EXECUTIVE OFFICE OF
THE PRESIDENT
OFFICE OF MANAGEMENT
AND BUDGET

REGULATORY PROGRAM OF THE UNITED STATES GOVERNMENT

April 1, 1986 - March 31, 1987

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THE REGULATORY MESSAGE OF THE PRESIDENT

TO THE CONGRESS OF THE UNITED STATES:

This publication of the *Regulatory Program of the United States Government* is the second in an annual series begun last year as part of our effort to improve the management of regulatory activity within the Executive branch. A major goal of this publication is to provide the public and the Congress with a greater opportunity to learn about and evaluate our regulatory priorities and procedures.

The *Regulatory Program* describes the 523 most significant regulatory activities planned for the year ending March 31, 1987. Over the coming months and years, the Director of the Office of Management and Budget will report periodically on the agencies' progress in carrying out these initiatives.

Federal regulation is one of the most important and costly activities of government, yet it has been managed even less systematically than government spending. Last year, I established the *Regulatory Program* to complement the other programs I put in place during 1981 to improve the quality and responsiveness of our regulatory efforts.

We have too little information on the benefits provided by the regulations we promulgate each year and even less information on the benefits of those already in effect. By developing better information on benefits, we can improve the setting of priorities that truly meet the Nation's needs. The *Program* will help us do that.

Moreover, we have only rough estimates of the total costs of regulations—ranging between $50 billion and $150 billion each year. While the American people pay such regulatory costs, they tend to be hidden in the prices consumers pay for goods and services. These costs could grow even larger, as there will be a tendency to maintain government programs through regulatory means when funding is not available.

Today, more than ever, it is essential for us to coordinate regulatory activity among the agencies, to increase accountability for regulatory programs, and to ensure that the most significant regulatory activities are given priority and are properly managed. Only through a coordinated executive review can regulatory activities provide the greatest real benefits to society as a whole.

Of course, this *Regulatory Program* by itself cannot ensure that all regulation will be well-conceived and beneficial to society. It can, however, highlight important regulatory activities under consideration. Thus, this *Regulatory Program* is an important addition to our wide-ranging efforts of regulatory oversight and review—designed to make government regulation the servant, not the master, of the American people.

RONALD REAGAN

THE WHITE HOUSE

THE REGULATORY PROGRAM IN BRIEF

THE REGULATORY PROGRAM IN BRIEF

I. INTRODUCTION

This publication of the *Regulatory Program of the United States Government* is the second in an annual series that documents the Administration's most significant regulatory activities. These regulatory activities, policies, goals, and programs are all authorized by statutes passed by Congress. The relative priority for implementation of these statutory programs is usually determined by the Executive branch. This report highlights the most significant of them for inclusion in this program. Before the Regulatory Program, there was no statement of the regulatory priorities of the Executive branch.

President Reagan initiated the Regulatory Program on January 4, 1985, when he signed Executive Order No. 12498. One of the purposes of the Program is to provide the public, the Congress, and government officials with an understanding of the most important issues in forthcoming regulatory decisions. This is done by describing in detail, early in the regulatory process, what the most significant regulatory actions are, what will occur during the Program year concerning them, and what information is needed in order to make informed decisions about them. The Regulatory Program will increase the opportunity for Executive branch departments and agencies, the Legislative branch, and the public to provide meaningful comment during the rulemaking process.

In addition to the "Regulatory Message of the President," this year's Program contains the "Regulatory Program in Brief," and the "Regulatory Program by Agency." This portion, the "Regulatory Program in Brief," contains three chapters in addition to this introduction: a chapter on highlights of the Regulatory Program; a chapter on improving coordination and consistency in risk regulation; and a chapter on the efficient allocation of regulatory rights and resources.

THE 1986 REGULATORY PROGRAM

Regulation can be a powerful tool for solving social and economic problems. It can reduce unintended harmful effects of industrial production. It can help promote competition or curb monopolistic behavior. It can help remedy deficiencies of the free market.

Regulation can also be expensive. We have only estimates of the total costs of regulation. Researchers have calculated that the costs for regulation are between $50 billion and $150 billion per year (1985 dollars), an amount approximately equivalent to between 6 and 18 percent of *all* annual Federal outlays. Regulatory costs average between $570 to $1,700 per household each year. Because regulation is so expensive and because it may have pervasive and unintended effects, it is essential that we regulate wisely and efficiently. All too often regulations fail to solve the problems they were designed to address, or fail to solve them as efficiently as they could, and yet they impose significant costs on the public. At times, regulations fix one problem, but in so doing create new ones. Sometimes, regulations address the lesser risk and ignore the greater.

Almost all Federal departments and agencies are involved in drafting, issuing, and enforcing rules. In 1985 alone, the Office of Management and Budget (OMB) received 2,211 new regulations for review under Executive Order No. 12291. The Executive branch coordinates these Federal regulatory activities and seeks to ensure that each regulatory action is carried out in the most efficient way, in part through centralized oversight and review of proposed new agency regulations. Every one of the last four Administrations, both Democratic and Republican, has recognized the need to do this and each has instituted increasingly formal review requirements. President Reagan has centralized oversight and regulatory review under Executive Order No. 12291 and under the regulatory planning process of Executive Order No. 12498. Together, this Administration's review initiatives have been successful in ensuring that regulations are well thought out and worth their cost. This oversight provides the means to prevent inefficient rules from being adopted by bureaucratic momentum alone, or as the result of pressure from special interest groups or businesses that want to confer benefits on a few at the expense of many.[1]

Although earlier Administrations understood and sought to address some of the problems of agency regulatory activities, the centralized review required by President Reagan has been the key to successfully addressing those problems. Few today would disagree that the regulatory activities of the Executive branch are better managed and more efficient, and the President is better able to carry out his constitutional responsibility to guide and supervise his appointees.

[1]See Statement of James C. Miller III, Director, Office of Management and Budget, before the Subcommittee on Intergovernmental Relations, Committee on Governmental Affairs, United States Senate, on Executive Regulatory Oversight, January 28, 1986.

In the highlights chapter that follows, we discuss some examples of recent and forthcoming regulatory measures that are particularly noteworthy. We explain a number of actions that represent significant accomplishments embodying the President's regulatory principles. Also, we point out major issues raised by some forthcoming regulatory activities that we expect will be of interest to Congress and the public.

In the third chapter of the "Regulatory Program in Brief," we raise some very important and recurring regulatory issues. A major concern of this Administration is to make sure the government uses all the tools at its disposal to help Americans live as well and as long as possible. Over the past 15 years, regulation has been increasingly used as a way to reduce risks in order to extend lives. Of course, this is not the only way we can extend lives. We can improve health care, and we can raise living standards. Regulation and health care improvements are expensive, however. If we do not spend our resources on health care improvements and reduce risks by regulating wisely, we could actually lower our standard of living and not extend lives as much as we are able.

Research has shown that there is a direct correlation between income and life expectancy.[2] As incomes rise, our diets improve, we live in better housing, and we can afford to eliminate some kinds of risks. However, we cannot eliminate death. Because the amount of money we can spend to reduce risks will always be limited, we can extend the most lives only if we reduce risks in the most cost-effective way possible. If we spend money or impose costs that reduce risks inefficiently, we will waste opportunities to save or extend lives and we will reduce our standard of living from what it could be if we were efficient. It is not enough that a regulation simply reduces risk; a regulation must reduce risks in the most efficient way. Otherwise, society would be better off making different kinds of life-extending investments.

In Chapter III, we show why risk assessment and risk management activities at Federal agencies need to be improved. Often these risk assessments so overstate risks that the chance that they approximate actual risks is remote. This overstatement—and the uncertainty as to the degree of overstatement—can cause policymakers to overestimate the benefits of particular actions and to select the wrong targets for reducing risk. An Office of Technology Assessment study estimated that about 65 percent of all cancers are caused by diet and smoking, while only 2 and 4 percent of all cancers are caused by environmental and occupational exposures.[3] Although environmental and occupational regulation can help to improve our society, we must keep in mind that they may only reduce a small fraction of the cancer risks we face, even if completely successful. And, especially because these risks may be relatively small, it is important that we select the most efficient measures for regulating environmental and occupational risks. Rational decisionmaking is undercut by overstating risks. If a margin of safety or other factor is to be considered in decisionmaking, it should be explicitly stated.

Another problem with overstated risk assessments is that they can lead decisionmakers to prefer regulatory action over other kinds of life-extending alternatives, and they can encourage or effectively require public officials to apply stringent regulatory measures that may actually have little or no risk-reducing benefits. Once again, to the extent we overemphasize regulation or regulate too stringently, we are wasting society's resources that, if spent elsewhere, would save more lives. By providing policymakers with enough information to assess fully the real risks and consequences of regulatory proposals, they will be better able to make decisions that will maximize social welfare.

The "Regulatory Program in Brief" closes with Chapter IV. In it, we discuss some opportunities for increasing the economic efficiency of our regulations by allowing the free exchange of private rights or obligations that have been created by the government. In one instance, the Department of Transportation has issued a rule to allow the sale of landing and takeoff rights or "slots" at congested airports where the number of slots must be limited because of safety concerns. This rule will help to increase competition and make sure that these scarce slots are used to serve the routes most wanted by travelers. This rule replaces—wisely in our view—a procedure where the air carriers that have slots or the Federal government decided who should have and use these slots. Also, in Chapter IV, we outline some of the Environmental Protection Agency's efforts to study opportunities for expanding its programs that allow trading of emission rights. With proper safeguards, this will allow industrial plants and the public to meet environmental standards in the least costly way.

LAST YEAR'S REGULATORY PROGRAM

The 1985 "Regulatory Program in Brief" set forth the President's regulatory principles and guidelines (reprinted in Table 1) to be used by the agencies in designing and issuing regulations and by the Office of Management and Budget in reviewing and coordinating issues. It described in detail three broad functions of regulation: (1) the protection of health, safety, and the environment; (2) the regulation of markets; and

[2]Statistics show that Americans are living longer. Of course, as we eliminate some kinds of risks, other types of life-threatening risks associated with old age, such as heart disease and cancer, grow in importance. This should not be taken as a sign that our Nation's health status has declined. Actually, it is a sign that it has improved.

[3]See R. Doll and R. Peto, "The Causes of Cancer: Quantitative Estimates of Avoidable Risk of Cancer in the United States Today," *Journal of the National Cancer Institute* (June 1981), p. 1256. Although earlier studies presented higher estimates, the authors reviewed those studies. They also carefully documented their own assumptions and subjected their study to extensive peer review.

(3) the management of Federal funds and resources. It also described how the President's regulatory principles and regulatory guidelines were applied to each function, citing illustrative examples drawn from the significant regulatory actions (SRAs) in the "Regulatory Program by Agency."

TABLE 1

A. Regulatory Principles

Executive Order No. 12291 provides in Section 2 that, "to the extent permitted by law,

"(a) Administrative decisions shall be based on adequate information concerning the need for and consequences of proposed government action;

"(b) Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society;

"(c) Regulatory objectives shall be chosen to maximize the net benefits to society;

"(d) Among alternative approaches to any given regulatory objective, the alternative involving the least net cost to society shall be chosen; and

"(e) Agencies shall set regulatory priorities with the aim of maximizing the aggregate net benefits to society, taking into account the condition of the particular industries affected by regulations, the condition of the national economy, and other regulatory actions contemplated for the future."

B. Regulatory Policy Guidelines

Section 1 of Executive Order No. 12498 reaffirmed the following guidelines for rulemaking agencies originally set forth in 1983:

"1. Regulations should be issued only on evidence that their potential benefits exceed their potential costs. Regulatory objectives, and the methods for achieving these objectives, should be chosen to maximize the net benefits to society.

"2. Regulation of prices and production in competitive markets should be avoided. Entry into private markets should be regulated only where necessary to protect health or safety or to manage public resources efficiently.

"3. Federal regulations should not prescribe uniform quality standards for private goods or services, except where these products are needlessly unsafe or product variations are wasteful, and voluntary private standards have failed to correct the problem.

"4. Regulations that seek to reduce health or safety risks should be based upon scientific risk-assessment procedures, and should address risks that are real and significant rather than hypothetical or remote.

"5. Health, safety, and environmental regulations should address ends rather than means.

"6. Licensing and permitting decisions and reviews of new products should be made swiftly and should be based on standards that are clearly defined in advance.

"7. Qualifications for receiving government licenses should be the minimum necessary. Where there are more qualified applicants than available licenses, the licenses should be allocated by auction or random lottery rather than by administrative procedures.

"8. Where regulations create private rights or obligations, unrestricted exchange of these rights or obligations should be encouraged.

"9. Federal regulations should not preempt State laws or regulations, except to guarantee rights of national citizenship or to avoid significant burdens on interstate commerce.

"10. Regulations establishing terms or conditions of Federal grants, contracts, or financial assistance should be limited to the minimum necessary to achieving the purposes for which the funds were authorized and appropriated."

As with last year, the main part of the Regulatory Program for 1986 is the description of significant regulatory actions. Last year, 17 agencies submitted 544 SRAs, including 7 interagency SRAs. For 1986, five additional agencies are participating in the Program: the Department of Defense, the Department of Justice, the Advisory Council on Historic Preservation, the Council on Environmental Quality, and the National Aeronautics and Space Administration. There are 523 SRAs this year. Some of them update the progress of SRAs published last year and some are new SRAs.

The Regulatory Program provides an annual "snapshot" of the status of the most significant regulatory activities of the rulemaking departments and agencies. According to last year's SRAs, 542 regulatory actions[4]—final rules or proposals—were scheduled to occur within the 1985 Program year (April 1, 1985–March 31, 1986). As of April 15, 1986, OMB had received for review under Executive Order No. 12291 only 240 of these actions, however. Furthermore, the actions that were submitted were late by an average of 127 days, and those that had not been received were late by an average of 155 days as of April 15,

[4]The number of regulatory actions does not correspond to the number of SRAs (544) because (1) some SRAs included more than one regulatory action (e.g., a proposed *and* a final rule) during 1985, and (2) some SRAs did not include any regulatory action during 1985.

1986. As a result, increased efforts to meet the deadlines published in this year's Regulatory Program are underway. A tracking system to compare scheduled deadlines with what actually happens has been established.

Further details about the number of rules submitted to OMB for review under Executive Order No. 12291 and their dispositions are presented in the annual report on the activities under President Reagan's Executive Order No. 12291 for the year ending December 31, 1985. This report is located in the Appendix and will be a regular feature of the Program in future years.[5]

FEDERALISM

One subject we mentioned last year in the Regulatory Program was "Federalism," the appropriate role of the Federal government vis-à-vis State and local governments. The President is committed to restoring the principle of Federalism to American government. In his first inaugural address, the President announced his intention to "curb the size and influence of the Federal government and to demand recognition of the distinction between the powers granted to the Federal government and those reserved to the States or to the people." Removing unnecessary and burdensome regulations that affect State and local governments is essential to the recovery of Federalism, as is ensuring that any new regulations are consistent with the constitutional principle of Federalism.

The Presidential Task Force on Regulatory Relief took particular care to ensure that agencies adhere to the regulatory guidelines on Federalism[6] when they develop or review regulations affecting State and local governments. A report issued by the Task Force in 1982 described regulatory relief accomplishments that saved State and local governments between $4 and $6 billion in total investment costs and $2 billion in annually recurring costs. Since 1982, the Administration has taken many additional regulatory actions designed to minimize burdens on State and local governments.

Last year, the Domestic Policy Council appointed a Working Group on Federalism to prepare a "basic, Administration-wide strategy for rooting Federal law and regulations in basic constitutional federalism principles." In February, the Working Group submitted to the Domestic Policy Council a Statement of Federalism Principles to clarify the relationship between Federal, State, and local governments and to provide guidance to the Administration in the promulgation of new policies or regulations and in the reform of existing ones. The following principles were signed by the President on April 8, 1986, and transmitted to members of the Cabinet on May 19, 1986:

1. Federalism is rooted in the knowledge that our political liberties are best assured by limiting the size and scope of the national government.
2. The people of the States created the national government when they delegated to it those enumerated governmental powers relating to matters beyond the competence of the individual States. All other sovereign powers, save those expressly prohibited the States by the Constitution, are reserved to the States or to the people.
3. The constitutional relationship among sovereign governments, State and national, is formalized in and protected by the Tenth Amendment to the Constitution.
4. The people of the States are free, subject only to restrictions in the Constitution itself or in constitutionally authorized Acts of Congress, to define the moral, political, and legal character of their lives.
5. In most areas of governmental concern, State and local governments uniquely possess the constitutional authority, the resources, and the competence to discern the sentiments of the people and to govern accordingly. In Jefferson's words, the States are "the most competent administrations for our domestic concerns and the surest bulwarks against antirepublican tendencies."
6. The nature of our constitutional system encourages a healthy diversity in the public policies adopted by the people of the several States according to their own conditions, needs, and desires. In the search for enlightened public policy, individual States and communities are free to experiment with a variety of approaches to public issues.
7. Acts of the national government—whether legislative, executive, or judicial in nature—that exceed the enumerated powers of that government under the Constitution violate the principle of federalism established by the Founders.
8. Policies of the national government should recognize the responsibility of—and should encourage opportunities for—individuals, families, neighborhoods, local governments and private associations to achieve their personal, social, and economic objectives through cooperative effort.
9. In the absence of clear constitutional or statutory authority, the presumption of sovereignty should rest with the individual States. Uncertainties regarding the legitimate authority of the national government should be resolved against regulation at the national level.
10. These principles should guide the departments and agencies of the national government in the formulation and implementation of policies and regulations.

During 1986, Executive branch agencies and the Office of Management and Budget will work with the Working Group on Federalism to identify existing regulations that are inconsistent with the President's Federalism principles. Next year's Regulatory Program will report on these activities.

[5]The commitment to publish a complete annual accounting of Executive Order No. 12291 activities is stated in the procedures of the Office of Information and Regulatory Affairs.

[6]Regulatory Policy Guidelines 9 and 10 in Table 1 expressly address the President's Federalism concerns.

EXECUTIVE OVERSIGHT AND THE REGULATORY PROGRAM

Executive Order No. 12291, signed on February 17, 1981, established President Reagan's regulatory principles and directed each agency covered by the Order to abide by these principles when developing regulations, to the extent permitted by law. This Executive Order also directed these agencies to submit drafts, before issuance, of proposed and final rules and drafts of regulatory impact analyses to OMB for review for consistency with the President's regulatory principles. Executive Order No. 12498, signed on January 4, 1985, initiated the Regulatory Program, and enhanced the regulatory review process by setting forth the Administration's priorities and describing the most important regulatory efforts that the Executive branch plans for the coming Program year.

The centralized executive oversight of regulatory agencies continues to evolve. OMB has recently refined its review procedures in an effort to ensure that the process meets the highest standards of fairness. On January 28, Office of Management and Budget Director James C. Miller III described his policies concerning reviews under Executive Order No. 12291 and announced that he was considering further refinements to those policies. On June 13, 1986, the Administrator of the Office of Information and Regulatory Affairs (OIRA), Dr. Wendy L. Gramm, announced additional procedures providing for disclosure of other matters related to OIRA's reviews, e.g., that OIRA will make available, upon written request made to OIRA after publication of a proposed or final rule in the *Federal Register*, copies of any draft of such rule submitted for OIRA's review under Executive Order No. 12291.

The review, planning, and coordination of regulatory activity also aids the Executive branch in carrying out its responsibilities in budgetary and paperwork areas. The Paperwork Reduction Act of 1980[7] authorized OMB to review, coordinate, and approve or disapprove information collection requests proposed by departments and agencies and made the reduction of paperwork one of OMB's major responsibilities. The goals of both the Regulatory Program and the paperwork reduction program are similar: to minimize the burden on the public of regulatory and paperwork costs associated with the provision and management of necessary government services; the protection of health, safety, and the environment; or the promotion of competitive markets. Paperwork and regulation are almost always intertwined. Therefore, in order to reduce the paperwork burden, regulatory burdens often must be reduced, and vice versa. For example, as a consequence of the review of its paperwork burden, the Occupational Safety and Health Administration (OSHA) has proposed to revise several regulations to convert its current paperwork requirements to less burdensome certifications. OSHA will thereby achieve a reduction in the paperwork burden of approximately 8 million hours with no reduction in occupational health or safety. Similarly, the Department of Agriculture will review its National School Lunch Program regulations to evaluate alternative ways of collecting data to combat waste, fraud, and abuse, while reducing the reporting and recordkeeping burden imposed on the public school administrators. Because of these interrelationships, OMB could not carry out its paperwork reduction responsibilities effectively without reviewing the underlying agency regulations nor could it perform its regulatory review responsibilities without considering the paperwork that would accompany these regulations.

Both Executive Order No. 12291, issued on February 17, 1981, and the Paperwork Reduction Act, which took effect on April 1, 1981, provide the framework for coordination of paperwork and regulatory reviews. Activity under Executive Order No. 12291 and the Paperwork Reduction Act has been brisk since. From 1981 to 1986, the Office of Information and Regulatory Affairs has reviewed over 20,000 proposed information collections, over three-quarters of which were reporting and recordkeeping requirements contained in or mandated by agency regulations.

IMPLEMENTATION OF THE REGULATORY PROGRAM

Pursuant to Executive Order No. 12498 and the implementing procedures (OMB Bulletin No. 86–4), agency heads are responsible for carrying out a regulatory planning process for their agencies, setting regulatory goals and priorities, applying the Administration's policies to these regulatory programs in a way that is consistent with all relevant statutes, and implementing their plans on schedule. The Administration's annual Regulatory Program describes some of the choices, issues, objectives, and goals the agency heads must face in the exercise of their regulatory responsibilities.

Agency decisions concerning particular proposed or final rules will be made pursuant to the requirements of the Administrative Procedure Act (APA) and other applicable laws. The APA requires that agency rulemaking decisions must be made on the basis of the factual record compiled by the agency. By stating early in the regulatory process, often prior to rulemaking, the general policy considerations and the critical factual issues that the agency heads believe will be important in their decisions, the Regulatory Program should increase both the public's opportunity to provide meaningful comments during the rulemaking process and Congress' opportunity to provide oversight to these regulatory programs.

To comment on an SRA, send your comments to the agency considering or conducting it. If timely, your

[7]Public Law 96–511 (December 11, 1980), 44 U.S.C. 35.

comments will be considered during the public comment period that follows the publication of a notice of proposed rulemaking (NPRM) or advance notice of proposed rulemaking (ANPRM). You can usually find out when an NPRM or ANPRM is planned by consulting the "Regulatory Program by Agency" or by contacting the person listed there.

Under Executive Order No. 12498, the Office of Management and Budget provides procedures for assembling the Regulatory Program, coordinates the process, and identifies disagreements among agencies or inconsistencies with the Administration's policies and regulatory principles. OMB will review regulations submitted under Executive Order No. 12291 for consistency with the Program.

If you wish to comment on the Regulatory Program, please send your comments to Dr. Wendy Lee Gramm, Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503. If your comments address a particular SRA, however, you must send them to the relevant agency during the rulemaking process in order for them to be considered.

II. SOME HIGHLIGHTS OF THE CURRENT YEAR

This chapter presents eight recent or forthcoming regulatory actions that we believe particularly warrant the reader's attention. They include completed or proposed actions that are particularly important because they set the direction for major Federal regulatory programs. All of the Administration's significant regulatory actions (SRAs) are provided in the "Regulatory Program by Agency."

MINIMUM PROPERTY STANDARDS

1985 marked the end of an era for the Minimum Property Standards (MPS), a half-century-old regulatory program that prescribed building standards for housing that received Federal assistance. The MPS are an example of a regulatory program made obsolete by progress. When initiated in the 1930s, almost no communities had building codes. Today, nearly all sizable communities do. As a result, a builder who wanted, for example, to be able to sell a house to a buyer with a mortgage insured by the Federal Housing Administration might have to build the house to meet two different sets of standards: the building code applicable locally and the Federal MPS. This made houses more expensive to build, since, wherever a standard in the local code and the corresponding standard in the MPS differed, the house would have to meet the more demanding of the two standards. This added burden was not limited to houses financed with Federal assistance, because most builders, not knowing in advance which houses would be sold to a buyer with a federally insured mortgage, built all their houses to the standards of both the MPS and the local code. Furthermore, some small builders did not build houses that were eligible for Federal assistance, since the burden of staying familiar with two different sets of building standards was especially difficult for them.

In September 1985, the Department of Housing and Urban Development (HUD) issued final rules deferring to the local codes and deregulating the MPS for one- and two-family residential structures. Under these new rules, HUD, instead of using the MPS, now relies on a national model building code or on an existing State or local building code that is comparable to a national model code. In April 1985, the Farmers Home Administration (FmHA) of the Department of Agriculture, which has also prescribed the MPS for housing it financed, proposed similar changes. Final rulemaking action on FmHA's proposal is expected this year. The MPS had been selected for review by the Presidential Task Force on Regulatory Relief. Together the actions of HUD and FmHA should contribute to lowered housing costs and an increase in the supply of housing.

BILINGUAL EDUCATION

In June 1986, the Department of Education issued regulations providing for significant changes in the operation of bilingual education programs receiving Federal funding. A major goal of these regulations is to ensure that children with limited English proficiency obtain proficiency in English as quickly as possible so that they can participate effectively in regular education programs. Most importantly, the regulations emphasize local education agency discretion in how bilingual education is conducted.

This follows an action taken as a result of a recommendation by the President's Task Force on Regulatory Relief. The earlier action withdrew a proposal, issued during the previous Administration under Title VI of the Civil Rights Act, that would have required all schools with a certain number of bilingual students to teach those students in their native language. The recent action removes constraints on teaching methods that previously were a condition for receiving Federal funds under the Department of Education's Bilingual Education program.

Local education agencies will be able to tailor bilingual education programs to the needs of their students better. For example, a school district enrolling many students with the same native language may decide to provide native-language instruction in most subjects. A district having students with many different native languages could use intensive courses in English with only minimal native-language instruction and subsequently teach subjects in English. The previous Federal regulations emphasized a single method of instruction and did not adequately inform

school districts of the extent of flexibility the law provides to adapt teaching methods to local needs and circumstances.

OIL AND GAS LEASES ON THE OUTER CONTINENTAL SHELF

In March 1986, the Minerals Management Service of the Department of the Interior proposed revisions to regulations that apply to holders of Federal oil and gas leases on the Outer Continental Shelf (OCS). The proposal would eliminate redundant, burdensome, unnecessary, and counterproductive requirements imposed in current rules; introduce more performance standards; introduce new requirements; and simplify the language of the rules. Performance standards allow oil and gas producers to use the least costly and most efficient methods to achieve the safety and environmental protection objectives of the regulations.

Final action on the proposed rules is scheduled for fall 1987. The new rules, when implemented, would produce annual cost savings of approximately $14 million. These savings exclude potential savings from newly developed technologies that meet the new performance standards, because the savings cannot be readily quantified. The rules are expected to facilitate safe and environmentally sound exploration and development on the OCS and in so doing reduce the Nation's reliance on energy imports.

REGULATIONS IMPLEMENTING RCRA AMENDMENTS

In 1984, Congress amended the Resource Conservation and Recovery Act (RCRA), which requires the Environmental Protection Agency (EPA) to regulate hazardous wastes. The amendments are expected to cost the public between $5 and $10 billion per year. The legislation is unusual in that, in many sections, it defines in considerable detail what technical standards must be and what adverse environmental consequences must be avoided. For example, the amendments not only state that EPA must require two or more liners for all new hazardous waste landfills, but they specify the construction material and thickness that shall be deemed to satisfy the technical standard for the bottom liner.

In addition to being quite specific in many ways, the amendments set tight deadlines for carrying out many of the provisions in the statute, with severe consequences if EPA fails to meet them. These consequences or "hammers," as they are called, are intended to require EPA to emphasize certain regulations and call industry's attention to these priority regulations. The amendments require that all hazardous wastes be banned from disposal in landfills unless EPA proves by specific dates that a waste will never migrate from a land disposal unit or that it is treated so that it is no longer hazardous. However, if land disposal is banned, there may be no place for hazardous wastes or treated residuals to be sent, and many industries may have to stop production of valuable and necessary goods or dispose of them in ways that present even greater risks. EPA is now working to meet the first of these land disposal restriction deadlines.

The amendments do provide EPA flexibility in some important sections. One such area is the regulation of over one million underground tanks that store petroleum and chemical products. Although the statutory deadlines for these regulations are tight—EPA must have full regulations in place by August 1988—EPA may consider a reasonable range of regulatory alternatives in meeting the statutory goals. EPA is evaluating the effectiveness of a variety of technologies to determine the most efficient approach. In addition, EPA is working closely with State and local governments that have experience regulating underground tanks.

Congress also expanded EPA's authority to require facilities to clean up leaks or spills of hazardous waste. Here, EPA must develop regulations that are flexible enough to permit different actions for widely differing wastes and environmental conditions.

FDA REGULATION OF METHYLENE CHLORIDE

In December 1985, the Food and Drug Administration (FDA) of the Department of Health and Human Services issued a proposal to ban methylene chloride as a propellant in hair spray while allowing its use as a decaffeinating agent in coffee. This proposal is significant because it establishes an interpretation of the Delaney Clause, a statutory provision that some previously interpreted as a "zero-risk" requirement. In other words, some believed it required the FDA to ban the use of any food additive even if it contained only infinitesimal amounts of a substance found by a single experiment to cause cancer in an animal exposed to much larger doses. For the first time, the FDA proposed to adopt a *de minimis* interpretation of the Delaney Clause.

The *de minimis* doctrine is a well-established legal principle. As applied to the FDA implementation of the Delaney Clause, it means that a food additive that poses an insignificantly small risk of cancer need not be banned. The need for some interpretation of the Delaney Clause has become ever more important as advances in analytical chemistry have permitted the detection of infinitesimally small amounts of substances. The FDA specifically found that the risk to humans from the use of methylene chloride in decaffeinating coffee was so small that it effectively posed no risk. Rulemaking on this issue is expected to be completed by the end of 1986.

EPA REGULATORY INVESTIGATION OF METHYLENE CHLORIDE

The Environmental Protection Agency is also currently investigating the possible regulation of methylene chloride and other chlorinated solvents. One million workers, in addition to large numbers of other people, are exposed to methylene chloride by inhalation. At some higher concentrations, it has been found to cause cancer in rats and mice. Two issues are of special importance in EPA's regulatory investigation of methylene chloride: the consideration of chemicals that are substitutes for methylene chloride and regulation under alternative statutory authorities of EPA and other agencies.

A number of other chlorinated solvents can be readily substituted for methylene chloride in some uses. Some of these alternative solvents have known toxicities that are similar to that of methylene chloride. Therefore, placing controls on methylene chloride without regard for substitute chemicals could lead to no risk reduction at all, or even an increase in risk, as other toxic chemicals are used in place of methylene chloride. Because of this, EPA is investigating the feasibility of an integrated rulemaking that simultaneously would consider a number of solvents, including methylene chloride, that are close substitutes for each other.

Because people can be exposed to methylene chloride (or its substitutes) as workers, as consumers, or in the environment, the substance falls within the regulatory authority of the Occupational Safety and Health Administration, the Consumer Product Safety Commission, and the Food and Drug Administration, as well as the EPA. EPA recognizes that this will require coordination and consistency to realize the most efficacious regulatory regime. EPA will also be evaluating which of several authorities to use if it decides to regulate methylene chloride. The Toxic Substances Control Act, the Clean Air Act, the Safe Drinking Water Act, the Clean Water Act, and the Resource Conservation and Recovery Act all provide authorities that might apply to methylene chloride.

BAN ON HOMEWORKERS IN CERTAIN INDUSTRIES

In the early 1940s, the Department of Labor (DOL) reasoned that it was infeasible to enforce effectively the minimum wage and overtime provisions of the Fair Labor Standards Act for persons working at home. At the time, unions contended that underpaid homeworkers had an unfair competitive advantage over union members. The Department determined that the only effective way to protect workers in certain industries from being exploited by their employers was to prohibit them from working at home. Consequently, employment of homeworkers was prohibited in seven specified industries.

During the 1970s and early 1980s with the increased participation rate of women in the labor force, including women with young children, working at home began to make more sense, particularly in rural areas. It also made no sense to many people that they could legally work at home in any job except in seven industries: women's apparel; jewelry; gloves and mittens; knitted outerwear; buttons and buckles; handkerchiefs; and embroideries. Why should people who want to work at home be able to make a man's jacket but not a woman's? In 1984, DOL issued new regulations lifting the ban for knitted outerwear, one of the seven industries in which the demand for homework was the greatest. The new rules adopted an innovative certificate program designed to assure enforcement of the minimum-wage laws. To participate in the program and be allowed to employ homeworkers in these industries, a firm must provide the Department with its name, mailing address, and physical location. In addition, employees must keep records of their earnings and hours and must file them with their employers for inspection for minimum-wage violations by DOL personnel. After 1½ years of experience with the knitted outerwear industry, the Department has decided to consider changes for the remaining six industries.

Lifting the prohibition, while instituting basic safeguards, could have important advantages. First, employment opportunities would be expanded for those workers unable or unwilling to commute to factories. Second, families would be strengthened by the greater contact between parents and children and reduced financial pressures. Third, enforcement of the Fair Labor Standards Act may actually be improved, because DOL has knowledge of homeworker employment, whereas previously, because it was illegal, home employment was concealed. Finally, consumers of products produced by homeworkers may benefit from lower prices, because homeworker production can be a more efficient system of production.

BIOTECHNOLOGY REGULATION

Last year's Regulatory Program contained an entry for regulating the products of biotechnology, for which several Federal agencies have substantial responsibility. In June, these agencies published a final policy statement that describes how they intend to carry out these responsibilities.

Biotechnology refers to the productive use of living things or their byproducts, and recent advances in molecular biology have dramatically expanded our ability to find new ways to apply it. The most immediate applications for this new technology are in agriculture and medicine—for example, human insulin needed by diabetics and screening tests for the AIDS virus. Other applications in food processing, chemical production, and waste disposal will follow.

A focus of public concern, however, has been that biotechnology may present some novel health and environmental risks. Ten years ago, the National Institutes of Health, through its Recombinant DNA Advisory Committee (RAC), issued guidelines to minimize

these risks. Today, the concern has not vanished, but experts believe most of the risks are neither very novel nor beyond our ability to manage.

The Administration convened a cabinet council working group in 1984, to review and coordinate Federal regulation of biotechnology, building on RAC's experience. After considerable discussion and public comment, the product of the working group's efforts has recently been published in the form of a coordinated framework for biotechnology regulation.

One of the conclusions of the working group was that no new statutory authority was needed to regulate biotechnology. After examining the various statutory authorities available to regulate both biotechnology research and commercial applications, the working group found that these statutes were adequate to control any unreasonable risks that might arise.

A second major feature of the framework developed by the working group is its reliance on individual reviews of certain biotechnology products. With the rapidly evolving state of knowledge about biotechnology, in some areas it is not possible to write general rules that are adequately protective and at the same time sufficiently flexible. On the other hand, requiring reviews for all products is both unnecessary and impossibly expensive. The framework therefore describes generally how those individual reviews can be focused. A special effort will be made to review field applications of living organisms that either are suspected of being pathogenic or are sufficiently novel to raise questions about their behavior in the field.

An important coordinating mechanism set up by the working group is the Biotechnology Science Coordinating Committee. This committee, comprising top officials from the key regulatory agencies as well as the science agencies sponsoring research in biotechnology, is designed to ensure scientific consistency among Federal agencies.

The biotechnology framework is an excellent example of timely and effective coordination of regulatory action. Implementation of the framework will require rulemaking by EPA and the Department of Agriculture. Accordingly, this year's program includes SRAs from those two agencies describing upcoming rules.

III. IMPROVING COORDINATION AND CONSISTENCY IN RISK REGULATION

Many Federal agencies direct major regulatory programs at reducing the risks of illness, injury, or death. These regulatory programs are carried out, for example, by the Environmental Protection Agency, the Food and Drug Administration, the Consumer Product Safety Commission, and agencies of the Departments of Agriculture, Labor, and Transportation. Achieving coordination, consistency, and efficiency within and among these agencies and programs is one of the most important management objectives of the Chief Executive, the President. To this end, President Reagan issued Executive Order No. 12291 that requires that agency heads fully analyze "the need for and consequences of proposed government action," so that they will be able to select regulatory measures that "maximize net benefits to society" to the extent permitted by legislation.

In this chapter, we discuss some of the problems and challenges agencies face in evaluating the benefits of regulating activities that pose risks to society. Section A shows that Federal agencies in the past have promulgated regulations to reduce risks that have widely varying levels of cost-effectiveness, that is, they vary greatly in the cost of reducing a similar amount of risk. This variability suggests that a reallocation of the resources devoted to reducing some risks could prevent more illnesses, injuries, or premature deaths at the same or at even lower costs. A number of factors may contribute to this apparent misallocation of effort and resources in regulatory programs to control risk. Section B discusses one of the most important of these factors—that analyses used to support regulatory actions do not always provide decisionmakers with the most likely estimates of the effects of their decisions on possible regulatory actions. Instead, these analyses can compound numerous highly cautious assumptions and produce estimates that vastly overstate the levels of actual risk we can expect to incur. Section B also discusses some steps recently taken and currently under consideration by the Administration that address the problem of inconsistency in risk regulation.

A. RISKS AND THE COSTS OF REDUCING THEM

Even in doing nothing we always face a risk of death. The average 40-year-old person faces a risk of death of 8 in 1 million every day. (In other words, 8 out of every 1 million 40-year-old persons die every day, on average.) Obviously, some activities present greater risks of death, illness, or injury than others, and people weigh these risks in their daily lives. For example, mountain climbers recognize that the risk of death or injury from scaling a mountain peak is high, but some find this risk an acceptable price to pay for the experience. Similarly, Americans drive or ride in their cars every day, knowing that highway accidents claim tens of thousands of lives each year. They accept these risks in return for convenient transportation. Every American, from mountain climbers to highway commuters, makes decisions daily on whether to accept, and how to manage, risks.

Federal regulators must also assess risks and make decisions on whether and how to manage risks, but the decisions become much more complex, in part because they affect large numbers of people. The goal in managing risks is to provide the greatest net benefits to the general public. To do this, regulators must have a way to compare the effectiveness of different approaches for reducing various risks to society. Without such a comparative, quantitative procedure, the government could spend society's resources on efforts that do not reduce risks efficiently.

This procedure is often divided into two parts—"risk assessment" and "risk management." Risk assessment is a purely scientific process that measures the riskiness of various activities. For example, a risk assessment could tell the mountain climber that his chance of dying on a 2-day climb is greater than 1 in 1,000. And it could tell the automobile user that his risk of dying is 2 in 10,000 each year. What risk assessment cannot tell these people is what they should do about these risks. That is where risk management comes in. Risk management takes the scientific risk assessment and combines it with other information, such as the cost and feasibility of reducing risks, to determine how to reduce risks most efficiently. While individuals often make risk management decisions spontaneously without consciously analyzing the tradeoffs, policymakers must carefully and expressly balance costs and risk reduction benefits to make risk management decisions that will result in net benefits to society.

Table 2 presents the annual fatality risk per million persons engaged in each of 15 activities. The extent of risk varies greatly for these 15 different activities—ranging from 3,000 fatalities per million for smoking to 0.02 fatalities per million people for exposure to radon from uranium mill tailings.[1]

The risks of certain activities may be surprising to some people because some risks that we encounter—and accept—daily are larger than some risks that we fear greatly. The six activities marked with an asterisk in Table 2 were the subject of Federal regulatory actions between 1975 and 1984.[2] Obviously, the level of a risk from an activity was not the sole basis for determining whether to regulate it. For example, exposure to the natural contaminant aflatoxin poses a risk of nine fatalities per million and exposure to the additive saccharin poses a risk of five fatalities per million. Both of these risks are significantly greater than the 0.3 per million risk of DES in cattlefeed or 0.02 per million risk posed by radon in uranium mill tailings, but the latter were recently regulated while the former have not been.[3]

TABLE 2. RISKS OF VARIOUS ACTIVITIES

Activity or cause	Annual fatality risk for every 1 million exposed individuals
1. Smoking (all causes)	3,000
2. Motor vehicle accidents	243
3. Work (all industries)	113
4. Alcohol	50
*5. Using unvented space heater	27
*6. Working with ethylene oxide	26
7. Swimming	22
*8. Servicing single-piece wheel rims	14
9. Aflatoxin (corn)	9
10. Football	6
11. Saccharin	5
*12. Fuel system in automobiles	5
13. Lightning	0.5
*14. DES in cattlefeed	0.3
*15. Uranium mill tailings (active sites)	0.02
From all causes in U.S.	8,695
From cancer in U.S.	1,833

* Indicates that the risk was regulated by the Federal government in the last 10 years. For these activities or causes, the risks in the table are estimates of risk prior to Federal regulation.

Although it may seem logical to try to reduce the largest risks first, this would not result necessarily in the most *efficient* reduction in risks because our ability to reduce risks is not constant; that is, it costs more to reduce some risks than others. Some risks can be reduced at low costs to society; reducing other risks can be very expensive. For example, motor vehicle accidents (the second largest cause of death in Table 2) could be eliminated if driving were prohibited, but, of course, no risk manager would ever ban driving because the costs to society—both economic and noneconomic—would be unacceptable. Clearly, the *magnitude* of risk based on a risk assessment alone does not provide enough information for a risk manager to make an appropriate decision. In deciding whether—or how much—to regulate, a regulatory official must look not only at total risks but also at the risk *reduction* that could be achieved and the costs of doing so. Balancing these factors is the challenge of risk management.

To measure and compare the costs and risk reduction associated with different strategies for controlling risks in a meaningful way, risk managers must use a common "yardstick." Regulators and academics often use the term "cost-effectiveness" of different strategies to mean the costs of reducing a unit of risk. This is usually stated as the "cost per case avoided" or "cost per life saved." The "cases" or "lives saved" used in these cost-effectiveness statistics are *statistical* cases of illness, injury, or death, based on estimates of probabilities that a series of events will occur. In other words, as used in these measures, a life

[1]On average, 8,695 out of every million people in the United States die each year; 1,833 of them die from cancer.

[2]Many regulations have also been issued during this period to address the broader risks in the table such as the risks from work and motor vehicles in general.

[3]The Food and Drug Administration (FDA) proposed lowering the tolerance level of aflatoxin in 1978, but never issued a final rule. The FDA banned saccharin in 1977, but Congress has continually prevented the ban from going into effect.

saved does not represent the avoided death of a specific person, but a reduced probability of death, say by one chance in a million, for a million people.

For each of the six regulations issued by Federal agencies in Table 2, Table 3 presents the average annual cost per case avoided. We calculated these figures by dividing the expected annual cost of each regulation by its expected annual reduction in risk. The cost and risk reduction data are based on published estimates developed by the agencies that issued the regulations or by academicians assessing the effects of these regulations.

TABLE 3. RISK-COST TRADEOFFS FOR SELECTED REGULATIONS

Regulation	Agency	Year issued	Cost per statistical life saved ($ millions)
1. Unvented space heaters	CPSC	1980	$ 0.07
2. Servicing wheel rims	OSHA	1984	0.25
3. Fuel system integrity	NHTSA	1975	0.29
4. Uranium mill tailings (active)	EPA	1983	53.00
5. Ethylene oxide	OSHA	1984	60.00
6. DES ban in cattlefeed	FDA	1979	132.00

NOTE—In 1984 dollars, discounted at 10 percent. Each nonfatal accident requiring hospitalization is treated as equivalent to one-fiftieth of a fatality. This relationship was selected as representative of the willingness-to-pay values for fatality risks relative to injury risks found by research studies. Cancer is counted as a fatality. Cancer latency periods were assumed to be 15 years for lung cancer associated with uranium mill tailings and 10 years for the leukemia and breast cancer associated with ethylene oxide and DES, respectively.

Discounting benefits and costs at 4 percent instead of 10 percent does not affect the conclusion that there are extremely wide variations in cost per statistical life saved between these regulations nor does it affect the cost-effectiveness rankings. Discounted at 4 percent, banning DES in cattlefeed still costs 1,500 times more per statistical life than regulating unvented space heaters.

Comparison of Tables 2 and 3 demonstrates again that a more cost-effective regulation is not necessarily one that addresses the greater risk. For example, the National Highway Traffic Safety Administration's (NHTSA's) fuel system integrity regulation[4] has a far lower cost per case avoided ($290,000) than OSHA's ethylene oxide regulation ($60 million), even though the risk addressed by the OSHA regulation (26 deaths per million people) is greater than the risk addressed by the NHTSA regulation (5 deaths per million). To reduce the probability of death by 5 chances in a million per year, or, in other words, to save 5 statistical deaths per year per million persons, the NHTSA regulation would cost $1.5 million and the OSHA regulation would cost $300 million.

We also note that there is a very great range in the cost per case avoided for different regulations. Table 3 shows that the cost per life saved is over 1,800 times greater for banning the use of DES (a growth stimulant in cattlefeed) than for regulating unvented space heaters.

This large difference in cost-effectiveness for different regulations indicates that we might have provided greater risk reduction at the same or lower total costs by regulating other, more cost-effective risks. Similarly, some activities probably should be regulated more stringently than they are now, and others less. For example, imagine that there are two types of activities that can be regulated—activity A that costs $25 million per statistical life saved and activity B that costs $250,000 per statistical life saved. Spending $100 million less on activity A would increase predicted risk by 4 deaths. Applying that $100 million to activity B would reduce risk by 400 deaths. Consequently, with no change in total outlays for risk reduction, 396 more lives could be saved.

Some would argue that we need not make these tradeoffs at all, but should pursue all opportunities to reduce risk. Of course, it would be desirable to eliminate all risks that technically could be eliminated. Such a policy, however, would quickly run into resource constraints. For example, if all 400,000 cancer deaths per year[5] could be eliminated at a cost per expected life saved equal to the cost of reducing the risk of cancer death from occupational exposure to ethylene oxide, the annual costs to society would be almost $24 trillion ($60,000,000 × 400,000)—a figure about 6 times the Gross National Product.

Cost-effectiveness information also can be useful for deciding if regulation is desirable at all and how much to regulate. Risk managers can (subject to statutory constraints) determine which regulatory actions would benefit society the most by comparing the cost-effectiveness of each with the amounts that individuals are willing to pay to reduce particular risks (or, conversely, the amount of money they must receive in return for increasing their risk). As discussed at the beginning of this chapter, in their everyday behavior, individuals demonstrate that they do not seek to avoid risks regardless of cost. For example, they participate in sporting activities and engage in home repairs despite the risks associated with them. Many people select small cars in preference to large cars despite the increased risk associated with small cars. Some workers accept riskier but higher paying jobs in preference to safer but lower paying employment.

Several studies have estimated the wage premiums workers require for accepting jobs with increased risk, and they have estimated the prices consumers

[4]This rule attempts to prevent fires resulting from motor vehicle crashes by limiting the amount of fuel spilled during and after a crash.

[5]About 21 percent of the 1.9 million deaths per year in the United States are caused by cancer. Table 2 shows that the risk of fatality from cancer per million individuals is 1,833 compared to 8,695 from all causes.

are willing to pay for safer products. The Environmental Protection Agency has reviewed these studies and concludes that people are willing to pay between $400,000 and $7,000,000 per statistical life saved.[6] An academic study recommends a range between $500,000 and $2,000,000 for use in public policy analysis.[7] The costs of risk reduction for the first three regulations in Table 3 (unvented space heaters—$70,000 per life saved; servicing wheel rims—$250,000 per life saved; and fuel system integrity—$290,000 per life saved) are well below these ranges, indicating that these regulations achieved their risk reductions at costs that most individuals would consider worthwhile. On the other hand, the costs of risk reduction for the last three regulations (uranium mill tailings—$53,000,000 per life saved; ethylene oxide—$60,000,000 per life saved; and DES in cattlefeed—$132,000,000 per life saved) all exceeded even the highest value in these ranges. This does not necessarily mean that no regulation of uranium mill tailings, ethylene oxide, or DES in cattlefeed is warranted. It may be that a modified, less expensive form of control would reduce risks at costs acceptable to the public. For example, allowing those covered by the OSHA regulation to choose the best method of meeting the exposure limits to ethylene oxide, rather than requiring engineering controls in all instances would have reduced compliance costs by at least 60 percent without any reduction in benefits at all.[8]

Of course, there are more factors to consider in setting regulatory policy than just risk-cost tradeoffs. Many statutes require consideration of factors in addition to, or sometimes instead of, costs and risk reduction. Regulating officials or the public may also attach special significance to reducing risks to particular groups or in extraordinary situations. For these reasons, no single "value of life" estimate is appropriate for all situations and OMB does not recommend any specific number for use in evaluating regulatory benefits. However, agencies should evaluate cost-effectiveness by comparing, for example, the costs per statistical life saved implied by their proposed regulations with the costs implied by the regulations of other activities, and with the estimates of willingness to pay to avoid risks by individuals in their daily activities.

Critics have claimed that one cannot place "a value on life" and therefore we should not estimate the cost per life saved implied by proposed regulations. It is true that a specific individual's life cannot be assigned a dollar value since most people would be willing to spend almost any amount of money to avoid certain death and to continue a healthy life. But this is almost never the situation that government regulators face. The kinds of risks government usually regulates are small risks of death for a large number of individuals. Under these conditions, it is essential to have some uniform measure of cost and benefit so that the maximum number of lives can be saved with society's limited resources. If policy officials do not use estimates of the cost per statistical life saved, they will not know if alternative options might save more lives.

Thus, understanding the costs and risks of different regulatory options is an essential part of good public policy. In Executive Order No. 12291, President Reagan has required that "regulatory objectives shall be chosen to maximize the net benefits to society." This cannot be achieved without understanding both the costs and risk reduction benefits of regulatory options. In the next section we describe the risk assessment procedures used to estimate risk reduction benefits. As we shall see, risk assessment itself poses particular challenges for coordination.

B. RISK ASSESSMENT

As we pointed out with some examples above, a more consistent and coordinated approach to risk management could realize both cost savings and greater risk reduction. This coordination is difficult because agencies measure risk differently for different hazards and different programs. The comparisons between regulatory activities we made in the last section would not be very meaningful for regulatory management purposes if the levels of risk and expected risk reductions were measured in different ways for different hazards and control programs. Under these conditions, comparing the cost-effectiveness of reducing risk from different possible actions would be like comparing apples and oranges; we would not know whether net benefits to society were being maximized or were even positive. As this section explains, however, this is a problem that for years has characterized risk regulation.

Of course, there will always be some uncertainty about the magnitude of the risk from any hazard or of the reduction in risk from any control measure. Some might argue that, with so much uncertainty, why do we bother to assess risks at all? The answer is that, while not precise, scientific (and statistical) information can greatly improve our understanding of the magnitudes of the numerous risks we face and quantitative risk assessment allows us to characterize the range of uncertainty and describe the likely effects of regulatory options.

Although uncertainty can never be eliminated completely, it becomes less of a problem for risk managers when it is dealt with explicitly and consistently. This is because risks predicted by different analysts will

[6]U.S. Environmental Protection Agency, *Guidelines for Performing Regulatory Impact Analysis* (December 1983).

[7]See W. Kip Viscusi, *Risk By Choice: Regulating Health and Safety in the Workplace* (Cambridge, Mass.: Harvard University Press, 1983), p. 106.

[8]See letter to Francis Lilly, Solicitor of Labor, dated June 14, 1984, from Christopher DeMuth, Administrator for Information and Regulatory Affairs, Office of Management and Budget, for these calculations (OSHA Docket No. H-200).

have the same meaning and are, therefore, comparable even though some uncertainty remains. Currently, however, uncertainty is dealt with in different ways for different types of risks and by different agencies. For example, safety risks and health risks are often measured in very different ways and even the risks from the same substance are often estimated differently by different agencies.[9]

For some types of potential hazards, including most safety hazards, the procedures to estimate risk currently used by Federal agencies usually involve developing a "best estimate" (in statistical terms, the expected value) of the risk.[10] This measure is favored by statisticians, economists, and scientists because it is the most accurate measure of what, on average, is likely to happen.[11] The use of the best estimate does not preclude the supplementary use of other measures in order to understand the variation around this average, such as the variability of the risk or its upper or lower bounds. Agencies often—and should—use these supplemental measures as well. Using the best-estimate approach along with estimates of uncertainty allows policymakers to understand the range of possible risks and to choose the margin of safety that is appropriate for specific regulations. A regulatory agency could choose to be very cautious and regulate to protect people against a risk that has a very small chance of actually occurring, i.e., a risk at the higher end of the range of uncertainty. An agency could choose to regulate so that the chances of a risk occurring are, for example, only 5 percent, 1 percent, or 0.01 percent. However, it could be very costly to regulate to this level.

Risk assessments of health hazards—as opposed to safety hazards—particularly those based on animal tests, rarely develop a best estimate of the risk. Instead, such risk assessments of health hazards often inform the regulatory officials and the public of only the high end of the range of uncertainty of the risk, i.e., only what the most cautious estimates are. Regulations based upon these so-called upper-bound estimates may, therefore, address a risk that is almost nonexistent. When agencies focus their efforts on regulating insignificant risks, they may end up ignoring other more significant risks.

Conservative Assumptions in Measuring Carcinogenicity

Determining the risk to humans exposed to a cancer-causing substance or "carcinogen" is often very complex. This is because frequently little information is available on the reaction of humans to a specific chemical, and, even if humans are known to be exposed to a suspected carcinogen, many will not contract cancer and, even if they do, it usually takes many years for any adverse reaction to occur. Most risk estimates for humans from an activity or a substance are made by "extrapolating" (or projecting) from the results of animal studies. This process raises difficult questions, including how to treat differences between the species (such as rats and humans) and how to estimate or extrapolate the effects of very high doses of animal exposure to the relatively low exposure levels encountered by humans. Currently, it is the custom to make assumptions when faced with these questions. These assumptions are usually very cautious. If the risk is exaggerated and not understood by the regulator, the regulator cannot make fully informed decisions as to whether to regulate, how to regulate, and how effective regulation will be.

Using upper-bound estimates only and not setting forth risk information as accurately as possible concern many risk assessment officials, risk managers, and academics. For example, Elizabeth Anderson, the former head of EPA's Office of Health and Environmental Assessment, points out that *upper-bound* risk estimates are sometimes misinterpreted as *actual* estimates of risks and important statements regarding uncertainty are neglected.[12]

Similarly, Harvard University's Energy and Environmental Policy Center states that consistent application of conservative assumptions ". . . confuses risk assessment with risk management, distorting science to influence policy."[13] The authors recognize that the

[9]For example, OSHA's risk assessments for ethylene oxide and ethylene dibromide differed significantly from EPA's assessments for the same chemicals. For formaldehyde, the risk estimates by OSHA, EPA, and the Consumer Product Safety Commission (CPSC) differed substantially from each other. It is difficult to identify which regulatory program could reduce risks from these chemicals most effectively when estimates of effectiveness cannot be compared.

[10]Throughout this discussion, the term "best estimate" will have the technical meaning of expected value. This use here should not be confused with other legitimate, but quite different, meanings of the term "best," e.g., to mean minimum-variance, or in the expression "best case," to mean the most optimistic possibility.

[11]For example, see Lester Lave, *Quantitative Risk Assessment in Regulation* (Washington, D.C.: The Brookings Institution, 1982), p. 3; D. Caukins, R. Dixon, R. Gerber, D. Zarin, and G. Omenn, "Identification, Characterization, and Control of Potential Human Carcinogens: A Framework for Federal Decision-Making," *Journal of the National Cancer Institute*, Vol. 64, No. 1 (January 1981), pp. 169–76; Charles River Associates, Inc./Applied Decision Analysis, Inc., *Risk Assessment and Risk Assessment Methods: The State of the Art*, National Science Foundation Report No. NSF/PRA–84016 (March 1985), p. xxviii; and Albert L. Nichols and Richard J. Zeckhauser, "The Dangers of Caution: Conservatism in Assessment and the Mismanagement of Risk," *Discussion Paper Series*, Kennedy School of Government, Harvard University (November 1985).

[12]Elizabeth Anderson, "Quantitative Approaches in Use to Assess Cancer Risk," *Risk Analysis*, Vol. 3, No. 4 (1983), pp. 35–36 (preprint copy). "In addition, the experience of EPA over the past decade includes misunderstandings when carcinogen risk assessments have been applied in policy considerations. First, when quantitative estimates have been provided, there has been a tendency to use these risk estimates and ignore the weight of the biomedical evidence, and to treat all suspected carcinogens as if they were known human carcinogens. Furthermore, upper bound estimates in some cases have been treated as actual estimates of risks, and important statements regarding uncertainties have been neglected. Such misunderstandings can lead to errors in policy judgments."

[13]Albert L. Nichols and Richard J. Zeckhauser, "The Dangers of Caution: Conservatism in Assessment and the Mismanagement of Risk" (November 1985).

motivation behind these conservative assumptions in estimating risk is to emphasize health and safety over other risk management considerations. However, the end result may be *less* rather than more safety, because appropriate choices among options to reduce risks cannot be made as a result.

A few examples of these cautious or conservative assumptions are: (1) treating all benign tumors as malignant, (2) using data about only the most sensitive animal species and sex, and (3) using conservative mathematical models to extrapolate from high to low doses. Each of these three kinds of assumptions is discussed briefly below.

All benign tumors treated as malignant. In interpreting animal studies, agencies frequently interpret both benign (noncancerous) tumors and malignant (cancerous) tumors to be equally strong indications that a substance is a carcinogen. Scientists know, however, that not all benign tumors evolve into malignancies. Studies that treat benign tumors the same as malignant tumors can overstate the real risk present. Some risk assessments based on animal studies have concluded that a chemical is carcinogenic *solely* because of an increased number of benign tumors.[14] Assuming that all benign tumors will become malignant will not produce a best estimate of the risk.

Use of most sensitive species and sex. Even though the results of several animal studies may be available for a particular suspected carcinogen, it is not unusual for the risk estimate to be derived only from the data for the most sensitive exposed species and sex.[15] This conservative approach tends to overpredict the risk to humans, because it assumes that humans are as sensitive as the most sensitive animal tested even when the most sensitive animal tested is hundreds of times more sensitive than any other animal tested. Furthermore, by using the *same* data to derive the risk estimate *and* to determine the most sensitive species, the chance is increased that statistical anomalies will lead to overestimates of the risk. (If a statistical anomaly causes an upward bias in the estimated risk for a particular species, it will also increase the chance that that species will be selected as the most sensitive.) A more accurate estimate could be derived from a weighted average of all the scientifically valid, available information.

Conservative extrapolation from high doses to low doses. To determine the risks to humans from exposure to a substance, scientists must extrapolate (or estimate) from the results of high doses in animal experiments to the comparatively low doses of human exposure. This extrapolation relies upon statistical models. The risk from exposure to low doses cannot be determined with certainty. In making the extrapolation, the common practice is not to make a best estimate of the risk from human exposure to low doses, but to determine what a maximum risk would be. Often, such an extrapolation has a 95 percent chance of overstating the true risk. Usually, the explanation for using these conservative assumptions is to ensure that the actual risk is not underestimated.[16] However, the resulting risk estimate can be over one hundred times greater than the best estimate of the risk.

Conservative Assumptions in Estimating Human Exposure

Estimating the health effects of varying doses of a suspected carcinogen on a human is only the first step in estimating the total risk to humans from the suspected hazard. It is also necessary to estimate (1) the concentrations of the substance to which humans are exposed, (2) the number of humans exposed, and (3) the duration of their exposure. In making these estimates, some agencies rely on yet another series of highly cautious assumptions, rather than calculating best estimates. Examples of these additional, often highly cautious assumptions include: (1) using the worst-case environmental conditions, rather than more normal conditions or a range of conditions; (2) assuming that there is exposure to the carcinogen over a whole lifetime when this is often not the case, certainly not for all exposed persons; and (3) considering only the maximum exposed individual. We describe each of these assumptions in the following discussion.

Use of worst-case environmental conditions. To estimate what concentrations of a contaminant reach a point at which humans might be exposed, a chemical's movement through the air, water, or soil usually must be estimated with a computer model. Movement of a chemical, for example, depends greatly on environmental conditions, such as windspeed and direction for airborne pollutants; surface water flow, acidity, and temperature for water pollutants; and groundwater velocity, flow, and soil type for chemicals that pass through the soil. Often, only one calculation is made for the entire Nation on the assumption that it is impractical to set different regulatory standards for different environmental conditions. When a single model must represent conditions for the whole Nation, agencies frequently assume the unique circumstances that together may present the greatest risk,

[14]At the same time the rest of the risk assessment will assume the 24-month life cycle for a rat or mouse is equivalent to the 75-year life cycle for humans; this would suggest that if the tumor has not become malignant in the animal's life, it will not become malignant in a human's life.

[15]See E. Anderson, p. 41, for EPA's practice. Also OSHA's cancer policy states: "Positive results in one or more mammalian studies will be used for the qualitative identification of potential occupational carcinogens, even where non-positive results exist in other mammalian species." *Ibid.* OSHA, EPA, and CPSC recently based their risk assessments for formaldehyde on the results of the one rat study that showed the highest risks, even though five studies on the mouse, hamster, and other rat strains all showed either lower or zero risks.

[16]See E. Anderson, p. 42.

and then assume that this circumstance exists everywhere in the Nation. For example, a gravel soil environment (rather than clay or some other soil condition) might be used in a model because chemicals in groundwater move most quickly through gravel and, thus, are likely to pose a greater risk. However, since not all soil is gravel, this assumption will overstate actual risks.

Lifetime exposure assumed. Risk assessments often also assume that humans are exposed for their entire lives (or working lives, often 45 years, in the case of occupational exposure) to a particular chemical from a particular source and under the worst-case environmental assumptions. For example, in its recent proposal to restrict land disposal of hazardous waste, EPA calculated the human risk on the basis of an individual who would drink 2 liters every day for 70 years from a contaminated groundwater well (this is in addition to many other highly cautious assumptions). Using these same assumptions, diet soda or beer would pose risks hundreds of times greater than the level EPA proposed for the contaminated water. OSHA often assumes that workers are exposed for 45 years—from age 20 to 65—in estimating the number of cancers that would be avoided by regulation. Actually, Americans are highly mobile and unlikely to live in the same location or work at the same job for their entire lives. These assumptions can bias the estimates of risk upwards.[17]

Regulate for the maximum exposed individual. Frequently, regulations for everyone are based on the risk to a hypothetical individual who is assumed to be exposed to the worst possible combination of exposure circumstances, rather than on risks that are usually found for the entire exposed population. For example, the hypothetical maximum exposed individual would live right next to the plant emitting the most pollutants; drink directly from the most contaminated water supply; or work steadily in the most hazardous work environment for his or her entire life. Formulating national regulations for such an individual will certainly not depict the national situation and will not maximize net benefits to society.

Impact of Compounded Conservative Assumptions

Often each conservative assumption is made by a different scientist or analyst responsible for a portion of the risk assessment. Each may think that erring on the side of caution or conservatism is reasonable. However, the effect of these individual conservative assumptions is compounded in the final estimate of risk presented to the decisionmaker. For example, if at each of two different steps in an analysis, estimates are chosen that have a 5 percent chance of being less than the true risk, then the final risk estimate will have only a 0.25 percent chance of being less than the true risk ($0.05 \times 0.05 = 0.0025$). That is, the risk estimate will have a 99.75 percent chance of being greater than the true risk. If there were 5 steps in the analysis instead of 2 and a conservative estimate at the 5 percent level were chosen for each step, then the final risk estimate would have a 0.00003 percent (0.05^5) chance of being less than the true risk, or 3 chances in 10 million. In other words, the estimate has a 99.99997 percent chance of overstating the true risk.

In practice, there may be as many as 20 distinct stages in a risk assessment where conservative assumptions are made. A typical risk assessment would probably contain about 10. The final risk estimate derived from these compounded conservative assumptions may be more than a million times greater than the best estimate and may, thus, have a probability of being accurate that is virtually zero. Some combinations of these highly cautious assumptions so overstate the risk that they are unrealistic. For example, if Occupational Safety and Health Administration estimates of worker exposure to ethylene dibromide (EDB) are combined with Environmental Protection Agency estimates of the human toxicity of EDB extrapolated from animal studies, the result is a risk estimate that 999 out of 1,000 workers exposed to EDB will develop cancer as a result of the exposure. In fact, epidemiological studies of workers exposed to EDB have found *no* significant increase in their chances of getting cancer.[18]

Risk assessments with such extreme conservative biases do not provide decisionmakers with the information they need to formulate an efficient and cost-effective regulatory strategy. Furthermore, the inconsistency of these assumptions makes it virtually impossible to compare risks from different sources. It is particularly difficult to compare safety risk estimates, which *are* usually best estimates, with health risk estimates, which usually are not best estimates, because the latter embody a series of conservative assumptions. Even different estimates of health risks may not be comparable because of the different degrees of conservatism built into them. Where risk estimates for two different risks cannot be compared, it will be impossible to compare the effects of regulations controlling them.[19]

[17]Moreover, use of a lifetime risk estimate incorrectly implies that the last year of exposure contributes as much to the individual's health risk as earlier years of exposure. In fact, since the latency period between exposure and the onset of cancer is often 20 years or more, exposure at age 60 would not be expected to manifest itself during a normal life expectancy.

[18]See the preamble to OSHA's EDB standard for a discussion of the epidemiologic evidence (48 F.R. 45956 *et seq.*). OSHA maintains that these studies are too small and limited to override the animal study.

[19]All the data in Tables 2 and 3 of Section A are based on risk estimates that are, at least approximately, best estimates. Therefore, the different items in each table may be compared with each other.

A perverse and unfortunate outcome of using upper-bound estimates based on compounded conservative assumptions is that it may lead us to regulate insignificant risks and ignore more serious risks. Furthermore, the more uncertain we are about the risk posed by a particular hazard, the higher the upper-bound risk estimate will be. Therefore, the less information we have on the risk posed by a potential hazard, the more likely we are to regulate it. Other hazards that pose certain but smaller risks are not considered as dangerous and may not be regulated. Yet, hazards with better understood risks may be more serious.

All the problems we have discussed resulting from compounding conservative assumptions can be addressed by developing best estimates at each stage of the risk assessment process. Estimates of the uncertainty and the outer ranges of potential risk can be developed to supplement the best estimate. Both the best estimate and these supplementary risk indicators should be made available to decisionmakers. Then, if regulatory decisionmakers want to choose a very cautious strategy of risk control, they could do so and a margin of safety could be applied at the final decision and would be based on all the available information about its consequences and those of alternative strategies. The public and affected parties would also benefit from knowing both the expected risk and the margin of safety rather than being given only alarming and inconsistent estimates that are likely to be very different from actual risks.

Only when best estimates of risks and other information on the likely level of risks are presented to the decisionmaker, rather than hidden in the assumptions, can we be sure that we are issuing regulations that will make society as well off as possible. Fortunately, more review by regulating departments and agencies and by the Executive branch has already begun to improve consistency in risk assessment and risk management and, thereby, improve societal welfare. Executive Order No. 12291 provides a mechanism to help ensure consistency.

In addition, last March the Office of Science and Technology Policy published guidelines for assessing cancer risks from chemicals. This review of the available scientific information does not attempt to formulate policy or develop standardized methods of risk assessment. It does establish a framework for assessing risks from chemical carcinogens. The document recommended an approach (weight-of-the-evidence) that is consistent with the use of best estimates. In addition, the Environmental Protection Agency and the Occupational Safety and Health Administration will review their guidelines for assessing cancer risks.

Other efforts, in addition to improving risk assessment procedures, can help to achieve more consistent and cost-effective risk regulation. As prescribed by Executive Order No. 12291, the benefits and costs of regulatory alternatives must be examined to determine which alternative will provide the most net benefits to society—a procedure that is equally valuable for all types of regulation, not just risk regulation. In an effort to improve the evaluation of the benefits and costs of regulation, the Office of Management and Budget will, during the coming Regulatory Program year, issue a revised Regulatory Impact Analysis guidance document. This document will not offer detailed guidance on risk assessment, but rather will be directed at methods for economic evaluation of the benefits and costs of regulations. It will provide guidance for identifying some of the conditions where regulatory intervention may be warranted, for identifying alternative means of achieving a regulatory objective, and for measuring the benefits and costs of regulatory alternatives.

IV. EFFICIENT ALLOCATION OF REGULATORY RIGHTS AND RESOURCES

An overall goal of this Administration is to reduce regulation of markets and economic relationships where regulation produces less satisfactory results than would market-oriented approaches. The President has stated in his regulatory guidelines that where regulation creates private rights or obligations, their unrestricted exchange should be encouraged. Since the free exchange of goods or services in the marketplace tends to allocate them to their most valued use, society is better off. This is true even when the goods and services in question are created by government regulation.

This chapter addresses specific initiatives, guided by the principle of unrestricted exchange, to achieve regulatory goals more efficiently. It examines several regulatory programs that involve—either as their primary purpose or as a necessary result—the allocation of valuable rights or resources among private parties. For example, the Federal government allocates to private parties access to natural resources under its control, such as mineral, forest, and grazing lands and offshore mineral rights. Some regulatory programs actually create scarce rights and then allocate them among private parties, such as takeoff and landing rights at congested airports and radio or television broadcast licenses. This Administration has sought to allocate such rights and resources more efficiently, through the use of markets and market forces.

The single most important means for achieving efficient allocation of resources that are created or governed by regulation is to allow, wherever feasible, their unrestricted exchange by private parties. If a valuable right can be bought and sold freely, the

party that can use it most efficiently and, therefore, values it most highly is likely to offer the highest price for that right. For example, if the right to mine a particular mineral deposit can be bought and sold, then the mining company that can extract the mineral for the lowest cost is likely to offer the highest price. Because of its lower operating costs, it could offer a higher price while still making a profit than could other bidders with higher costs of extracting the mineral. In this way, the mineral would be extracted at the lowest cost to society. Allowing a valuable right to be freely exchanged not only benefits the parties directly involved in the transaction, but consumers and others ordinarily would gain from the right being put to its most valued use.

Section A of this chapter describes how the Administration has actively sought to increase the efficiency of environmental regulation by allowing the use and exchange of emission reduction "credits" that are authorized under certain programs. These "credits" represent the amount by which a pollution source has reduced its emissions below the amount required by regulation. The Environmental Protection Agency (EPA) used this approach in its regulations to accelerate the removal of lead from gasoline in November 1982. Because some producers could use lead more efficiently than others, EPA allowed refiners to trade the right to use lead in gasoline on a nationwide basis, greatly reducing the economic costs of the lead phasedown program while keeping the benefits the same. During the forthcoming year, EPA will seek other opportunities to expand the exchange of credits arising from its air quality control regulatory program.

Some rights, such as mineral leasing rights (i.e., the right to mine minerals for a specified period of time) and broadcast licenses (i.e., the right to broadcast radio or television programs), have long been marketable. This year the Administration has implemented a program to allow airlines to buy and sell rights for airplanes to take off and land at congested airports. As discussed in Section B below, this action is expected to improve the efficiency of airline operation at these airports where rights to take off and land are limited by safety considerations. This efficiency will benefit both producers and consumers of airline services.

Section C discusses several examples of recent efforts to achieve more efficient initial allocation of rights or resources. The greater the transaction costs of transferring rights between private parties, the more important it is to have the most efficient method of allocation initially, since subsequent exchanges can correct for the inefficiencies of an initial inefficient allocation only at a high cost.

A. EMISSIONS TRADING

Much of the environmental, health, and safety regulation developed during the 1970s relied on centralized, "command-and-control" regulatory approaches. Under command-and-control approaches, the regulatory authority sets standards for every source that discharges pollution within a plant. Because there are a large number of these emission sources, EPA has typically relied on an approach that establishes uniform, national standards based on its judgment of what is the best available control technology for each category of industrial plant or process.[1]

There are some significant disadvantages to this approach. A command-and-control approach must rely on relatively simple regulatory standards—in this case, uniform, technology-based standards—in order to keep the administrative costs of the standard-setting process at manageable levels. As a result, this approach often imposes unnecessary costs on society, because it is almost always much less costly to reduce emissions from some pollution sources than from others. Several studies report, for example, that the same amount of pollution control could have been achieved at substantially lower costs by adjusting control requirements to achieve a more cost-effective control of these sources.[2]

One way to make the command-and-control approach more efficient is by allowing the exchange of the obligations and credits created through EPA's centralized standard-setting process. Permitting the exchange of credits allows private decisionmakers to determine for themselves the lowest cost ways of achieving the required emission reductions and thereby reduces the overall cost of meeting environmental standards. This approach can yield substantial cost reductions as compared to having a regulatory agency prescribe the way in which *each* source will meet a specified regulatory goal.

Emissions trading allows a polluting source to exceed the applicable limits if this increase in emissions is offset by a decrease in emissions from other sources. Firms can trade such emission reduction "credits" to achieve the same level of pollution control as required by having each source meet the specified emission level. The same result will be reached, however, at a lower cost. The potential cost savings for approved and pending trades exceeds $1 billion (capital and first-year operating costs).[3]

[1]Even a thorough review by a regulatory agency is unlikely to enable it to identify the "best" control combinations, because the operating characteristics of each plant are unique and change. Of course, the regulated plants have little incentive under a centralized approach to pursue all opportunities available for controlling emissions.

[2]Recent studies include: A.M. McGartland, "Marketable Permits Systems for Air Pollution Control: An Empirical Study," Ph.D. dissertation, University of Maryland (1984); Michael T. Maloney and Bruce Yandle, "Estimation of the Cost of Air Pollution Control Regulation," *Journal of Environmental Economics and Management*, Vol. 11, No. 3 (September 1984); E.P. Seskin et al., "Economic Strategies for Controlling Air Pollution," *Journal of Environmental Economics and Management*, Vol. 10, No. 2 (June 1983).

[3]U.S. Environmental Protection Agency, *Emissions Trading Status Report* (January 1, 1986).

Critics have raised several concerns with the trading policy. For example, some claim it would result in more emissions than under EPA's command-and-control regulations. If, for example, a plant's allowable emission limit is based on plant operation at full capacity, even though the plant would never operate at this level, it might obtain emission credits without actually reducing emissions. Similarly a firm might receive credits without applying further control if the plant has a combination of process and control technology that yields emission levels well below the levels allowed by the standards. These concerns can be met by properly defining emission credits available for trading. Clearly, care must be taken in designing and administering emissions-trading programs to avoid the creation of bogus emission credits.

Some critics of the emissions-trading policy have also argued that all reductions in emissions should be used to achieve further improvements in air quality (or provide a cushion for growth), instead of being used to mitigate the stringency of control requirements for those sources that are difficult and costly to control. Under such a command-and-control approach, however, there are no incentives for plant operators to come forward with opportunities for further reducing emissions—instead, sources will take only those minimum control measures necessary to meet their emission limits. Further, where control is difficult and costly, sources have an incentive to seek to change or at least to delay their control. The emissions-trading policy offers an incentive to plant operators to come up with alternative, lower cost ways to achieve the required emission reduction and can result in achieving these reductions more rapidly than would otherwise occur. In addition, of course, this policy encourages the development of innovative control techniques that can serve as the basis for more stringent standards in future years.

In its air programs, EPA has used emissions trading in several forms. In a policy statement proposed in April 1982, EPA simplified, consolidated, and extended its emissions-trading program for existing stationary sources of air pollution. EPA's emissions-trading program incorporates the following:

- A "bubble" policy, which treats a given plant site as a unit instead of requiring each of the individual emission sources within the plant to meet separate standards. This allows plant managers to operate the plant, including its pollution control equipment, at maximum efficiency.
- A "trading" policy, which (as discussed above) allows more efficient control by allowing trading of credits between plants.
- A "netting" policy, which exempts modified or new facilities within a plant from cumbersome regulatory requirements if the plant reduces emissions from other existing facilities within the plant so that the net emissions from the plant are not increased.
- An "offsets" policy, which allows new sources to offset new emissions by reductions in pollution from existing sources. More than 2,000 offset transactions have taken place in virtually every part of the United States.
- A "banking" policy, which allows firms that reduce emissions more than required by their emission standards to earn and save these credits for pollution reduction, facilitating bubble and offset transactions.

EPA is now evaluating additional measures that could extend emissions-trading opportunities into some important new areas. These are discussed below.

Emission Standards for Mobile Sources

In implementing the Clean Air Act's requirements for controlling pollution from automobiles and other motor vehicles, EPA establishes emission limits for each class vehicle or engine class within a manufacturer's fleet. Each vehicle or engine within a specific class must meet the same emission standards for carbon monoxide, hydrocarbons, nitrogen oxides, and diesel particulates. Instead of requiring each vehicle to meet these emission standards, the same emission reductions can be achieved more efficiently by requiring only that the average level of emissions across a manufacturer's fleet meets the emission standard. (This is similar to the "bubble" concept, where, rather than regulating each source within a plant separately, the whole plant must meet a standard.) This would permit emissions from some of a manufacturer's vehicles to exceed the standard if emissions from other of its vehicles fall sufficiently below the standard. Similarly, an "emissions-trading" approach would apply this averaging concept to "trades" between manufacturers so that the average level of emissions for all vehicles involved meet the emission standard. Averaging or emissions trading could substantially reduce the costs to consumers of achieving pollution-reduction targets.

EPA has already adopted pilot programs allowing averaging of particulate emissions from diesel automobiles and light trucks and, more recently, a limited averaging program for nitrogen oxide and particulate matter emissions from heavy-duty engines. In addition, EPA is studying emissions banking and trading approaches for nitrogen oxide and particulate matter emissions from heavy-duty vehicles.

New Source Standards

EPA has also studied ways to apply emissions trading to compliance for new facilities and plants that must comply with the new source performance standards (NSPS) established under the Clean Air Act. Currently, EPA's bubble and emissions-trading programs apply only to existing sources, not new sources.

Under the NSPS provision of the Clean Air Act, EPA sets standards for major industrial processes through a technology-based review of the best demonstrated

level of control "achievable" for each source category. EPA sets these standards based on an "engineering judgment" of the best control "achievable" (taking into account cost and energy effects) for each type of source. Since the costs of meeting (or exceeding) the NSPS limit vary greatly for different facilities within a source category, EPA's current approach results in a wide variation in the costs of control for new plants. In the case of the NSPS for controlling hydrocarbon emissions, for example, EPA has adopted NSPS with drastically different costs of control (as indicated in Table 4). At the expensive end of the range, the average control cost for flow coating of metal furniture is roughly $6,300 per ton. At the other extreme, EPA estimated that the control of complex surface-coating processes would actually *save* $1,090 per ton.

TABLE 4. COSTS OF CONTROLLING HYDROCARBON EMISSIONS TO THE AIR UNDER NSPS REGULATIONS[a]

	Average cost of control ($/Ton)
Rotogravure publication, large plant	119
Surface coating of metal furniture	
Dip coating, large plant	1,110
Flat surface spray coating, large plant	−710[b]
Complex surface spray coating, large plant	−1,090[b]
Flow coating	6,320
Auto and light-duty truck surface coating operations	1,700
Equipment leaks at petroleum refineries	120
Bulk gasoline terminals	400

[a]Calculated from information contained in the Background Information Documents developed by EPA for these rules.

[b]Negative sign indicates that these plants would realize cost savings with the required control (for example, because product recovery yields savings that outweigh the costs of control).

Because of this wide variation in the cost of NSPS, emissions trading or "bubbling" between facilities within a plant, or between plants, could reduce the costs of complying with these new source standards while achieving the same regulatory goals.

On January 25, 1985, EPA proposed approval of its first NSPS compliance bubble in response to a petition filed by Central Illinois Public Service Company (CIPS) for a "bubble" for emissions from two identical utility boilers. Under the original 1971 boiler NSPS, SO_2 emissions from coal-fired steam electric powerplants are limited to 1.2 pounds per million British thermal units (Btu) of heat input. Under the proposed bubble, one of the two boilers will reduce SO_2 emissions to roughly 0.6 pounds per million Btu, while limits for the other boiler will be relaxed (allowing it to use a somewhat higher sulfur content coal from a nearby mine) so that the average for both sources will be 1.1 pounds per million Btu. CIPS estimates that this "bubble" will reduce SO_2 emissions by 3,000 tons per year and yield cost savings of $22 million per year.

EPA is analyzing the issues raised on the proposed CIPS bubble during the comment period. By December 1986, EPA will decide whether to publish general criteria for evaluating other new source bubbles. Through these measures, EPA hopes to encourage the development of environmentally sound compliance bubbles for facilities covered by NSPS.

B. AIRPORT SLOTS

On December 20, 1985, the Department of Transportation issued a final regulation to allow the sale of takeoff and landing rights ("slots") at four "high-density" airports. Currently, the number of slots available during certain periods at these airports (Chicago's O'Hare, New York's La Guardia and Kennedy, and Washington's National) must be restricted below the number desired by airlines, primarily because of limited air traffic control capacity and noise restrictions. The rule, which became effective April 1, 1986, allows these restricted slots to be transferred for any reason. However, there are provisions to protect the availability of slots for service to small cities, commuter airline service, and international service. Prior to April 1, 1986, a slot could only be traded—one for one—for another slot at the same airport. The Federal Aviation Administration did not allow, for example, a new airline to buy a slot.

Where scarce slots can be bought and sold freely, the highest price for a slot would generally be offered by the airline with the highest valued use for it (for example, use of an airline that charges lower prices may be more highly valued by consumers). If the airline can operate a slot at lower costs than other airlines or otherwise gain more revenues from its use of the slot, it can afford to pay more for the slot than other airlines. Society is made better off, because more of the scarce slots will be operated at lower costs and used for flights that give air travelers greater benefits.

Allowing slot sales will also make air travelers better off by increasing airline competition at the high-density airports. In general, an airline serving a particular city-pair market (e.g., Chicago-Boston) will be restrained in raising its fare not only by existing competition from other airlines serving the same market, but also by the threat that more flights will be added to serve that city-pair if the airline raises its fare. When the slots at a high-density airport cannot be sold, this threat is substantially reduced. For example, an airline that did not hold slots at that airport would not represent a competitive threat, regardless of how efficient it would be in serving the market. Where slots can be sold, an airline must consider the possibility of competition from any airline. Hence, the

possibility of slot sales makes airline markets more competitive and restrains or reduces airline fares.[4]

Some critics of the marketable-slots approach claim that it allows owners of valuable slots to make a "windfall" profit when they sell. But this is not entirely accurate or a valid basis for opposing these sales. The need to restrict the number of slots at high-density airports in order to maintain safety makes those slots valuable, whether or not they can be sold. An airline using a slot to operate a flight at one of these airports will make more profit on the flight than otherwise, simply because slots are scarce at that airport. Hence, even if the slots at a high-density airport cannot be transferred, the holders of slots there already receive the scarcity value of the slots simply by operating them. Therefore, allowing the sale of slots does not grant their holders the entire scarcity value of the slots as a windfall gain. It is true that allowing the sale of slots makes them somewhat more valuable, simply because they can be allocated more efficiently among alternative uses. But airline consumers will also gain substantially from the lower fares or more highly valued service that slot sales will allow.

In response to another concern, we should also point out that making slots marketable will not cause airline fares to rise at high-density airports. In fact, fares are likely to decrease for two reasons: (1) formerly unused slots will begin to be used to operate flights, because an airline with a slot it cannot profitably use can now sell it to another airline with a use for it;[5] and (2) allowing slot sales will hold down airline fares by increasing competition among airlines at high-density airports.

C. OTHER INITIATIVES

In the case of airline slots, it may not be particularly critical how the scarce rights are initially allocated, because subsequent slot sales can bring about an efficient allocation of slots. The cost of making these transactions is likely to be small relative to the value of the slots. For other types of valuable rights, however, the method of initial allocation could be quite important. For example, if subsequent exchanges to achieve an efficient allocation of rights are costly, misallocating rights in the first place would waste resources and bestow windfall gains on some parties. Next we discuss a few situations where the initial allocation of rights is important.

Auctioning Non-Mass-Media Frequency Licenses

In May 1985, the Federal Communications Commission (FCC) proposed that Congress adopt legislation giving the FCC the authority for 5 years to use auctions to grant initial licenses for the operation of "non-mass-media" communications services—such as cellular radio, digital electronic message services, private land mobile radio services, and satellite services. This legislative proposal, which the Administration supports, would apply only to new grants of non-mass-media licenses, not to existing licenses. Currently, the FCC employs two methods—comparative hearings and lotteries—for selecting non-mass-media licensees. Comparative hearings, at which the FCC compares the "merits" of rival applicants, are costly both to the FCC and to applicants and delay the introduction of valuable new services. Lotteries also impose delays and costs on the public and the FCC. Because lotteries are viewed as "sweepstakes," they generate large numbers of applications, which must be processed prior to a drawing. For all their cost and delay, comparative hearings and lotteries do not greatly change the ultimate disposition of licenses, since winning candidates may resell their licenses to the highest bidder. In contrast, auctions would *immediately* assign frequency channels to users who can put them to their highest valued use without the need for costly, time-consuming resales.

Simultaneous Oil and Gas Leasing Program

Until it was suspended in 1983, the Simultaneous Oil and Gas (SOG) program of the Department of Interior's Bureau of Land Management awarded oil and gas mineral leases for certain Federal lands by a random lottery, for which any person willing to pay the required filing fee was eligible. An alternative method for allocating these leases to private parties would be some form of competitive bidding system. (Unlike the SOG program, leases on lands within a "known geologic structure" of a producing oil and gas field have long been awarded by competitive bidding.) There would be several advantages from replacing the SOG program with a competitive bidding system. First, competitive bidding would allocate the lands immediately into the hands of those who could use them most productively. Under the SOG lottery system, subsequent transactions—with their attendant costs and delay—are required to reallocate the leases from the lottery winners to the most efficient users. Second, competitive bidding would raise greater Federal-State government revenue without reducing incentives for development and production of oil and gas resources on Federal lands. According to analyses by the Department of the Interior, the SOG program recovered only between one-third and one-half of the market value of the leased lands. A competitive bidding system should be able to recover most of the market value. A competitive bidding system could increase annual Federal-State revenues by more than $125 million over the amounts produced under the lottery system. Legislation has been proposed to replace the SOG lottery program with a competitive bidding system. Such legislation merits serious consideration.

[4]This is not simply a theoretical analysis. Empirical analysis of actual air travel markets supporting this conclusion has been published by the Federal Trade Commission.

[5]A provision in the slot sale regulation that requires unused slots to be forfeited for use by other airlines will also ensure the use of formerly unused slots.

D. CONCLUSION

One of this Administration's fundamental regulatory principles is to encourage the unrestricted exchange of rights or obligations. Improving economic efficiency in this fashion is not without obstacles or opponents. In the case of emissions trading, for example, careful attention to the details of implementation is necessary to prevent an emissions-trading policy from leading to an increase in emissions. Also, some groups may dislike the outcome of a free-market allocation process. For instance, making airline slots marketable may cause some communities to lose some direct flights to congested airports. However, as the experience of this and past Administrations has shown, these obstacles are not insurmountable, and the benefits are worth the effort.

A number of important regulation-defined rights have been marketable for many years, and the benefits of allowing the free exchange of such rights as mineral leases or broadcast licenses have long been recognized. Nonetheless, the Administration has been able to identify several opportunities to extend this important principle in new directions, specifically, by allowing the sale of takeoff and landing rights at congested airports and by expanding opportunities for emissions trading. Where additional opportunities arise to improve the efficiency of regulation by more efficient allocation of regulation-defined rights, this Administration will pursue them vigorously.

APPENDIX III

Executive Order No. 12291 Annual Report for 1985

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I. INTRODUCTION

This report provides information on the implementation of President Reagan's Executive Order No. 12291 for the year ending December 31, 1985. It also describes trends in regulatory activity during the Reagan Administration and previous administrations.

Executive Order No. 12291, signed on February 17, 1981, established within the Executive branch a mechanism for improving Federal regulatory activities. The purposes of the Executive Order are to control the growth of Federal regulation and to ensure that individual regulations are well reasoned, economically sound, and coordinated with the policies of other agencies. In particular, the Order requires that all new regulations, to the extent permitted by law, adhere to the following principles:

- Agencies must base regulations upon adequate information concerning the need for and the consequences of the proposed action.
- Agencies must not issue regulations unless the potential benefits to society outweigh the potential costs to society.

- Of the alternative approaches to a given regulatory objective, an agency must select the alternative involving the least net cost to society.

To ensure compliance with these principles, the President ordered executive agencies to submit all proposed and final regulations to the Office of Management and Budget (OMB) for review before publication.

These review policies and procedures are conducted within statutory authorities. The Executive Order guides Federal regulatory officials in exercising the discretion given them by statute. This statutory discretion is often very broad, and may be ambiguous or contradictory. This discretion may be only exercised to the extent permitted by law. Where statutes clearly exclude economic considerations, by their terms, any Executive Order policies to the contrary are overridden. The Order applies to general policymaking, such as "informal rulemaking" under the Administrative Procedure Act. It does not apply to adjudicatory proceedings.

This is the fifth annual report on the Order's implementation. Section II describes the requirements and procedures of the Order. Section III presents detailed information on the types of rules reviewed and the types of actions taken by OMB in 1985, and compares 1985 data with 1981, 1982, 1983, and 1984. Section IV examines the nature and extent of regulatory activity since 1977 by analyzing the *Federal Register*.

II. IMPLEMENTATION OF THE EXECUTIVE ORDER

The Office of Information and Regulatory Affairs (OIRA) in OMB oversees agency compliance with Executive Order No. 12291. OIRA seeks to ensure, on a day-to-day basis, that agency regulatory activity reflects the President's regulatory policies described in the Order.

OIRA reviews "major" regulations with special attention. Regulations so designated have economic costs of over $100 million annually, or are projected to have significant effects on employment, inflation, or industry viability. A regulatory impact analysis (RIA) must accompany major regulations at both proposed and final rulemaking stages. An RIA assesses the costs and benefits of the action and its alternatives. OMB may waive the RIA requirements in special cases, for example, in order to expedite publication of an emergency regulation. Agencies must submit to OMB major proposed rules at least 60 days before publication, and major final rules at least 30 days before publication.

Executive agencies must transmit nonmajor regulations to OMB at least 10 days prior to planned publication. Executive Order No. 12291 does not require agencies to prepare RIAs for nonmajor actions, but it does require agencies to assure that their rules are consistent with the Executive Order's principles to the extent permitted by law. Many agencies perform an initial analysis of the economic impact of nonmajor rules if they believe the rule will have a significant effect, or if it will be useful in assessing the impact.

On January 8, 1985, the President signed Executive Order No. 12498. This Order further improves the systematic management of regulatory activities started under Executive Order No. 12291 and complemented by the Paperwork Reduction Act. The Order establishes an annual process to develop and publish an Administration Regulatory Program. The purposes of this program are as follows:

- To establish Administration regulatory priorities.
- To increase the accountability of agency heads.
- To provide Presidential oversight of the regulatory process.
- To reduce burdens of existing and future regulations.
- To minimize duplication and conflict of regulations.
- To enhance public and congressional understanding of the Administration's regulatory objectives.

To accomplish these goals, Executive Order No. 12498 requires agencies to submit annually to OMB a statement of regulatory policies and objectives for the coming year, as well as information concerning all significant regulatory actions underway or planned. OMB reviews these submissions for consistency with the regulatory policy principles stated in Section 2 of Executive Order No. 12291 and elaborated in the guidelines set forth in the August 11, 1983, Report of the Presidential Task Force on Regulatory Relief. OMB also examines the consistency of draft regulatory programs with one another, and identifies further regulatory or deregulatory actions that may be necessary to achieve consistency. The result of this process is the publication of the Administration's Regulatory Program in the spring of each year.

OMB's responsibilities under both Executive Orders are closely related to its responsibilities under the Paperwork Reduction Act of 1980. In addition to having complementary goals, the Executive Orders and the Paperwork Reduction Act are related because many regulations mandate paperwork requirements. Regulations impose approximately four-fifths of all Federal paperwork burden, excluding procurement paperwork. The principles of the Paperwork Reduction Act were implemented in OMB's rule, "Controlling Paperwork Burdens on the Public" (5 CFR 1320), published in March 1983.

The Paperwork Reduction Act is designed to minimize and control the collection of information imposed by Federal agencies on individuals, businesses or other private institutions, and State and local governments. It requires OMB to review these information collections and, if they are approved, assign an OMB control number and an expiration date. "Collections of information" include written report forms, applications, questionnaires, reporting or recordkeeping requirements, disclosure or labeling requirements, or other methods of obtaining information from the public.

Agencies are required to demonstrate to OMB that an information collection has practical utility, is not duplicative, and is the least burdensome means necessary for the proper performance of the agency's functions. If an agency fails to justify an information collection adequately, OMB may disapprove it. If an information collection has not been assigned an OMB control number, either because it has not been reviewed, has been disapproved, or its clearance has expired, the agency may not continue that collection. Furthermore, unless OMB has approved an information collection, a member of the public is under no legal obligation to comply with the information collection requirement, and an agency cannot deny that individual a benefit for refusing to provide the information. In 1985, OMB reviewed 3,347 agency requests for information collection clearances, approving 3,119 and disapproving 228.

III. REVIEW OF REGULATIONS

A. Types of Rules Reviewed in 1985

OMB reviewed 2,211 agency rules in 1985 under Executive Order No. 12291. Nine agencies accounted for over 75 percent of the rules reviewed (see Exhibit 1). These agencies were: the Department of Agriculture (406 rules), the Environmental Protection Agency (302 rules), the Department of Transportation (253 rules), the Department of Health and Human Services (212 rules), the Department of the Interior (161 rules), the Department of Commerce (113 rules), the Department of Education (109 rules), the Department of Housing and Urban Development (90 rules), and the General Services Administration (85 rules).

Exhibit 2 shows the number of rules reviewed during 1985 by each agency. Rules are classified as either proposed or final, and either major or nonmajor. Of the rules OMB reviewed in 1985, 48.5 percent were proposed and 51.5 percent were final. Major rules constituted 2.7 percent of all rules. Nonmajor final rules were the predominant type of rule reviewed, comprising 49.8 percent of the total of all rules reviewed. The Environmental Protection Agency had the largest number of major proposed rules (5), followed by the Department of Health and Human Services (4), and the Departments of Agriculture and Transportation and the Small Business Administration (3 each). The Departments of Agriculture and Health and Human Services had the largest number of major final rules (8 each), followed by the Environmental Protection Agency (7), and the Department of Transportation (5). Exhibit 3 lists by name all major proposed and final regulations reviewed in 1985.

Exhibit 4 displays changes over the last 5 years in the types of rules reviewed. The total number of rules OMB reviewed in 1985 rose 5.1 percent from 1984 and declined 21.1 percent from 1981. The number of proposed rules in 1985 rose 9.7 percent from 1984 and 7.8 percent from 1981. The number of final rules reviewed in 1985 rose 1.1 percent from 1984 and declined 35.8 percent from 1981. The number of major rules in 1985 increased 1.7 percent from 1984 and decreased 4.8 percent from 1981. The percent-change comparisons with 1981 activity understate somewhat the decline in rulemaking actions, since the Executive Order review process operated for less than a full year in 1981.

Exhibit 5 shows, by agency, the number of rules reviewed during each of the last 5 years. Comparing 1985 with 1981, the greatest percentage decline in the total number of rules occurred at the Department of Energy (-64.2 percent), the Environmental Protection Agency (-58.9 percent), the Department of Labor (-54.2 percent), and the Department of Agriculture (-38.2 percent). The Department of Defense experienced the largest percentage increase (325.0 percent), followed by the National Aeronautics and Space Administration (150.0 percent), the Small Business Administration (90.0 percent), the Office of Personnel Management (81.6 percent), and the Department of Health and Human Services (81.2 percent). However, the large percentage increases for the Department of Defense, the National Aeronautics and Space Administration, and the Small Business Administration are deceptive, since they represent a very small absolute increase in the number of rules.

B. Types of Actions Taken on Rules

Exhibits 6 through 9 summarize the actions taken on agency rules under Executive Order No. 12291 during 1985. Exhibit 10 compares OMB's action during 1985 with actions in previous years.

Of the 2,211 rules revised during 1985, OMB found that 70.7 percent were consistent with the principles of the Executive Order as submitted, 23.1 percent were consistent with the Order after the agency adopted changes during the review period, 1.5 percent OMB found inconsistent with the Order and returned to the agency for reconsideration, and agencies withdrew another 3.1 percent. OMB did not review the remaining 1.2 percent before publication in the *Federal Register* because agencies issued them under the emergency provision of the Executive Order.

Exhibit 6 shows the number of rules in these categories that OMB reviewed during 1985 by each agency. Exhibit 7 shows the percentage of rules in each category for the 20 most active rulemaking agencies.

Exhibit 8 lists by name each of the 34 rules returned for reconsideration in 1985. Exhibit 9 lists by name each of the 69 rules withdrawn during OMB review in 1985. OMB may return regulations for reconsideration if it finds them to be inconsistent with the principles of the Executive Order. Agencies may withdraw rules during review because they have concluded that the rules are inconsistent with the Executive Order or for other reasons. An agency may, for example, wish to incorporate newly acquired information into a rule.

EXHIBIT 1.

EXECUTIVE ORDER 12291

TOTAL REVIEWS - BY AGENCY

1985

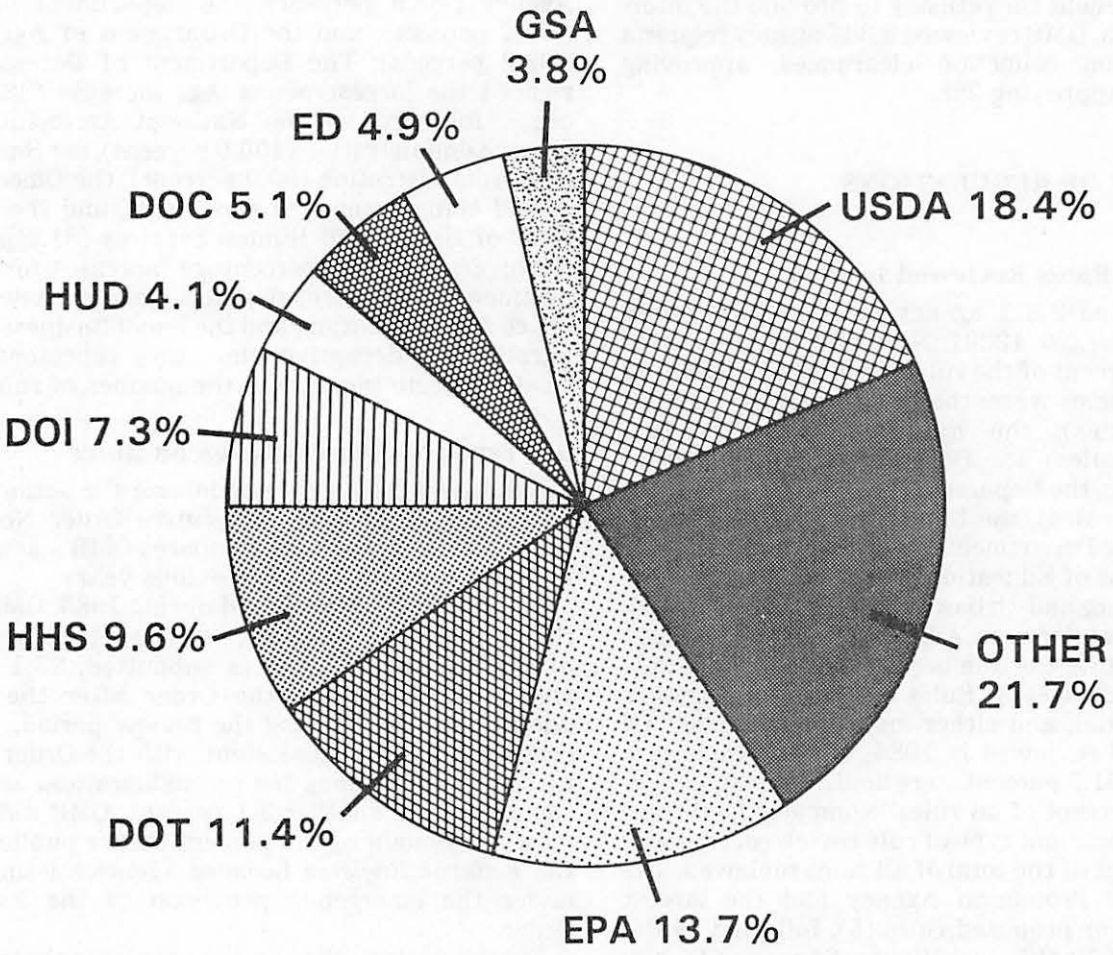

EXHIBIT 2. TYPES OF RULES REVIEWED DURING 1985 BY AGENCY

Agency	Total rules	Nonmajor		Major	
		NPRM	Final	NPRM	Final
Agriculture	406	153	242	3	8
Environmental Protection Agency	302	168	122	5	7
Transportation	253	128	117	3	5
Health and Human Services	212	98	102	4	8
Interior	161	80	77	1	3
Commerce	113	43	70	0	0
Education	109	54	55	0	0
Housing and Urban Development	90	32	58	0	0
General Services Administration	85	45	40	0	0
Justice	78	41	37	0	0
Office of Personnel Management	69	37	32	0	0
Veterans Administration	65	38	27	0	0
Labor	38	24	12	1	1
Federal Emergency Management Agency	26	14	12	0	0
Treasury	26	11	14	0	1
National Aeronautics and Space Administration	25	15	10	0	0
Energy	19	9	9	0	1
Pension Benefit Guaranty Corporation	19	8	11	0	0
Small Business Administration	19	9	3	3	4
Defense	17	5	12	0	0
Railroad Retirement Board	15	8	7	0	0
National Archives and Records Administration	9	5	4	0	0
Panama Canal Commission	9	4	5	0	0
State	7	4	3	0	0
Equal Employment Opportunity Commission	5	3	2	0	0
International Development Cooperation Agency	5	3	2	0	0
United States Information Agency	5	1	4	0	0
Institute of Museum Services	4	1	3	0	0
Selective Service System	4	1	3	0	0
ACTION	2	1	1	0	0
African Development Foundation	2	2	0	0	0
Navajo Hopi Indian Relocation Commission	2	1	1	0	0
Office of Science and Technology Policy	2	1	1	0	0
Pennsylvania Avenue Development Corporation	2	2	0	0	0
Advisory Council on Historic Preservation	1	1	0	0	0
Council on Environmental Quality	1	1	0	0	0
Committee for Purchase from the Blind and Other Severely Handicapped	1	1	0	0	0
Interstate Commerce Commission	1	1	0	0	0
Other Independent Agencies	1	0	1	0	0
Office of the U.S. Trade Representative	1	0	1	0	0
Total	2,211	1,053	1,100	20	38
Percentage of total	100.0	47.6	49.8	0.9	1.7

EXHIBIT 3. MAJOR PROPOSED AND FINAL RULES REVIEWED DURING 1985

Major Proposed Rules Reviewed

Department of Agriculture
- 1986 Wheat Marketing Quota Program
- 1985–86 Milk Price Support
- 1985 Crop Sugar Beets and Sugarcane Loan Rates

Department of Health and Human Services
- Listing of Impairments—Mental Disorders
- Limit on Payments for Direct Medical Education Costs
- Cost of Living Increases: Delayed Retirement Credits; and Maximum Family Benefits
- Changes to Prospective Payment System

Department of the Interior
- Proposed 1985–86 Migratory Game Bird Hunting Regulations

Department of Labor
- Occupational Exposure to Benzene

Department of Transportation
- Vessel Obligation Guarantees, U.S. Construction
- Truck Splash/Spray Suppression Devices
- Passenger Automobile Average Fuel Economy Standard, Model Year 1986

Environmental Protection Agency
- Hazardous Waste Management System—Proposed Codification Rule
- Ban on Lead in Gasoline
- Asbestos Ban Rule
- Asbestos Phase-Down Rule
- Used Oil: Management Standards

Small Business Administration
- Small Business Size Standards, Wholesale Trade
- Small Business Size Standards, Farming
- Business Loan, Interest Rate Procedure

Major Final Rules Reviewed

Department of Agriculture
- 1985 Crop Program Provisions for Rice
- 1985 Crop Program Provisions for Upland Cotton
- Notice of Milk Price Support Level and CCC Purchase Prices
- Conduct of a Producer Referendum With Respect to the 1986 Wheat Marketing Quota Program
- October 1985 Update to Food Stamp Allotments, Standard Deductions, and Shelter/Dependent Care Deduction Limits
- 1986 Upland Cotton Marketing Quota System
- 1985 Crop Sugar Beets and Sugarcane Loan Rates
- 1986 Peanut Crop National Acreage Allotment and National Marketing Quota and Related Determinations

Department of Energy
- Commercial and Apartment Conservation Service
- Federal Standby Plan

Department of Health and Human Services
- Payment to HMOs and Competitive Medical Plans
- New Drug and Antibiotic Regulations
- Medical Support Enforcement
- Changes to the Prospective Payment System and Fiscal Year 1986 Rates
- Limits on Payments for Direct Medical Education Costs
- Schedule of Limits on Home Health Agency Costs per Visit for Cost Reporting Periods Beginning on or After July 1, 1985
- Investigational New Drug (IND) Requirements
- 20 CFR 404 and 20 CFR 416—Standards of Review for Termination of Disability Benefits; Revised Rules for Certain Medical Cessation Cases

Department of the Interior
- Final Frameworks for Selecting Early Hunting Seasons on Certain Migratory Game Birds in the U.S. for the 1985–86 Season
- Migratory Bird Regulations on Certain Federal Indian Reservations, Indian Territory, and Ceded Lands
- Final Frameworks for Late Migratory Game Bird Hunting Regulations

Department of Labor
- Standards for Occupational Exposure to Cotton Dust

Department of Transportation
- Light Truck Fuel Economy Standard for Model Year 1987
- Segregated Ballast, Dedicated Clean Ballast, and Crude Oil Washing on Tankships of 20,000 DWT or More But Less Than 40,000 DWT Carrying Oil in Bulk
- Construction Differential Subsidy Repayment Policy
- Passenger Automobile Average Fuel Economy Standard, Model Year 1986
- Vessel Obligation Guarantees, U.S. Construction

Treasury Department
- Minimum Capital Requirements for National Banks, Issuance of Directives

Environmental Protection Agency
- Hazardous Waste Management System—Final Codification Rule
- National Ambient Air Quality Standards for Carbon Monoxide
- National Ambient Air Quality Standards for Nitrogen Dioxide
- NOX Emission Standards for Light-Duty Trucks and Heavy-Duty Engines and Particulate Emissions for Heavy-Duty Diesel Engines
- Phase-Down of Lead in Gasoline
- Stack Height Regulations
- Use Prohibitions and Restrictions for Electrical Transformers Containing PCB

Small Business Administration
- Business Loans
- Minority Small Business and Capital Ownership Development Assistance
- Business Loans, Secondary Marketing Procedures
- Small Business Size Standards, Dredging

EXHIBIT 4. COMPARISON OF RULES REVIEWED DURING 1981–85 BY TYPE

Type of rule	Number					Percent change				
	1981	1982	1983	1984	1985	1981–82	1982–83	1983–84	1984–85	1981–85
Nonmajor:										
Proposed	971	1,024	1,044	945	1,053	5.5	2.0	-9.5	11.4	8.4
Final	1,735	1,528	1,377	1,101	1,100	-11.9	-9.9	-20.0	-0.1	-36.6
Total	2,706	2,552	2,421	2,046	2,153	-5.7	-5.1	-15.5	5.2	-20.4
Major:										
Proposed	24	29	22	33	20	20.8	-24.1	50.0	-39.4	-16.7
Final	38	51	39	25	38	34.2	-23.5	-35.9	52.0	0.0
Total	62	80	61	58	59	29.0	-23.8	-4.9	1.7	-4.8
All:										
E.O. Not Applicable	35	1	0	0	0	-97.1	-100.0	NA	NA	-100.0
Proposed	995	1,053	1,066	978	1,073	5.8	1.2	-8.3	9.7	7.8
Final	1,773	1,579	1,416	1,126	1,138	-10.9	-10.3	-20.5	1.1	-35.8
Total	2,803	2,633	2,482	2,104	2,211	-6.1	-5.7	-15.2	5.1	-21.1

EXHIBIT 5. TWENTY MOST ACTIVE RULE-PRODUCING AGENCIES, COMPARISON OF RULES REVIEWED 1981–85

Agency	Number					Percent change				
	1981	1982	1983	1984	1985	1981–82	1982–83	1983–84	1984–85	1981–85
USDA	657	692	551	480	406	5.3	-20.4	-12.9	-15.4	-38.2
EPA	734	340	268	302	302	-53.7	-21.2	12.7	0.0	-58.9
DOT	285	225	225	217	253	-21.1	0.0	-3.6	16.6	-11.2
HHS	117	272	294	198	212	132.5	8.1	-32.7	7.1	81.2
DOI	147	248	240	132	161	68.7	-3.2	-45.0	22.0	9.5
DOC	162	147	121	107	113	-9.3	-17.7	-11.6	5.6	-30.2
ED	77	52	50	104	109	-32.5	-3.8	108.0	4.8	41.6
HUD	74	130	111	108	90	75.7	-14.6	-2.7	-16.7	21.6
GSA	56	62	85	62	85	10.7	37.1	-27.1	37.1	51.8
DOJ	53	51	72	46	78	-3.8	41.2	-36.1	69.6	47.2
OPM	38	49	65	45	69	28.9	32.7	-30.8	53.3	81.6
VA	69	70	69	70	65	1.4	-1.4	1.4	-7.1	-5.8
DOL	83	49	49	35	38	-41.0	0.0	-28.6	8.6	-54.2
FEMA	16	6	29	16	26	-62.5	383.3	-44.8	62.5	62.5
TREAS	34	33	53	44	26	-2.9	60.6	-17.0	-40.9	-23.5
NASA	10	11	13	11	25	10.0	18.2	-15.4	127.3	150.0
DOE	53	49	34	25	19	-7.5	-30.6	-26.5	-24.0	-64.2
PBGC	21	12	9	10	19	-42.9	-25.0	11.1	90.0	-9.5
SBA	10	16	20	31	19	60.0	25.0	55.0	-38.7	90.0
DOD	4	9	13	7	17	125.0	44.4	-46.2	142.9	325.0

Exhibit 10 compares OMB actions on agency rules during the past 5 years. The percentage of rules OMB found consistent with the Executive Order declined from 87.3 percent in 1981, to 70.7 percent in 1985. At the same time, the percentage of rules OMB found consistent after change increased from 4.9 percent in 1981 to 23.1 percent in 1985. The percentage of rules that agencies withdrew in 1985 increased to 3.1 percent from 1.8 percent in 1981. The percentage of rules that OMB returned for agency reconsideration has fluctuated over the years but was 1.5 percent in 1985 compared to 1.6 percent in 1981. The percentage of rules issued by agencies under emergency, statutory, or judicial deadlines did not appreciably change between 1981 and 1985.

Exhibit 11 shows OMB's average regulatory review time by agency from 1981 to 1985 for all rules, as well as specifically for major and nonmajor rules. Generally, review time for major rules is longer than for nonmajor rules because of their greater complexity and importance. In 1981, OMB's average review time for all rules was 9 days; in 1985, it was 27 days. From 1981 to 1985, the average review time for all rules was 16 days.

EXHIBIT 6. TYPES OF ACTIONS TAKEN ON AGENCY RULES DURING 1985

Agency	Total reviews	Consistent without change	Consistent with change	Withdrawn by agency	Returned for reconsideration	Returned sent improperly	Emergency	Statutory or judicial deadline
Agriculture	406	330	59	12	1	4	0	0
Environmental Protection Agency	302	200	86	12	1	1	0	2
Transportation	253	156	86	7	0	0	4	0
Health and Human Services	212	139	63	4	6	0	0	0
Interior	161	115	40	2	1	0	3	0
Commerce	113	84	8	3	0	0	8	10
Education	109	55	48	6	0	0	0	0
Housing and Urban Development	90	48	28	5	9	0	0	0
General Services Administration	85	68	15	0	1	1	0	0
Justice	78	72	6	0	0	0	0	0
Office of Personnel Management	69	59	7	1	2	0	0	0
Veterans Administration	65	42	17	4	2	0	0	0
Labor	38	22	10	1	5	0	0	0
Federal Emergency Management Agency	26	24	1	1	0	0	0	0
Treasury	26	21	5	0	0	0	0	0
National Aeronautics and Space Administration	25	18	6	0	1	0	0	0
Energy	19	15	3	1	0	0	0	0
Pension Benefit Guaranty Corporation	19	12	5	2	0	0	0	0
Small Business Administration	19	15	1	0	3	0	0	0
Defense	17	13	2	2	0	0	0	0
Railroad Retirement Board	15	8	6	1	0	0	0	0
National Archives and Records Administration	9	9	0	0	0	0	0	0
Panama Canal Commission	9	8	1	0	0	0	0	0
State	7	7	0	0	0	0	0	0
Equal Employment Opportunity Commission	5	1	2	1	1	0	0	0
International Development Corporation Agency	5	4	1	0	0	0	0	0
United States Information Agency	5	4	0	1	0	0	0	0
Institute of Museum Services	4	3	0	0	0	1	0	0
Selective Service System	4	4	0	0	0	0	0	0
ACTION	2	1	0	1	0	0	0	0
African Development Foundation	2	2	0	0	0	0	0	0
Navajo Hopi Indian Relocation Commission	2	1	1	0	0	0	0	0
Office of Science and Technology Policy	2	0	1	1	0	0	0	0
Pennsylvania Avenue Development Corporation	2	1	0	0	1	0	0	0
Advisory Council on Historic Preservation	1	0	1	0	0	0	0	0
Council on Environmental Quality	1	1	0	0	0	0	0	0
Committee for Purchase from the Blind and Other Severely Handicapped	1	0	1	0	0	0	0	0
Interstate Commerce Commission	1	0	0	1	0	0	0	0
Other Independent Agencies	1	1	0	0	0	0	0	0
Office of the U.S. Trade Representative	1	1	0	0	0	0	0	0
Total	2,211	1,564	510	69	34	7	15	12
Percentage of total	100.0	70.7	23.1	3.1	1.5	0.3	0.7	0.5

EXHIBIT 7. TYPES OF ACTIONS TAKEN ON AGENCY RULES DURING 1985 BY PERCENTAGE

Agency	Total reviews	Percentage						
		Consistent without change	Consistent with change	Withdrawn by agency	Returned for reconsideration	Returned sent improperly	Emergency	Statutory or judicial deadline
Agriculture	406	81.3	14.5	3.0	0.2	1.0	0.0	0.0
Environmental Protection Agency	302	66.2	28.5	4.0	0.3	0.3	0.0	0.7
Transportation	253	61.7	34.0	2.8	0.0	0.0	1.6	0.0
Health and Human Services	212	65.6	29.7	1.9	2.8	0.0	0.0	0.0
Interior	161	71.4	24.8	1.2	0.6	0.0	1.9	0.0
Commerce	113	74.3	7.1	2.7	0.0	0.0	7.1	8.8
Education	109	50.5	44.0	5.5	0.0	0.0	0.0	0.0
Housing and Urban Development	90	53.3	31.1	5.6	10.0	0.0	0.0	0.0
General Services Administration	85	80.0	17.6	0.0	1.2	1.2	0.0	0.0
Justice	78	92.3	7.7	0.0	0.0	0.0	0.0	0.0
Office of Personnel Management	69	85.5	10.1	1.4	2.9	0.0	0.0	0.0
Veterans Administration	65	64.6	26.2	6.2	3.1	0.0	0.0	0.0
Labor	38	57.9	26.3	2.6	13.2	0.0	0.0	0.0
Federal Emergency Management Agency	26	92.3	3.8	3.8	0.0	0.0	0.0	0.0
Treasury	26	80.8	19.2	0.0	0.0	0.0	0.0	0.0
National Aeronautics and Space Administration	25	72.0	24.0	0.0	4.0	0.0	0.0	0.0
Energy	19	78.9	15.8	5.3	0.0	0.0	0.0	0.0
Pension Benefit Guaranty Corporation	19	63.2	26.3	10.5	0.0	0.0	0.0	0.0
Small Business Administration	19	78.9	5.3	0.0	15.8	0.0	0.0	0.0
Defense	17	76.5	11.8	11.8	0.0	0.0	0.0	0.0
All Other	79	70.9	17.7	7.6	2.5	1.3	0.0	0.0
Total	2,211	70.7	23.1	3.1	1.5	0.3	0.7	0.5

EXHIBIT 8. REGULATIONS RETURNED TO AGENCIES FOR RECONSIDERATION DURING 1985

Agency/Title of regulation	Rule type	Date received	Date reviewed
United States Department of Agriculture:			
Reinstatement of Flavored Milk in WIC Food Packages	Final	9/5/85	10/24/85
Department of Health and Human Services:			
Implementation of Title III and Title IV Revisions of the Older Americans Act	Final	1/31/85	3/13/85
Primary Block Grant Program	NPRM	5/3/84	5/8/85
Regulations Under the Tea Importation Act—Tea Standards	Final	5/30/84	5/6/85
Anthelminetic Drug Products For Over-the-Counter Human Use	Final	3/9/84	5/6/85
Medicaid Overpayment Reporting Requirements	Final	3/6/85	8/19/85
Principles for Determining Costs and Cost Allocation Procedures Applicable to Grants, Contracts, and Other Agreements for Work Performed by Hospitals	NPRM	9/14/84	9/9/85
Department of Housing and Urban Development:			
Manufactured Home Construction and Safety Standards	Final	1/11/85	3/15/85
PHA-Owned Projects—Maintenance and Operation, Individual Metering of Utilities for Existing PHA-Owned Public Housing Projects	Final	6/24/85	8/8/85
Section B Housing and Assistance Payments Program Fair Market Rent Schedules—Existing Housing	NPRM	7/30/85	9/19/85
Insured Maximum Mortgage Amount for Hospitals	Final	7/25/85	10/15/85
Mortgage Insurance Requirements for Private and Public Hospitals	Final	8/5/85	10/15/85
Pet Ownership in Assisted Housing for the Elderly or Handicapped	Final	8/30/85	10/29/85
Indian Preference	NPRM	8/20/85	10/30/85
Revision of Maximum Insurable Mortgage Amount—Refinancing of Existing Multifamily Housing Projects	NPRM	8/20/85	11/26/85
Insurance of Partially Amortizing Mortgages and Call Provision Mortgages	Final	8/29/85	11/26/85
Department of the Interior:			
Sale of Royalty-in-Kind Crude Oil	NPRM	7/19/84	6/21/85
Department of Labor:			
Scaffolds—29 CFR 1926, Subpart L	NPRM	7/30/84	2/20/85
Stairways and Ladders—29 CFR 1926, Subpart X	NPRM	7/30/84	2/20/85
Request for Comments: Revised Lead Standard	NPRM	11/25/83	2/20/85

EXHIBIT 8. REGULATIONS RETURNED TO AGENCIES FOR RECONSIDERATION DURING 1985—Continued

Agency/Title of regulation	Rule type	Date received	Date reviewed
Fall Protection—29 CFR 1926, Subpart M	NPRM	7/30/84	2/20/85
Personal Fall Protection Systems	NPRM	6/20/85	10/31/85
Environmental Protection Agency:			
National Primary Drinking Water Regulation: Fluoride RMCL	NPRM	3/22/85	4/26/85
Equal Employment Opportunity Commission:			
Apprenticeship Programs	NPRM	7/17/84	12/5/85
General Services Administration:			
Records and Forms Management Responsibilities	NPRM	11/29/84	2/1/85
National Aeronautics and Space Administration:			
Protection of Human and Animal Research Subjects	NPRM	4/29/85	5/9/85
Office of Personnel Management:			
Employment Practices	NPRM	11/27/84	1/10/85
Promotion and Internal Placement	NPRM	7/25/85	11/6/85
Pennsylvania Avenue Development Corporation:			
Restrictions on the Placement and Maintenance of Newspaper Vending Machines	NPRM	5/16/85	9/3/85
Small Business Administration:			
Amendment to Loans to State and Local Development Companies	NPRM	3/28/85	5/12/85
Small Business Size Standards, Farming	NPRM	4/23/85	6/22/85
Small Business Size Standards, Tuna Fishing	NPRM	3/28/85	9/30/85
Veterans Administration:			
Treatment of CHAMPUS Beneficiaries in Non-VA Health Care Facilities at VA Expense	NPRM	12/15/83	10/21/85
Emergency Job Training, Appellate Rights for Employers	NPRM	8/21/85	8/31/85

EXHIBIT 9. REGULATIONS WITHDRAWN BY AGENCIES DURING 1985

Agency/Title of Regulation	Rule type	Date received	Date returned
United States Department of Agriculture:			
Claim for Indemnity, Interest Payments	Final	1/7/85	1/8/85
National School Lunch Program and Determining Eligibility for Free and Reduced Price Meals and Milk in Schools—Verification Monitoring	NPRM	10/19/84	2/4/85
Overtime Work at Border Ports, Ocean Ports, and Airports	Final	1/10/85	5/13/85
Floodplain Management and Wetland Protection	Final	8/19/85	10/23/85
Overtime Work at Laboratories, Border Ports, Ocean Ports, and Airports	Final	1/10/85	5/13/85
Individual Identification Devices for Cattle and Swine	Final	10/23/85	10/25/85
Feed Grain, Rice, Cotton, and Wheat Programs for 1984 and Subsequent Crop Years	Final	11/26/85	12/23/85
Financing of Commercial Sales of Agricultural Commodities	Final	12/10/85	12/20/85
Eligibility of Certain Publicly Operated Community Health Centers	Final	12/3/85	12/18/85
Land Uses, Local Resident, Tongass National Forest	NPRM	5/13/85	8/13/85
Power Requirement Study	NPRM	3/5/85	9/30/85
Proposed Addition of Part 1746, General Funds, to 7 CFR	NPRM	7/9/84	9/30/85
Department of Commerce:			
Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements	Final	8/7/85	8/14/85
Licensing of Ocean Thermal Energy Conversion Facilities and Plantships	NPRM	3/12/85	6/17/85
Ocean Salmon Fisheries off the Coasts of Washington, Oregon, and California	Final	7/21/85	8/2/85
Department of Defense:			
Environmental Quality Procedures for Implementing the National Environmental Policy Act (NEPA)	Final	1/15/85	10/31/85
Processing of Department of the Army Permits, Procedures for the Protection of Historic Properties	Final	12/21/84	3/25/85
Department of Education:			
Removal of Architectural Barriers to the Handicapped Program	Final	3/18/85	5/10/85
Annual Funding Priorities—Auxiliary Activities: Innovative Programs for Severely Handicapped Children	NPRM	3/13/85	3/14/85
Pell Grant Program	Final	12/24/84	2/7/85
Student Assistance General Provisions	NPRM	11/19/84	1/9/85
Graduate Academic Facilities Program	NPRM	11/15/85	12/23/85
Guaranteed Student Loan Program and PLUS Program	NPRM	11/13/84	3/11/85
Department of Energy:			
State Petitions for Exemption From Federal Preemption of State Consumer Product Energy Standards	Final	6/10/85	6/20/85
Department of Health and Human Services:			
Revised Medical Criteria for the Determination of Disability	Final	10/31/84	5/17/85
42 CFR Subpart L—Grants for Dentistry Residency Training	Final	12/3/85	12/5/85
Standards for Consultative Examinations and Existing Medical Evidence	NPRM	7/3/85	12/20/85
20 CFR 416; Subpart P—Residence and Citizenship	NPRM	10/23/84	2/12/85

EXHIBIT 9. REGULATIONS WITHDRAWN BY AGENCIES DURING 1985—Continued

Agency/Title of Regulation	Rule type	Date received	Date returned
Department of Housing and Urban Development:			
Administrative Claims, Implementing the Deficit Reduction Act	Final	7/29/85	10/1/85
HUD Acquisition Regulation	NPRM	2/4/85	2/14/85
Disclosure of Profit and Loss Information to Potential Purchasers of HUD-Held Mortgages	NPRM	4/3/85	4/23/85
Revision to the Definition of Income Resulting From Consultation With Farmers Home Administration	NPRM	11/29/84	4/16/85
Public Housing Lease Requirements, Eviction, and Hearings	NPRM	9/4/84	1/7/85
Department of the Interior:			
Surface Coal Mining Reclamation Operations—Application Fee	NPRM	12/20/84	1/9/85
Audit Requirements for State and Local Governments Receiving Assistance Through the U.S. Department of the Interior	Final	4/11/85	4/17/85
Department of Labor:			
Federal-State Unemployment Compensation Program Unemployment Insurance Quality Control Program	NPRM	3/13/85	7/5/85
Department of Transportation:			
Intergovernmental Review of DOT Programs and Activities	NPRM	7/20/84	8/19/85
Policy Statement—Ultralights	NPRM	4/12/85	9/10/85
Noise Standards for Helicopters in the Normal Transport, and Restricted Categories	NPRM	11/12/85	12/27/85
Emergency Relief	NPRM	2/13/85	3/5/85
Elimination of Airport Delays—Deviations	Final	11/2/84	4/5/85
Elimination of Airport Delays—Enforcement of Scheduling Agreements	Final	11/2/84	4/5/85
Employment Discrimination Against Handicapped Persons, Aviation	NPRM	6/5/84	8/1/85
Environmental Protection Agency:			
Proposed Amendments to Ocean Dumping Regulations	NPRM	1/11/85	8/5/85
2-Methoxyethanol, 2-Methoxyethanol Acetate Partial Ban	Final	8/19/85	8/22/85
Petroleum Refining Point Source Effluent Limitations	Final	4/8/85	6/6/85
Pirimicarb, Proposed Revocation of Tolerance	NPRM	6/17/85	6/27/85
Iron and Steel Manufacturing Effluent Limitations	NPRM	7/24/84	2/15/85
Asbestos Ban Rule	NPRM	5/14/84	1/31/85
Asbestos Phase-Down Rule	NPRM	8/15/84	1/31/85
Florida Plan for Total Reduced Sulphur	NPRM	11/20/85	12/3/85
Hazardous Waste Management System—Proposed Codification Rule	NPRM	7/12/85	11/19/85
Hazardous Waste Management System—Interim Final Codification Rule	NPRM	12/7/84	3/21/85
RCRA Location Guidance	NPRM	9/19/85	11/19/85
SNUR for 11-Aminocide and Methy N-Butyl Ketone	NPRM	5/31/85	10/24/85
ACTION:			
Grants and Contracts—Denial of Application for Refunding	Final	10/10/85	10/20/85
Equal Employment Opportunity Commission:			
Substantive Regulations Implementing ADEA	Final	8/14/85	12/24/85
Federal Emergency Management Agency:			
Disaster Assistance—the Declaration Process, Public Assistance, Project Administration	NPRM	10/24/85	11/21/85
Interstate Commerce Commission:			
ICC Administrative Issuance 5-115	NPRM	1/22/85	1/29/85
Office of Personnel Management:			
Proposed Regulations for the Federal Wage System	NPRM	8/6/85	8/16/85
Office of Science and Technology Policy:			
Proposed Model Policy for the Protection of Human Subjects	NPRM	5/22/85	12/17/85
Pension Benefit Guaranty Corporation:			
Effect of the Deficit Reduction Act on the Withdrawal Liability Provisions of MPPAA	NPRM	1/29/85	2/7/85
Valuation of Plan Benefits in Non-Multiemployer Plans	NPRM	4/2/85	4/30/85
Railroad Retirement Board:			
Evidence Required for Payment	NPRM	2/5/85	2/8/85
United States Information Agency:			
Exchange Visitor Program	NPRM	12/16/85	12/23/85

EXHIBIT 10. TYPES OF ACTIONS TAKEN ON AGENCY RULES—PERCENTAGE COMPARISON 1981–85[1]

Action taken	Percentage in					Percentage change				
	1981	1982	1983	1984	1985	81–82	82–83	83–84	84–85	81–85
Consistent without change	87.3	84.1	82.3	78.0	70.7	-3.2	-1.8	-4.3	-7.3	-16.6
Consistent with change	4.9	10.3	12.7	15.1	23.1	5.4	2.4	2.4	8.0	18.2
Withdrawn by agency	1.8	1.2	1.6	2.4	3.1	-0.6	0.4	0.8	0.7	1.3
Returned for reconsideration	1.6	2.1	1.3	2.7	1.5	0.5	-0.8	1.4	-1.2	-0.1
Sent improperly or exempt	3.1	0.9	0.0	0.0	0.3	-2.2	-0.9	0.0	0.3	-2.8
Emergency, statutory, or judicial deadline	1.4	1.4	2.0	1.7	1.2	0.0	0.6	-0.3	-0.5	-0.2

[1]Percentages may not add to 100.0 percent due to rounding.

EXHIBIT 11. AVERAGE REVIEW TIME OF RULES UNDER EXECUTIVE ORDER NO. 12291
(in days)

	1981			1982			1983		
	Major	Nonmajor	All	Major	Nonmajor	All	Major	Nonmajor	All
USDA	22	8	8	17	10	10	15	13	13
DOC	8	6	8	22	9	10	5	11	11
DOD	NA	9	9	NA	6	6	NA	16	16
ED	NA	8	8	32	12	13	NA	11	11
DOE	7	7	7	26	6	7	45	7	9
HHS	8	7	7	21	10	11	35	18	19
HUD	NA	14	14	NA	11	11	12	15	15
DOI	6	8	8	13	10	10	12	17	17
DOJ	NA	6	6	NA	7	7	NA	14	14
DOL	26	6	9	37	10	12	121	18	29
State	NA	9	9	NA	7	7	28	10	16
DOT	8	8	8	37	12	12	24	15	15
TREAS	1	8	8	60	13	14	NA	12	12
EPA	12	9	9	88	17	19	14	22	22
Other agencies	5	10	10	40	13	14	35	14	14
All government	13	9	9	28	11	12	28	15	16

	1984			1985			1981–85		
	Major	Nonmajor	All	Major	Nonmajor	All	Major	Nonmajor	All
USDA	11	19	19	15	19	19	16	13	13
DOC	316	14	17	NA	12	12	35	11	11
DOD	NA	30	30	NA	30	30	NA	20	20
ED	39	18	19	NA	16	16	34	14	14
DOE	77	9	12	30	7	8	30	7	8
HHS	3	33	33	74	46	47	40	23	24
HUD	10	18	17	NA	27	27	11	17	16
DOI	7	17	17	5	19	19	9	14	14
DOJ	NA	10	10	NA	9	9	NA	10	10
DOL	NA	43	43	173	55	61	67	24	27
State	NA	5	5	NA	16	16	28	9	10
DOT	42	20	21	80	34	36	40	18	18
TREAS	17	18	18	16	13	13	24	13	13
EPA	58	30	31	78	33	35	61	19	20
Other agencies	26	20	20	105	23	25	43	16	16
All government	31	22	22	64	26	27	32	16	16

C. Exemptions

Executive Order No. 12291 authorizes the Director of OMB to exempt classes of regulations from any or all of the requirements of the Order. The exemptions granted by OMB fall into four broad categories: (1) rules that are essentially nonregulatory; (2) rules that delegate regulatory authority to States; (3) rules that largely or entirely affect individual entities and that do not involve broader policy issues; and (4) rules for which a delay of even a few days could impose substantial costs and that are unlikely to involve significant policy issues.

At the end of 1985, OMB had granted a total of 29 exemptions (some covering more than one of the categories above) to 8 agencies. Exhibit 12 lists these exemptions. Most of the exemptions were established during the initial years of the operation of the Executive Order. In each case, OMB determined that the exempted regulations, as a class, were consistent with the goals and requirements of the Executive Order. OMB continues to review all "major" rules as defined by the Executive Order regardless of class exemptions. OMB may request that agencies submit specific rules within an exempt class and may revoke exemptions at any time.

IV. TRENDS IN REGULATORY ACTIVITY

Because there are no precise or agreed-upon measures of regulatory activity, we cannot measure exactly the effect Executive Order No. 12291 has had on regulatory activity. It is useful, however, to compare the number of pages and the number of total rule documents (proposed rule documents plus final rule documents) published in the *Federal Register* during different time periods.

Exhibit 13 shows the number of pages published in the *Federal Register* from its inception in 1936 through 1985. There was little year-to-year change until the 1970s, when the size of the *Federal Register* increased dramatically. Exhibit 14 shows the number of pages published in the *Federal Register* each month during the Carter and Reagan Administrations and illustrates the effects of Executive Order No. 12291 on the size of the *Federal Register*.

In 1981, the year Executive Order No. 12291 went into effect, the growth in the *Federal Register* ended. In each of the first 4 years of the Reagan Administration, the number of pages published in the *Federal Register* decreased—there were 41.4 percent fewer pages in the *Federal Register* in 1984 than in 1980. In 1985, the number of pages rose modestly by 4.87 percent over 1984 levels.

Exhibit 15 depicts the total number of proposed and final rule documents published in the Carter and Reagan Administrations. This chart parallels the exhibit for pages published and also indicates that since Executive Order No. 12291 was issued, Federal regulatory activity has decreased.

Exhibits 16, 17, and 18 provide various measures of regulatory activity during the Reagan Administration.

EXHIBIT 12. AGENCY RULES EXEMPTED FROM REVIEW PROCEDURES

DEPARTMENT OF AGRICULTURE

Food and Nutrition Service—Special Nutrition program notices that revise reimbursement rates and eligibility criteria for the School Lunch, Child Care Food, and other nutrition programs.

Food and Nutrition Service—Food Stamp program notices that set eligibility criteria and deduction policies.

Agriculture Marketing Service—Regulations that establish voluntary standards for grading the quality of food.

Animal and Plant Health Inspection Service—Rules and notices concerning quarantine actions and related measures to prevent the spread of animal and plant pests and diseases.

Animal and Plant Health Inspection Service—Rules affirming actions taken on an emergency basis if no adverse comments were received.

Rural Electrification Administration—Rules concerning standards and specifications for construction and materials.

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration—Certain time-sensitive preseason and in-season Fishery Management Plan regulatory actions that set restrictions on fishing seasons, catch size, and fishing gear.

DEPARTMENT OF ENERGY

Power Marketing Administrations—Regulations issued by various power administrations relating to the sale of electrical power that they produce or market.

DEPARTMENT OF THE INTERIOR

Office of Surface Mining—Actions to approve, or conditionally approve, State regulatory mining actions or amendments to such actions.

Office of Surface Mining—Approval of State mining reclamation plans or amendments.

Office of Surface Mining—Cooperative agreements between OSM and States.

United States Fish and Wildlife Service—Certain parts of the annual migratory bird hunting regulations.

DEPARTMENT OF TRANSPORTATION

All Offices of DOT—Amendments that postpone the compliance dates of regulations already in effect.

Coast Guard—Regatta regulations, safety zone regulations, and security zone regulations.

Coast Guard—Anchorage, drawbridge operations, and inland waterways navigation regulations.

Coast Guard—Regulations specifying amount of separation required between cargoes containing incompatible chemicals.

Federal Aviation Administration—Standard instrument approach procedure regulations, en route altitude regulations, routine air space actions, and airworthiness directives.

National Highway Traffic and Safety Administration—Federal Motor Vehicle Safety Standard 109 table of tire sizes.

DEPARTMENT OF THE TREASURY

Internal Revenue Service, Bureau of Alcohol, Tobacco and Firearms, and Customs Service—Revenue rulings and procedures, Customs decisions, legal determinations, and other similar ruling documents. Major legislative regulations are covered fully.

ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticides and Toxic Substances—Actions regarding pesticide tolerances, temporary tolerances, tolerance exemptions and food additives regulations, except those that make an existing tolerance more stringent.

Office of Pesticides and Toxic Substances—Unconditional approvals of TSCA Section 5 test marketing exemptions, and of experimental use permits under FIFRA.

Office of Pesticides and Toxic Substances—Decision documents defining and establishing registration standards; decision documents and termination decisions for the RPAR process; and data call-in requests made under Section 3(c)(2)(B) of FIFRA.

Office of Air, Noise, and Radiation—Rules that unconditionally approve revisions to State Implementation Plans.

Office of Air, Noise, and Radiation—Unconditional approvals of equivalent methods for ambient air quality monitoring, and of NSPS, NESHAPS, and PSD delegations to States; approvals of carbon monoxide and nitrogen oxide waivers; area designations of air quality planning purposes; and deletions from the NSPS source categories list.

Office of Water—Unconditional approvals of State Water Standards.

Office of Water—Unconditional approval of State underground injection control programs; delegations of NPDES authority to States; deletions from the 307(a) list of toxic pollutants; and suspensions of Toxic Testing Requirements under NPDES.

Office of Solid Waste and Emergency Responses—Unconditional approvals of State authorization under RCRA, of State solid waste management plans, and of hazardous waste delisting petitions under RCRA.

PENSION BENEFIT GUARANTY CORPORATION

Interest Rates—Changes in interest rates on late premium payments and delinquent employer liability payments under Sections 6601 and 6621 of the Internal Revenue Code as amended by the Tax Equity and Fiscal Responsibility Act of 1982.

GOVERNMENTWIDE

Office of Federal Procurement Policy—All regulations, except those concerning acquisition of automatic data processing and telecommunications equipment; those implementing and supplementing Federal Acquisition Regulation Subparts 15.6 (Source Selection) and 32.5 (Progress Payments Based on Costs); and those implementing and supplementing the Competition in Contracting Act of 1984 (Public Law 98–3691), the Defense Procurement Reform Act of 1984 (Title XII, Public Law 98–525), and the Small Business and Federal Procurement Competition Enforcement Act of 1984 (Public Law 98–577).

EXHIBIT 13.

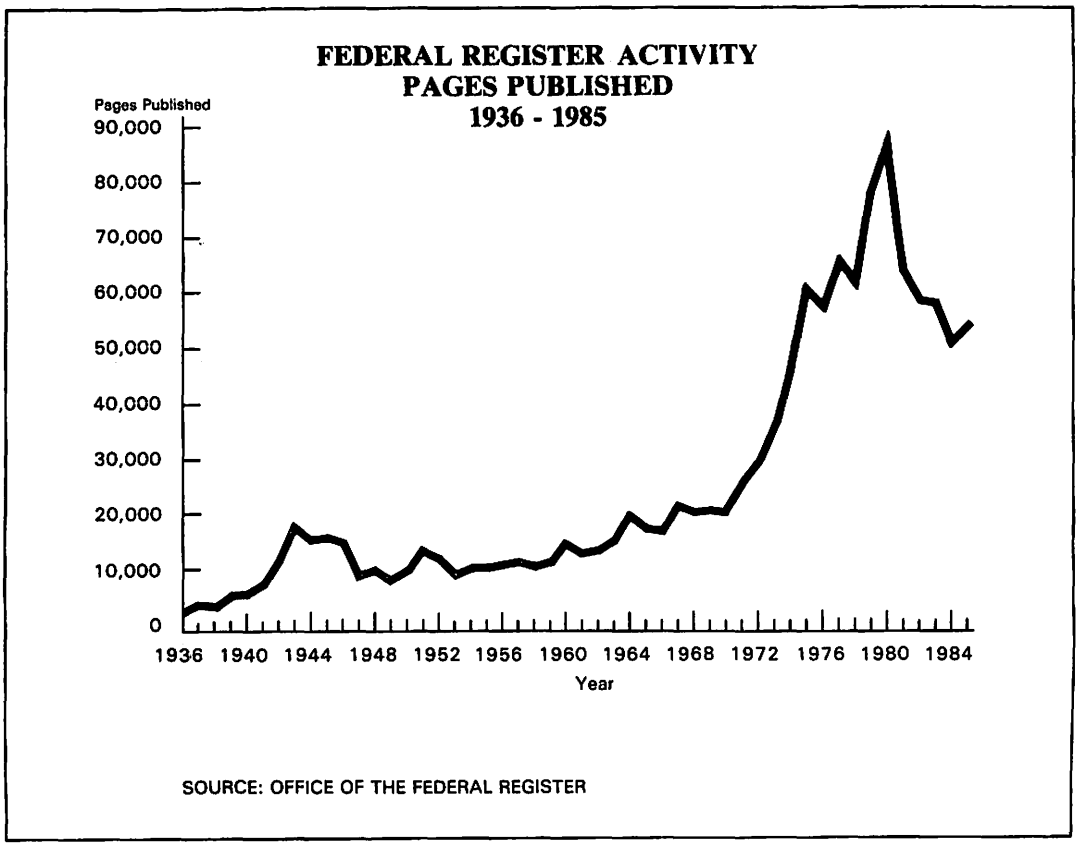

EXHIBIT 14.

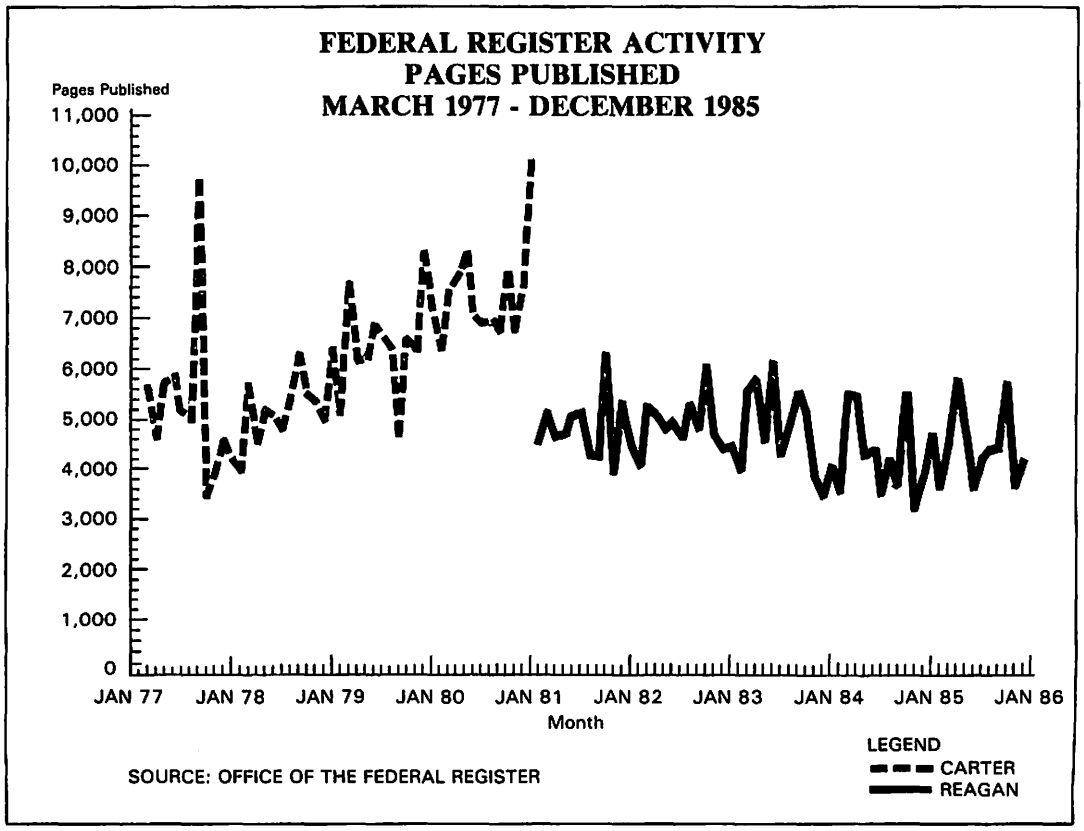

EXHIBIT 15.

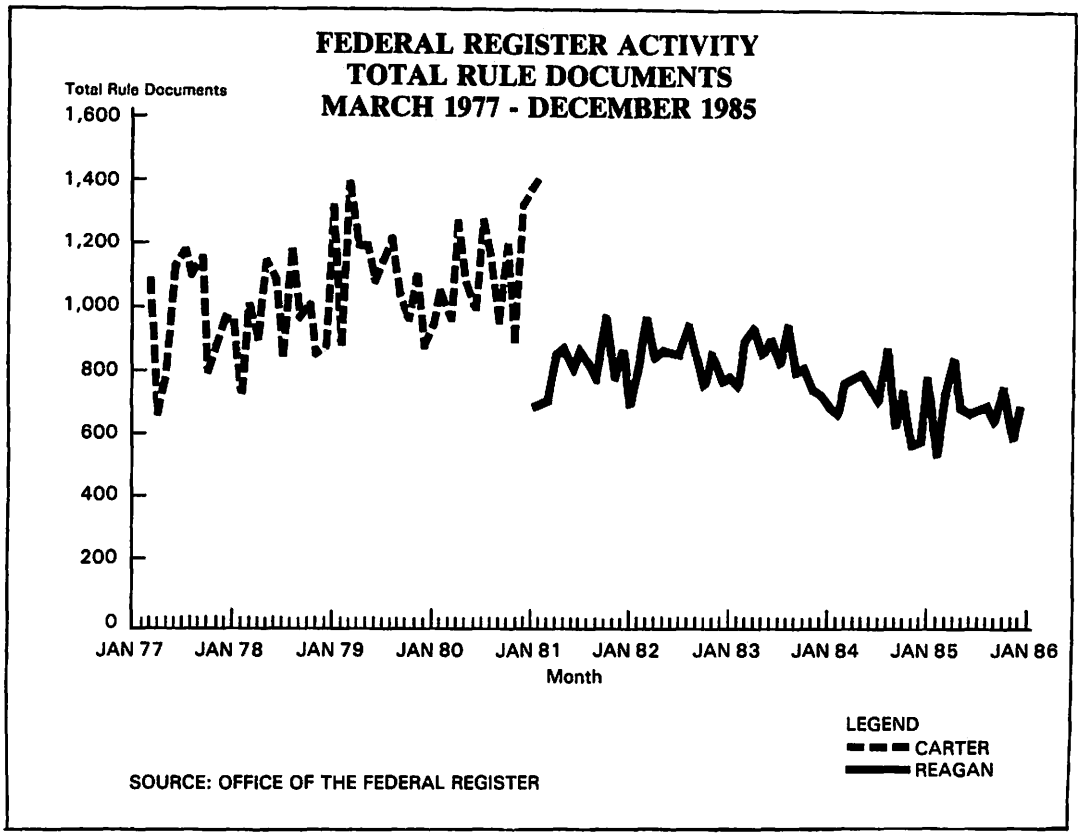

EXHIBIT 16. COMPARISON OF PAGES AND DOCUMENTS PUBLISHED IN THE *FEDERAL REGISTER* 1980–85

	1980	1981	1982	1983	1984	1985
Total pages published	87,012	63,554	58,494	57,704	50,998	53,480
Average pages per month	7,251	5,296	4,875	4,809	4,250	4,457
Percent change year to year	NA	-27.0	-8.0	-1.4	-11.6	4.9
Percent change from 1980	NA	-27.0	-32.8	-33.7	-41.4	-38.5
Proposed rule documents	5,347	3,862	3,729	3,906	3,350	3,381
Average documents per month	446	322	311	326	279	282
Percent change year to year	NA	-27.8	-3.4	4.7	-14.2	0.9
Percent change from 1980	NA	-27.8	-30.3	-26.9	-37.3	-36.8
Final rule documents	7,745	6,401	6,288	6,049	5,155	4,843
Average documents per month	645	533	524	504	430	404
Percent change year to year	NA	-17.4	-1.8	-3.8	-14.8	-6.1
Percent change from 1980	NA	-17.4	-18.8	-21.9	-33.4	-37.5

EXHIBIT 17. ANALYSIS OF FINAL RULE DOCUMENTS PUBLISHED IN THE *FEDERAL REGISTER* 1982–85

	1982		1983		1984		1985	
	Final rules	Percent of total	Final rules	Percent of total	Final rules	Percent of total	Final rules	Percent of total
New requirements	294	4.7	248	4.1	260	5.0	358	7.4
Revisions to existing requirements	1,530	24.3	1,430	23.6	1,350	26.2	1,255	25.9
Elimination of existing requirements	299	4.8	217	3.6	162	3.1	177	3.7
All other	4,165	66.2	4,154	68.7	3,383	65.6	3,053	63.0
Total	6,288	100.0	6,049	100.0	5,155	100.0	4,843	100.0

EXHIBIT 18. FINAL RULE DOCUMENTS BY AGENCY PUBLISHED IN THE *FEDERAL REGISTER* 1982–85

Agency	Number of documents				Percentage of documents			
	1985	1984	1983	1982	1985	1984	1983	1982
Agriculture	611	684	638	674	11.8	12.9	10.5	10.6
Commerce	254	202	213	205	4.9	3.8	3.5	3.2
Defense	113	102	109	111	2.2	1.9	1.8	1.8
Education	40	35	25	36	0.8	0.7	0.4	0.6
Energy	14	27	37	52	0.3	0.5	0.6	0.8
Health and Human Services	450	422	573	561	8.7	8.0	9.5	8.9
Housing and Urban Development	96	141	128	124	1.9	2.7	2.1	2.0
Interior	258	320	461	477	5.0	6.0	7.6	7.5
Justice	108	113	159	102	2.1	2.1	2.6	1.6
Labor	68	56	63	63	1.3	1.1	1.0	1.0
State	7	7	8	15	0.1	0.1	0.1	0.2
Transportation	903	748	865	908	17.4	14.1	14.3	14.3
Treasury	219	247	244	180	4.2	4.7	4.0	2.8
Environmental Protection Agency	518	624	605	805	10.0	11.8	10.0	12.7
Equal Employment Opportunity Commission	13	14	16	7	0.3	0.3	0.3	0.1
Federal Emergency Management Agency	84	91	261	398	1.6	1.7	4.3	6.3
Government Services Administration	107	74	95	80	2.1	1.4	1.6	1.3
National Aeronautics and Space Administration	28	15	20	18	0.5	0.3	0.3	0.3
Office of Management and Budget	0	1	2	1	0.0	0.0	0.0	0.0
Office of Personnel Management	39	38	43	25	0.8	0.7	0.7	0.4
Small Business Administration	26	39	26	26	0.5	0.7	0.4	0.4
Veterans Administration	49	54	53	54	0.9	1.0	0.9	0.9
Other	241	261	335	337	4.7	4.9	5.5	5.3
Commodity Futures Trading Commission	32	38	51	19	0.6	0.7	0.8	0.3
Consumer Product Safety Commission	17	30	22	25	0.3	0.6	0.4	0.4
Federal Communications Commission	400	405	359	393	7.7	7.7	5.9	6.2
Federal Deposit Insurance Corporation	14	20	24	17	0.3	0.4	0.4	0.3
Federal Energy Regulatory Commission	127	139	156	120	2.5	2.6	2.6	1.9
Federal Home Loan Bank Board	39	32	41	53	0.8	0.6	0.7	0.8
Federal Maritime Commission	9	43	19	26	0.2	0.8	0.3	0.4
Federal Reserve System	40	37	66	75	0.8	0.7	1.1	1.2
Federal Trade Commission	84	82	116	80	1.6	1.6	1.9	1.3
Interstate Commerce Commission	59	53	103	127	1.1	1.0	1.7	2.0
Nuclear Regulatory Commission	49	42	55	51	0.9	0.8	0.9	0.8
Securities and Exchange Commission	66	54	65	84	1.3	1.0	1.1	1.3
Total[1]	5182	5290	6056	6329	100.0	100.0	100.0	100.0

[1]Totals may include final rules issued jointly by two or more agencies.