (the regulatory maximum) before transport and disposal. This should result in fewer vehicle trips, with larger loads. The project is expected to minimize unnecessary paperwork and facilitate more efficient use of time and labor. NYSDEC also claims that allowing public utilities to consolidate essentially identical hazardous wastes and store them for up to ninety days

will increase public safety and significantly reduce costs to public utilities and EPA.

Supporting stakeholders include NYNEX for the telephone industry, Con Edison for the electric power industry, and Brooklyn Union Gas for the oil and gas pipeline industry.

10. OSi Specialties, Inc.

OSi is a specialty chemical manufacturer. It proposes a project for its Sisterville, West Virginia plant that would result in overall lower emission levels at the facility than would be expected from simple compliance with new RCRA air emission standards for its surface impoundments and tanks. In exchange for EPA's deferral of certain RCRA regulations controlling air emissions, OSi will add controls to its existing polyether production process unit to drop facility emissions substantially below current levels. OSi estimates that it will be able to reduce overall air emissions by about 309,000 pounds per year at a much lower cost. In addition, 500,000 pounds per year of methanol will be removed from the wastewater system, thus avoiding about 800,000 pounds per year of sludge generation.

11. Union Carbide (UCC)

UCC, in consultation with Louisiana, EPA and other parties, has proposed two demonstration projects at its Taft, Louisiana facility. The first would use alternative technologies or containers for the satellite accumulation of hazardous wastes for periods of three days or less. The second would eliminate redundant waste analysis requirements for materials treated at a permitted/interim treatment, storage and disposal or recycling facility, and would establish a general waste classification. UCC proposed four projects that generally fit these two categories. The projects affect air and water emissions, and hazardous waste. All fall under RCRA.

12. Vandenburg Air Force Base (VAFB)

VAFB proposes to take money it now spends on permitting, record keeping, monitoring, training and other administrative requirements of the Clean Air Act and to use those funds to upgrade and retrofit boilers, space heaters, and other equipment. Through this phased retrofitting program, VAFB expects to reduce the facility's emissions from approximately sixty tons per year to twenty five tons per year. In the short term, the focus will

be reducing emissions from boilers, furnaces, and process heaters. In the long term, the focus will be on opportunities to prevent pollution by reducing emissions from internal combustion engines, solvent, and surface coating applications, as well as other sources of ozone precursors.

F. *First Impressions*

What is most interesting about these projects is their generally prosaic nature. Despite statements from industry, scholars, and commentators on the need for alternatives to command and control, these proposals suggest only modest relief from discrete environmental regulations. They would permit new recycling activities under RCRA, allow more relaxed temporary hazardous waste storage under RCRA, establish more flexible Clean Air Act permit limits in exchange for an overall reduction in air emissions, and permit experimentation with ISO 14001 standards for environmental management systems. Possible reasons for the collective lack of ambition suggested by these proposals are discussed below.

V.
FROM THEORY TO REALPOLITIK: THE AGENCY'S EXPERIENCE IMPLEMENTING PROJECT XL

Interviews were conducted with eighteen EPA staff members, academics, members of the business community, non-government organizations (NGOs) and other stakeholders involved in XL. By agreement, quotations are not attributed to specific interviewees.[55] The interviewees concluded nearly unanimously that EPA's institutionalized "enforcement culture" was a critical

55. The interviews were designed to encourage subjects to explore the strategic and political tensions generated by stakeholders in the XL process inside and outside the Agency, tensions that profoundly affect project implementation. The interviews also explored the XL participants' perception of the factors that influenced the negotiation of their individual projects. Interviews were conducted in person and by telephone from March 1995 through May 1997. Interviewees included Christopher Knopes, the EPA's national XL coordinator; George Wyeth, of the EPA's Office of General Counsel; Brian Grant, of the EPA's Office of General Counsel; George Hawkins, who is with Vice President Al Gore's National Performance Review and was formerly XL coordinator of the EPA's Region I; Anne Kelly, XL coordinator, EPA Region I; Kenneth Rota, RCRA Enforcement Specialist and Hadco XL team member, EPA Region I; Ira Leighton, chief of the Enforcement Office, EPA Region I; William Patton, program manager, EPA Region IV; Jeffrey Rosenbloom, attorney, EPA Region IX, and Jody Freeman, acting professor of law, University of California at Los Angeles. Other interviewees requested anonymity.

barrier to operating in the new ways called for by Project XL. According to one XL administrator, "Philosophically, the greatest resistance to flexibility is within the agency itself . . . . A 'command and control' agency cannot run an initiative stressing innovative approaches; it seems evident to everyone but . . . EPA. But then again, these institutional values run so deep in us. They are hard to step far enough away from for us to see." Overall, they believe that Project XL has not yet achieved its broader mission, despite modest successes in a number of instances.

A. *EPA's Cultural Values and Institutional Goals*

EPA has invested in enforcement-oriented activities for decades. A significant number of Agency personnel at all levels reacted to XL specifically (and adaptive management notions generally) as a threat to a system that has worked reasonably well to protect the environment and to advance their careers. As an XL regional team member described it,

> [The XL regional teams] keep going through the same experience: first, political appointees on the headquarters level tell us to 'throw away the rule book' in formulating XL projects. We then negotiate agreements with participating companies and environmental group stakeholders. We submit our agreement by consensus to various Agency headquarters offices. They either disagree with each other, or individual offices disagree on separate points. In the end, we are told that our innovative agreement conflicts with headquarters' understanding of the pertinent regulation. We thought the point of the initiative was to propose innovative solutions to persistent regulatory problems! Schizophrenia rules.

A regional XL coordinator observed that:

> [O]ur headquarters-oriented approval structure has always been 'top-down.' It didn't change for Project XL. As the initiative progressed [in 1996 and 1997], headquarters exerted more and more command and control over the regional personnel involved, particularly with regard to our exercise of discretion over what might constitute a supportable regulatory interpretation. It was as though, faced with an initiative demanding flexible and creative analysis, they reacted by retreating to the safety of the tried and true. This dampened our regional desire to keep proposing innovative approaches to them; they [headquarters offices] simply could not cede control of any XL issue to us. They would not use their discretion to ratify FPAs cooperatively crafted by the regions, the stakeholders and the company. In the end, we stopped advocating for innovative experimental approaches because we were

> consistently shot down by headquarters. The only way to get by our own people was to shoehorn all projects into conformity with some notion of the existing regulatory structure, using discretion as a justification for doing so. To some degree, this undermined the legitimacy of the mechanisms governing the Agency's exercise of discretion. I think that this defeated a purpose of XL: the collaborative exploration for regulatory improvement lying 'outside the box' of our existing structure.

"EPA hasn't cultivated or rewarded the skills necessary to successful innovation since Reagan was elected," remarked a regional XL team member. "It doesn't know how to experiment. Nor did it attempt to attract the expertise to evaluate research and development proposals floated by the regulated community and our lack of entrepreneurial skills hurt us on Project XL. Instead of . . . participating as a partner in project development, we treated each project as a permit application to be passively processed." A fellow team member replied, "Why should we have done anything else? We are not a research and development corporation; we are a public sector enforcement agency. The skills to do XL are not at EPA; the very concept was deeply distrusted. It's a fact that, in our region, those who participated in Project XL were considered turncoats by certain important middle-level managers." Another XL regional coordinator echoed this perception. "In the end, these managers reminded us that our success is measured simply by how many actions we take and how many penalty dollars we collect. Nothing else counts."

Strategic moves to protect the status quo were not confined to EPA headquarters. As one EPA regional enforcement manager described it, "Many of us put the blame solely on the headquarters divisions, but our regional inability to view compliance as a flexible concept, achievable through collaborative experimentation, was equally at fault." A regional XL coordinator stated,

> In my region, certain senior attorneys lobbied to be appointed to specific XL projects because they wanted them killed. They were old-line enforcers and saw them [XL projects] as yet another plot to weaken our enforcement capability and erode their [own] status. With that agenda coming in, how could any innovative project requiring collaboration succeed?

Career concerns, in combination with institutional enforcement biases, generated managerial hostility toward XL. A regional coordinator who acted as an XL liaison between his region's enforcement team and the regional administrator's office stated that

> [On the regional level], middle level managers and their directors were generally opposed to Project XL. Most of them didn't have a philosophical bias one way or the other. But they were certain that the Agency's enforcement mission as its primary activity wasn't going to change. They knew that headquarters wasn't going to award the region's extra resources to staff the project. Where were those XL resources going to come from? You got it out of the existing enforcement personnel pool. So, if staff goes to XL, where were the enforcement 'beans' going to come from?

An XL regional attorney perceived the problem as a battle between the political demands behind Project XL and the status quo:

> Headquarters wanted it both ways; they wanted to say that nationwide, enforcement numbers were up and that we were administering loads of XL projects. This was impossible . . . in the end, EPA veterans knew the enforcement demand would win out, particularly when the presidential election was over. So they fought XL staffing whenever it threatened to affect the stability of their day-to-day operations.

Interviewees spoke of EPA's institutionalized fear of failure combined with internal confusion over what the Agency defined as "success." For an enforcement agency, "success" might be defined as good settlements and favorable court decisions. For those favoring adaptive management, however, "success" is the generation of useful data. Data can be generated by experiments that produce "good results" (i.e., a transferable technology) or that "fail" (i.e., prove that a proposed regulatory innovation does not achieve a predicted reduction in emissions at a certain cost). These competing definitions were never reconciled by those in charge.

An XL regional coordinator who is also an attorney reflected that: [E]nforcement agencies are justifiably afraid to fail. If you bring a case to court and lose, you might set a negative legal precedent that could haunt you for decades. From a litigator's point of view, it's better for EPA to bring only cases it is sure of winning and let the rest go. Unfortunately, this kind of thinking carried over into these XL projects, where it is fatal to a spirit of experimentation. Regional and headquarters managers demanded 'success.' But how can you run an experiment and demand a guarantee of success from your team? If we are assured of a successful result, why run the experiment?

An EPA program and XL engineer agreed:

> I never understood the rhetoric about 'bold experimentation.' I'm a scientist by training. I experiment to 'find out.' To get answers, I have to carefully design an experiment, monitor it, chart the results and deduce why it came out that way. I then adjust the experiment in accordance with my deductions and go on testing. But the EPA has insufficient will to pursue this kind of long-range, low profile quest. And, on the political level, [EPA] has neither the courage nor the patience. Also, we have no system in place to record institutional memory and that's fatal to our growth—fatal no matter how you decide to 'grow' EPA—toward pure enforcement, pure experimentation, whatever. And since there is no real method developed to gather the data generated from experiments and no institutional memory, EPA 'lifers' see no value to an adaptive management approach. Even if all this were not true, there is certainly no method by which we are forced to consider how such results should affect the way we operate. No feed-back loop at all.

An EPA enforcement manager tracking XL in his region bemoaned XL's failure to transfer relevant data into the Agency's day-to-day activities:

> There was no attempt at double-loop learning — [no attempt] to consistently feed back the results of XL experiments into our existing way of doing business. So, without that, what's the point of all the blood letting? XL did some good things. But we've made no attempt to look at a project's success and transfer it. And transferability was both a major goal of adaptive management and one of the major attractions of the XL project. It ended up being project approval for short-term political gain. We needed to consider transferability of these projects, both from the Agency's point of view in upgrading operations and to meet industry's interest in creating collaborative new technologies it could actually use. We never did.

Project XL sought to employ administrative flexibility so that unique solutions to the problems of certain industries, even simple facilities, could be found. It also sought to stimulate experimentation that would lead to "new ideas" and "reforms" that could and would be copied widely. The logic of adaptive management (and its emphasis on regulatory flexibility and experimentation) is not antithetical to the desire for systematic reform—as long as good information is collected about each "experiment" and shared widely.

Interviewees also cited impediments posed by the traditional adversarial relationship between EPA and state regulatory agencies, corporations and non-governmental organizations. An EPA enforcement attorney serving on an XL team remarked that,

> [T]raditionally, the EPA and those whom we regulate don't talk to each other. When we do talk, we automatically distrust what the other side is saying. Along comes XL asking us to brainstorm to create new ways of achieving new relationships with each other and to agree on new ways to comply with environmental regulations. But with that as a starting point, how quickly could we learn to collaborate with these folks? They have no idea how to do it either. We don't even know how to listen to each other, much less collaborate.

Interviewees had little hope XL would have any serious influence on the Agency's culture and modus operandi. Another EPA enforcement attorney serving on several XL teams believed XL was being undermined by its exploitation for headline value:

> XL uses adaptive management theory in a fascinating, constructively subversive attempt to incrementally change EPA's perception of how to create efficient environmental compliance from the bottom up, starting at the regional level. I wonder if anyone at the White House level realized the implications? In any case, someone at the EPA recognized it, because XL quickly became election year window dressing. There was and is no commitment to adaptive management concepts at the headquarters level. That will not change until new and creative thinking is institutionalized and rewarded . . . .

An XL regional attorney perceived the failure as largely attributable to EPA's internal problems:

> My frustration was that, despite problems, XL actually explored some creative regulatory options—one-stop shopping for permits, exploring alternative methods of de-listing hazardous wastes, operating flexibility under air permits, and setting performance-based emissions goals to name a few. But none of these results are being rerouted into our existing system. Why? We've become a bloated bureaucracy obsessed with dealing with ourselves—not looking outward. So turf issues are always most important to those who run the Agency. In fact, my XL experience shows me the Agency reacted to XL by becoming less flexible, not more.

B. *Internal Policy Conflicts*

EPA headquarters failed to organize an open, consensus-building process defining XL's mission and to coordinate efforts to achieve the initiative's goals. The Agency's limited resources made it likely that enforcement numbers would remain stable or fall if personnel were reassigned to XL projects. Given EPA's enforcement bias, it was vital that headquarters confront this is-

sue and inform the regions whether this might be permissible. This did not happen. Nor did leadership at headquarters create a strategic mechanism to resolve this macrocosmic impasse or any discrete barriers impeding individual projects. "No one office or person at headquarters seemed willing, let alone authorized, to cross lines of authority and resolve project roadblocks," said a regional enforcement manager and XL coordinator. The coordinator continued:

> Headquarters and the regions never talked to each other to work out a memorandum of agreement (MOA). An MOA would have allowed us to clarify among ourselves what XL was designed to do, how much of that design we would try to accomplish, and how we were going to work together to marshal the resources to do it. As time went on, it seemed to me that the various headquarters groups never even coordinated with each other, except in reaction to problems and pressure; never proactively.

It was clear to most interviewees that Project XL was a priority to high-level headquarters managers and to Administrator Carol Browner. However, when conflicts arose between headquarters divisions concerning competing institutional goals, no one in an authoritative position decisively intervened to facilitate, mediate, or clarify. An XL coordinator remarked, "below the political appointee level, it seemed that headquarters was bitterly divided in its feelings toward innovation and adaptive management; so much so that it was difficult for them to give us a straight answer on basic questions."

Nor did headquarters effectively intervene when disputes flared up on interregional projects. An XL attorney-coordinator observed that:

> [O]ur regions differed in interpretation of policy and on the relative priority of environmental protection issues. For instance, our region is very concerned with groundwater protection and our companion region was not. However, the success of our joint project depended on the resolution of groundwater protection issues. Headquarters left our two regions to 'duke it out;' they basically stood back and waited to see which region would win or whether the project would simply collapse as a result of our inability to reach agreement. They were ultimately interested in the politics of it—the appearance of either crediting themselves with a success or disassociating from a failure—and not the merits of the project.

A major headquarters function is to unite all ten regions around an interpretation of a significant policy issue; national legal interpretation is generally the responsibility of EPA's Office

of General Counsel (OGC). This did not happen. There were serious and unaddressed splits between various headquarters and regional divisions. At headquarters, XL program proponents were often in conflict with positions taken by the attorneys in OGC. Many EPA interviewees at the regional and national levels echoed this comment by a regional XL coordinator: "OGC disliked XL. It was sensitive to the possibility that successful XL projects might create the perception that OGC's pronouncements were neither the most correct nor the most beneficial to foster environmental improvement and efficiency."

Another XL regional coordinator stated that "several headquarters offices were involved in our projects. In our negotiations with them, it became clear that they understood these projects primarily as threats to their status and [to their] established functions. Headquarters divisions had their own turf concerns and became a veritable ball and chain in approving any projects." At EPA headquarters, some personnel admitted as much. "Headquarters never developed a coherent statement on what XL meant in terms of signaling permissible parameters for projects the regions were reviewing. The short-term political agenda behind its creation didn't give us the time to do so," said one interview subject.

An EPA regional XL coordinator agreed:

> Consensus on XL's mission and operational strategy had to be built throughout the Agency. But it wasn't. So we ended up modeling the very behavior we were trying to surmount: conflicts, wasted time and energy, achievement of policy goals sacrificed on the altar of career agendas. We expected conflict with the proposing corporations and with environmental groups. But what happened internally was terrible.

The defensively strategic proclivities of some regional administrators also affected the fate of XL. A regional XL coordinator observed,

> Our regional administrator [RA]saw nothing to gain. He is a career government type, administratively driven. He demanded high enforcement and permit-processing numbers. So he refrained from encouraging XL in any useful way. In other regions, you had RAs who were intensely political, literally running for office. In those regions, innovative projects were aggressively pursued for headline value. When staffing became an issue, those regional administrators simply ordered their managers to reassign people to XL.

A high-ranking EPA director analyzed this dysfunction in leadership as follows:

> A failure to clearly enunciate a mission is typical of Browner's leadership style, which is designed to survive short-term political fire-drills, not to advance policy. But it didn't start with her and won't end when she leaves. We are not culturally encouraged to be a proactive force; instead, we react to short-term political fire drills. Generally, EPA culture dictates that those who act are left behind. Those who confine themselves to reaction are promoted. It's no accident that Browner never brings her assistant administrators into the same room to align them on important, cross-cutting issues. She believes that she will survive only by being all things to all people. If Congress holds hearings premised on the notion that the EPA is soft on enforcement and too strong on collaboration with the 'enemy.' Browner sends her pit bull assistant administrator to testify about how punitive the Agency really is. When Congress investigates why EPA is so needlessly aggressive, rigid and punitive toward a generally well-meaning private sector, she sends the assistant administrator who preaches the joys of innovation, reinvention and cooperation. This is the reality of the EPA; it is a political football for Congress.

C. *The Private Sector: Interests and Disincentives*

In the words of a corporate director of environmental affairs,

> Don't forget that cultural problems exist here as well. Environmental managers are people whose jobs are defined as *compliance.* They do not like or trust the XL 'leap.' Their definition of success is how far you keep EPA away. XL [projects] only bring [EPA] closer. Our culture discourages and distrusts the idea of partnership with outsiders, too, particularly with an enforcement agency. And despite the XL rhetoric, our company didn't believe EPA knew how to collaborate. For instance, few of us thought EPA would actually forego an enforcement action if it came across something negative while visiting the plant or reviewing an audit we ourselves had prepared . . . And what if an XL project of ours failed? We suspected that EPA would then be looking for private sector victims to blame at that point. So, what was really in it for us?

For their part, Agency personnel were puzzled by the modest nature of the projects industry suggested for XL's first round. As someone at the EPA headquarters level stated,

> We were surprised at the inferiority of the XL proposals themselves. It was the corporations, after all, which kept claiming that they could exceed current environmental standards cheaper, faster

and so on. All they needed was relief from inflexible rules or alternately, they argued that all they needed was relief from our inflexible interpretation of what were, in fact, flexible rules. So, we expected proposals that reconfigured basic command and control tenets: alternative permitting instruments, paradigm-shifts to performance-based standards with no specified technologies and so on. Instead, industry chose only to nibble at the margins. It was as if they were resigned to the system as is.

Another EPA national XL coordinator remarked,

A lot of the disappointment in XL was generated by industry, not EPA or the NGOs. Industry pressured us into XL through the Clinton administration's Reinvention Campaign. But many of the projects that they promised would deliver improved environmental results at lower cost simply didn't. In the end, a generator of pollution must achieve some objective number measuring its emissions. But most XL proposals said something like, 'If you give us the regulatory flexibility allowing us to substitute *our* number for yours, we can always come pretty close to our number and occasionally even hit your number. And we will save a lot of money!' A lot of XL proposals were rejected by us for that reason. I think Project XL called the private sector's 'cheaper/better' bluff.

Another headquarters coordinator concluded his interview by remarking that,

[P]art of what I learned on the national level was that perhaps command and control should not be viewed so negatively. Environmental results are quite difficult to measure, let alone define. When you attempt to do so, EPA and the industries get involved in battles between experts, and this is always a zero-sum battle. Command and control may no longer be politically correct, but it may be the only regulatory method that business and politicians can agree on.

Not surprisingly, representatives of the regulated community did not entirely agree. A corporate attorney retorted,

First, EPA assured us that our experiments would be litigation-proof through its employment of 'enforcement discretion' but we knew that enforcement discretion was not enough to protect us from NGOs. Environmental statutes contain citizen suit provisions; any member of the affected public can bring an action against us without EPA's blessing or involvement. Despite White House assurances, needed legislation was never passed. Clinton and Browner were too scared to support it in an election year. EPA didn't have the will to step up to the plate on the issue. They provided little leadership on the day-to-day XL review process. It was our problem to identify and convene all stakeholders and get

> their agreement. This eventually stood XL on its head. We spent more time and money drumming up interest in the project than on the project itself. And in our case, there simply was no stakeholder interest. EPA's obsession with the welfare of the stakeholder process was misplaced. If EPA wanted it, it should have coordinated it. Instead of it being an innovative technology initiative, it made the projects captive to the opinions of the NGOs. For me, the way EPA handled the stakeholder issue was its worst failure.

An EPA national coordinator confirmed problems with the stakeholder process:

> Stakeholder participation is vital, but it needs to be bounded. Industry is understandably loath to make significant proposals in cases where it can be held hostage by any member of the public with any agenda. Stakeholders should be involved, but the success of the entire process cannot depend on whether a particular NGO is happy. That's not what consensus is.

Several corporate XL participants and EPA regional team members agreed with the following statement, made by an XL regional engineer team member:

> In the end, it's EPA's responsibility to make decisions on the efficacy of environmental compliance proposals. Yet the Agency's obsession with stakeholder involvement turned XL into something not entirely relevant to the collaborative development of technology: a stakeholder-designed, from the ground up exercise in process development. That was not XL's stated purpose.

A law professor was surprised EPA expected to see industry propose paradigm-shifting projects during round one.

> EPA cannot throw away the rule book as it originally claimed. If you want to change paradigms, you need to change the underlying statutes and change the definition of the kind of discretion EPA can use in carrying out a statutory mandate. EPA cannot unilaterally do this, nor can it approve projects that propose to do so. Also, the Clinton administration didn't pursue legislation that would have clarified the application and approval process to protect its participants from a certain degree of legal exposure. The degree to which these two parties fundamentally misunderstand each other's interests is incredible. There are too many institutional impediments to propose groundbreaking regulatory ideas at this time. This is only the first round of XL. The parties don't trust each other. Neither has a clear idea of how the other side defines the goals of XL or evaluates the incentives to participate. They can't easily come to agreement on the subject, either, since they never developed a process within which to interact. EPA didn't pursue a statutory endorsement of XL. Thus, EPA has no way to

> legally define such projects as experiments and permissible, within specific limits, outside the current regulatory structure. Lastly, it is economically naive to expect industry to begin by challenging old regulatory paradigms. Industry has long since sunk the funds to buy technology allowing it to comply with the last twenty years of environmental regulation. Those battles are past history. The technology they bought still has useful life in it. Industry is now interested in what is about to come over the horizon. When safeguards to possible legal and financial exposure are addressed by EPA, the initiative paradigms will expand—not before.

By fall 1996, industry's disenchantment with the XL approval process became apparent. First, state environmental officials issued negative public statements echoing business' frustration with the gap between EPA's promises of regulatory flexibility and their actual experience in trying to get it.[56] The Massachusetts Environmental Commissioner stated that there was a disconnect between Agency officials touting the program's promise and program staff who thwarted projects with bureaucratic delays, ratcheting down the flexibility of XL as they went. The Deputy Director of Michigan's Department of Natural Resources believed that EPA officials constantly changed the rules for approval, thereby making an XL project "a continual moving target" and "extremely poorly managed at every level. There's so much suspicion on the part of the regulated community that it's not worth spending much time on it anymore."

However, certain business leaders involved with specific XL projects were supportive despite their many frustrations. An Intel spokesperson attributed most difficulties to companies' general reluctance to invest enough effort up front, when only 'uncertain benefits' were possible, and to an accompanying certainty of criticism from environmentalists down the road. "But just because [Project XL] needs refinement doesn't mean it's bankrupt,"[57] a Hadco Corporation representative stated, noting that, while the XL process had been complicated and frustrating, the potential gains were worth it. "We recognize it's a new pro-

56. Meeting between thirteen state environmental officials and Carol Browner, EPA Administrator, in Washington, D.C. (Oct. 31, 1996). *See Project XL: US EPA, Intel Sign Landmark Agreement*, GREENWIRE (Nov. 20, 1996), *available in* LEXIS, News Library, Grnwre File.

57. Meeting between thirteen state environmental officials and Carol Browner, EPA Administrator, in Washington, D.C. (Oct. 31, 1996).

gram. However, the benefits for companies like [ours] could be substantial."[58]

D. *Environmental NGOs*

NGOs supported EPA's move toward an adaptive management approach, at least in theory. However, they were generally concerned about environmental impacts that might result. They believed business would subvert XL by offering EPA multimedia emissions trade-offs that could pose new and more serious hazards to workers and the environment. Thus, industry could use XL as a cover to achieve lower operating costs by increasing emissions. NGOs otherwise attracted to the adaptive management possibilities inherent in the initiative perceived additional dangers. A representative of the Natural Resources Defense Council saw XL as posing a serious strategic problem. "Adaptive management demands policy making from the bottom up, which is not necessarily bad. But if EPA authorizes ten different policy experiments that simultaneously bubble up from ten different EPA regions, NGOs don't have sufficient resources to cover them; at least not before the first Federal Register notice, and that's too late." Without sufficient resources to participate meaningfully in project formulation and review, "the concept of transferability becomes our ultimate enemy," the representative concluded.

These suspicions were exacerbated by the experiences of certain stakeholder groups. The XL public participation process was not clearly defined by EPA, and often took up many more meeting days per project than expected. Thus, the costs to NGOs of participating in these meetings and meaningfully analyzing the data supporting proposed projects rose alarmingly. NGOs worried that this state of affairs would become XL's normal operating mode; a mode that would effectively (if not intentionally) insulate projects from meaningful public scrutiny. The combination of time pressures and shrinking resources turned many stakeholder meetings into distributive negotiation sessions, in which all parties strategized to protect or achieve their own interests. Integrative interaction between stakeholders eroded. According to one participant,

> I know what an adaptive management approach should entail, and we weren't engaging in it on our project. We were not defining and

58. *Id.*

> solving problems. We became, instead, a group of negotiators, each with different interests for which we were advocating. Those stakeholders that had the funds to stay in the process, obtain expert analysis and file briefs did better than those who didn't have such resources.

Some NGO representatives suspected (and still believe) that this experience proved one of their initial presumptions: that NGOs' only legitimate source of leverage is through litigation or through the media. Certain NGOs believed that only by resorting to their traditional weapons could they persuade business to even consider engaging in an open process. Indeed, in informal communications with other EPA XL regional coordinators, the authors learned that by fall 1996, a number of NGOs were already hinting at lawsuits against XL project approvals based on abuse of discretion.

Additional NGO concerns emanated less from strategic, and more from philosophical points of view. They wondered whether a chronic lack of resources would prevent agencies from being held accountable if a new regime were created collaboratively. "Indeed," wrote one observer, "critics fear that . . . Project XL [is a vehicle] through which the Agency, industry and powerful public interest groups can collude to undermine the public interest. Rather than an alternative to interest representation, these processes threaten to achieve its perfection. Agencies will be reduced to brokering deals between powerful interest groups."[59]

E. *The Agency Retreat*

EPA reacted to the above described criticisms by moving away from its initial reliance on a discretionary 're-writing of the rulebook.' Regions were urged to find flexibility within existing regulations. If a project could not be defined within regulatory parameters, but was statutorily permissible, the Agency resorted to site-specific permits or permits containing special conditions.

This is reflected in changes in headquarters' instructions to the regions regarding the proper uses of discretion in authorizing proposed projects. At the beginning of the initiative, headquarters hoped to use discretion expansively. As stakeholder positions hardened, headquarters retreated.

An EPA regional XL coordinator reflected,

59. Freeman, *supra* note 27, at 83.

> EPA saluted the administration's XL concept and ran it up the flagpole too quickly. And they did so without taking a hard look at the 'carrots and sticks' offered to the players. Industry's corporate attorneys did not consider the doctrine of administrative discretion as adequate protection of their interests. They wanted and expected legislation, which they didn't get and NGOs distrusted EPA public participation mechanisms. They did not trust the existing APA protections to effectively rein in improper exercises of EPA discretion. So the NGOs resorted to business as usual: the threat of a high profile lawsuit. They contacted the companies and, most importantly, Clinton's reelection people. NGOs know that the threat of litigation and bad publicity is their ultimate trump card; it gives them the power to get to the bargaining table on a project like XL, or to scare everyone away from sitting down at the table in the first place.

Another EPA XL coordinator agreed:

> There were plenty of sticks to go around. But where were the carrots? NGOs were suspicious of XL as both a potential evasion of agency accountability and a potential sell-out [to business interests.] Business was worried that EPA couldn't steer the initiative coherently, which would open them to legal action by NGOs or the Agency itself, depending on the policy mood and political needs at headquarters or a region on a given day. And we at EPA were, in fact, hopelessly divided with no XL czar to resolve differences and use those resolutions to make clear policy for all the players. Those . . . interested in implementing XL were given no institutional incentives to persevere. And on the regional level, at least, it became clear that our continued participation might not be the best of career moves.

An XL regional team member recalled, "Headquarters started by telling us to throw away the rule book. Of course, no one [inside the Agency] took that too literally. But, still, we were taken aback by how quickly headquarters backed away from this position as business found discretion inadequate and NGOs considered our proposed use of it as potentially abusive." His regional XL coordinator agreed:

> Headquarters' various guidances on discretion were never more than platitudes. This was one of XL's most significant weaknesses. Enforcement discretion as an approval mechanism was quickly deemphasized after NGOs and business weighed in. We ended up using discretion as a concept to marginally rethink what a permissible regulatory reinterpretation might be.

A national XL coordinator came to the same conclusion. "In retrospect, I now believe that certain regulations are flexible

enough to allow collaborative experimentation without change . . . Many regulations are flexible enough for XL purposes. It's our guidance documents interpreting them that are fossilized." An XL regional coordinator sees no improvement:

> The original headquarters' guidance on the relationship between discretion and XL was a brave response to Congressional challenges to be innovative and [to] welcome collaborative problem-solving methods. But after hearing initial reactions from NGOs and industry, headquarters became entirely reactive; their instructions increasingly seemed to come from a position of fear. Headquarters' guidance on discretion became increasingly shaky, ill-defined and oral instead of written. As on XL's general mission, headquarters could come to no consensus upon which to build a workable definition of discretion or flexibility in using it. Throughout the life of XL so far, definitions continue to fluctuate from department to department.

Headquarters' XL staff was beleaguered by complaints from the regions, businesses and NGOs. "We heard the criticisms. But we simply weren't ready to issue good affirmative guidance. Who knew what issues were going to hit us from the regions? Each project presented a different challenge for us to interpret 'superior environmental benefit,' craft permissible borders for specific regulatory meanings, and so on."

Informed of this comment, a regional attorney retorted,

> They still don't get it. We didn't need their opinion on each definition of discretion or degree of flexibility on specific projects. It was our job to make that initial determination on the regional level, a determination that should have gotten a high degree of deference from headquarters. What we needed from Washington was general guidance on policy goals and parameters. Just another example of the headquarters' uncontrollable instinct to control at the 'tree' level, when what we needed was their assistance in defining the parameters of the 'forest'.

F. *Specific Successes*

Despite the institutional toll taken by the conflicts described above, Project XL has achieved some potentially significant successes.

The Berry Corporation project provides one example. This project, now in operation, produced a truly adaptive permitting system for its plant. The Berry permit replaced seven individual permits with one comprehensive operating permit, known as a "COP." Critical to the XL regime is measuring the degree to

which a plan achieves its predictions. The Berry COP measures the plant's compliance with mandated outcomes and loops the data back into a dynamic compliance system. Significantly, the project envisions a creative, provisional regulatory scheme to run the plant, setting up a scheme capable of compliance measurement and continuous revision. It also conceives of the permit as an ongoing problem-solving tool through which the original agreement will be reviewed and revised in light of new information. One analyst summarized the process,

> In light of the data produced, the Agency, the company and other stakeholders will determine [whether] environmental benefits exceed what would have been achieved under a traditional permitting regime. For each area of environmental performance in the COP, the company has predicted improvement over a baseline, identified the means of achieving it and agreed to a monitoring and disclosure mechanism.[60]

Another example is the Intel Corporation's FPA, also in operation. It proposes that multimedia emission trades be implemented within the framework of a traditional permit.[61] The entire Intel plant is treated as operating under a single emissions cap. Within that cap, Intel may make process changes without applying for the usual permit modifications from state agencies. However, Intel must always maintain air emissions below the levels required by the cap, as set out in the FPA. Such a strategy requires taking some risk. As with the Berry FPA, the Intel agreement has the potential to produce more adaptive approaches to implementation and enforcement than traditional permitting. While Intel succeeds in obtaining pre-approval of process modification, the company committed to tie its emissions levels to production without knowing the details of how those processes will work in the future. All sides agree that this approach would not have surfaced in the context of traditional, adversarial permitting.[62]

The Weyerhaeuser Company's pulp manufacturing facility in Oglethorpe, Georgia proposes to minimize the environmental impact of its manufacturing processes on the Flint River and surrounding environment. The Weyerhaeuser FPA implements a

60. Freeman, *supra* note 27, at 57-8.

61. Intel Corporation is a manufacturer of computer chips. *See* Final Project Agreement for the Intel Corporation Ocotillo Site Project XL 8-9 (Oct. 9, 1996)(on file with author).

62. *Id.* at 45.

long-term plan to create a minimum (environmental) impact mill. EPA and the State of Georgia have agreed to propose changes in relevant RCRA and Clean Water Act rules to support this experiment in minimum impact manufacturing.

Through a combination of enforceable requirements and voluntary goals, Weyerhaeuser is cutting its bleach plant effluent by fifty percent over ten years; reducing water use by about one million gallons a day; cutting its solid waste generation in half over the same ten-year period; improving forest management practices on 300,000 acres of land; and adopting ISO 14001 as its plant-wide environmental management system. EPA is offering Weyerhaeuser the flexibility to consolidate routine monthly compliance reports into two reports per year. Further, Weyerhaeuser will be allowed to use alternative means that would not otherwise have been approved without close examination and permit revisions, to meet the requirements of any new regulations that prescribe maximum, achievable control technology. EPA is also waiving government review prior to certain physical plant modifications, provided that emissions do not exceed stipulated levels.

Finally, these projects envision continued contact among stakeholders *after* the conclusion of the FPA negotiation and provide some degree of shared responsibility for review and modification of the final project agreement. Thus, an ongoing consensus-building process is incorporated into the structure of all these agreements.

V.
CONCLUSIONS AND RECOMMENDATIONS

A. *Conclusions*

Many critics charge that while the administrative state is economically inefficient and discourages experimentation and innovation, agencies exercise too much discretionary power without adequate accountability. These same critics believe these deficiencies undermine environmental enforcement.

However, our analysis of Project XL suggests that the critics of command and control cannot have it both ways. If agencies are to become more efficient in market terms, they need *more* discretion in different categories; not less discretion overall. Discretion to experiment with regulatory techniques—to learn what works and what does not—is crucial to tailored solutions that balance governmental objectives with the needs of the regulatory com-

munity. At the same time, care must be taken that agency exercise of discretion is constrained in order to minimize the risks of abuse and ensure fairness; concerns about abuse of discretion justifiably increase as bureaucracies stretch to encompass goals outside the borders of their enabling statutes. XL provides some insight into these dynamics, shedding light on both the "upside" and the dangers. To date, XL results are basically disappointing. There have been few breakthroughs, fewer real experiments and little lasting reform. This can be attributed to several things. First, inertia and resistance to change within EPA are problematic. Indeed, the most serious impediments to increasing agency discretion at EPA are internal. Second, EPA management never supplied an adequate mandate or resources for EPA personnel working on the XL initiative. Third, industry was overly cautious, failing to propose projects sufficiently innovative to test the potential of the initiative.

The lesson to learn from Project XL is that the best way to encourage technological and regulatory innovation and promote efficiency is to *expand* the use of specific types of administrative discretion. Agencies should be granted increased discretion to experiment with regulatory systems designed to achieve congressionally mandated goals. In that context, XL-like initiatives have the potential to serve as policy laboratories in which such experiments, and safeguards against their abuse, can be tested.

B. *Recommendations*

XL participants consistently expressed frustration when attempting to move outside the "regulatory box." A number of causes were cited: statutory mandates; long-standing, inflexible interpretations of existing regulations; and business, Agency or NGO culture. These barriers comprise significant limits to innovation. Further, most stakeholders still believe their respective interests will not be well served by a collaborative, as opposed to adversarial, approach to regulation. For those who participated in the XL initiative, it is clear that unless Congress provides a new legislative mandate granting EPA the freedom to experiment, innovative projects like XL are crippled before they even begin. In the words of one EPA participant, "Just one abusive or environmentally harmful XL experiment will obviate a dozen individual successes." Even worse, political interests will react to such an outcome by firmly returning EPA to the comfort of its command and control past.

EPA uncertainty regarding the appropriate exercise of discretion limited XL from the start. EPA stated that it would "use a variety of administrative and compliance mechanisms to provide regulatory flexibility for final project agreements."[63] However, for projects involving multimedia trades, EPA never determined whether such projects were, indeed, within the Agency's enforcement discretion and thus immune from judicial reversal.[64]

XL and similar reforms would have a better chance if Congress specifically passed legislation authorizing such activities. In this way, Congress could authorize the exercise of regulatory flexibility for specific projects, even in cases where there is a conflict with promulgated rules and statutory limits. As a safeguard against abuse, a new statute could require EPA to certify that for any given project: 1) there was a significant promise of superior environmental performance (i.e., a result superior to that mandated by statute or regulation which would have to be documented on a regular basis); 2) the proposed experiment posed no potential threat to human health or the environment; 3) the actual management of the experimental project would be as transparent as possible—open to the direct scrutiny of all potentially affected stakeholders; 4) impartial monitoring by independent parties would be provided; and 5) EPA or any other affected party would be empowered to have a project stopped immediately in federal court should these conditions not be met.[65] This strategy would obviate the need for Agency staff to squeeze XL experiments into tortured regulatory reinterpretations. It would also decrease the temptation to stretch the concept of discretion beyond appropriate limits, thus buttressing accountability. Most importantly, such a statute would insulate XL-like efforts from bureaucratic resistance from inside EPA through the pressure of Congressional oversight.

According to Browner, it is unwise to ask Congress to "spell out every detail of not only what EPA must do but also what

63. *See* Regulatory Reinvention (XL) Pilot Projects, 60 Fed. Reg. 27282, 27287 (1995).

64. The problem centers around that fact that FPAs, once published in the Federal Register, become rules. Once this happens, FPAs are susceptible to all procedures for informal rulemaking set out at § 553 of the APA.

65. Many of these same ideas are also endorsed by Jody Freeman. *See supra* note 27 at 87-91.

business must do."[66] Thus, Congress and EPA should form the same performance-based relationship that others advocate for EPA and the regulated community. Congress should push the Agency to achieve certain outcomes while granting it the discretion to choose the most appropriate method of achieving them. This is unlikely to happen in the short term, so greater explicitness in Congressional mandates is still appropriate. Timothy Wilkins and Terrell Hunt recognize the dangers inherent in a performance-based relationship. They point out that an agency,

> [M]ay defy Congress' will, either deliberately or as a result of simple bureaucratic inertia, and occasionally ignore direct mandates, pursue their own agendas or both .... Moving toward an outcome focus and away from methodological controls could exacerbate this problem, particularly because failures to comply with outcome controls, unlike controls on regulatory method, might simply be blamed upon well-meaning but failed experiments.[67]

Therefore, they suggest that Congress adopt explicit administrative objectives when it proposes administrative reforms.

In consultation with the Agency and the Office of Management and Budget (OMB), Congress should develop and publish measurable performance standards to evaluate success relative to EPA's mission, as well as assess cost-effectiveness in pursuit of those ends.

The introduction of new concepts of flexibility may require incentives to prevent abuse, including merit-based pay to agency personnel calculated not on individual performance, but on overall agency achievement of statutory goals. The pay of all civil servants could be pegged to the same objectively measurable standards by which Congress evaluates an agency's success. Thus, agency employees would be motivated by their stake in the success of the organization as a whole. Institutionally-based incentives could be provided for high-level administrators as well. If the EPA performed well over time, Congress might grant it a reduction in oversight, and/or increasing freedom to explore performance-based controls. Abuses of discretion would result in a reinstitution of tighter congressional oversight.

Another safeguard under this model could be instituted by engaging NGOs or other independent technical entities to monitor

66. Carol M. Browner, The Common Sense Initiative: A New Generation of Environmental Protection, Address Before the Center for National Policy (July 20, 1994).

67. Wilkins, *supra* note 4, at 531.

results. This could lend legitimacy to XL-like projects, where industry has ample motivation to exaggerate the expected "superior environmental results" to be achieved. These independent entities might ultimately evolve into an analog of the Government Accounting Office (GAO), making it a dependable and independent source of data, tracking actual Agency and private sector performance. The delegation of monitoring and compliance duties to independent parties should rotate, ensuring independence.

On an institutional level, the short history of Project XL confirms that conflicting incentives among stakeholders discourage innovation. However, it also seems evident that important constituencies within all these groups understand that adaptive management holds great promise for the improvement of environmental compliance regimes.Project XL still has the potential to move all stakeholders (including EPA) towards the institutionalization of collaborative processes for formulating improved environmental compliance goals. The steps required to do so can be achieved within the confines of the existing XL initiative. They include: a focus on problem solving; information sharing and open deliberation among all stakeholders including EPA; meaningful participation by all interested and affected parties at all stages of the process, and; a new perception of rulemaking as an ongoing formulation of provisional solutions to emerging problems.

Under such a collaborative approach, all rules should come to be viewed as temporary and subject to revision. "To this end, continuous monitoring and evaluation are crucial. . .New arrangements, networks, institutions or allocations of authority may replace or supplement the traditional regulatory regime. EPA becomes a convener/facilitator of multi-stakeholder negotiations. It provides incentives for reluctant or untrained parties to participate. It acts as a capacity builder of parties and institutions."

The transformation of relationships among EPA, business and NGOs will take time. However, XL is a signal that the process of transformation has begun. If adaptive management is allowed to take hold, the Agency could cast off the shackles of command and control without jeopardizing (indeed, enhancing the chances of attaining) the environmental performance goals it was created to achieve.