CASE COMMENT: A "HARD LOOK" AT A SOFT ANALYSIS, *CORROSION PROOF FITTINGS v. ENVIRONMENTAL PROTECTION AGENCY*[1]

I. INTRODUCTION

At least sixty years after the first published reports of asbestos related diseases,[2] the Environmental Protection Agency (EPA of Agency), acting under the authority of section 6(a) of the Toxic Substances Control Act (TSCA),[3] issued a rule banning most asbestos products.[4] The rule banned manufacturing, importing, processing and distributing in commerce of asbestos in nearly all products because the EPA found that exposure to asbestos presented an unreasonable risk to human health.[5] This rule was soon challenged by an asbestos industry group and several asbestos product manufacturers in *Corrosion Proof Fittings v. Environmental Protection Agency*.[6]

In *Corrosion Proof Fittings*, the Fifth Circuit applied TSCA's substantial evidence standard[7] and held that the EPA presented insufficient evidence to justify the asbestos product ban.[8] The court invalidated most of the EPA's regulations. This decision increases the Agency's burden of proof under TSCA[9] and heightens the standard of review that the federal courts may apply in administrative decisions.[10] Moreover, *Corrosion Proof Fittings* reaches beyond asbestos regulation, restricting the EPA's ability to regulate the use of any toxic substance under TSCA.

By taking a hard look at the EPA's analysis supporting the asbestos ban and the judicial review of this analysis, this Note reveals how structural problems of our administrative system of government can detrimentally affect both the public health and the economy. The invalidated ban leaves the public legally unprotected from the prospective risks of future production, importation, and

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[1] 947 F.2d 1201 (5th Cir. 1991).

[2] *See* Irving Selikoff & Morris Greenberg, *A Landmark Case in Asbestosis*, 265 JAMA 898 (1991).

[3] Toxic Substances Control Act § 6(a), 15 U.S.C. § 2605(a) (1988).

[4] 40 C.F.R. § 763.160-763.179 (1993).

[5] Manufacture, Importation, Processing, and Distribution in Commerce Prohibitions; Final Rule, 54 Fed. Reg. 29,460 (1989) (to be codified at 40 C.F.R. § 763) [hereinafter Final Rule].

[6] 947 F.2d 1201 (5th Cir. 1991).

[7] Toxic Substances Control Act § 19(c)(1)(B)(i), 15 U.S.C. § 2618(c)(1)(B)(i) (1988).

[8] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1215 (5th Cir. 1991).

[9] See *infra* text accompanying notes 143-144.

[10] Thomas O. McGarity, *Some Thoughts on "Deossifying" the Rulemaking Process*, 41 DUKE L.J. 1385, 1422-24 (1992).

use of asbestos products.[11]

More broadly, this Note illustrates that without clear legislative direction, the administrative system of agency analysis and judicial review shifts the responsibility for government decision-making into the hands of two non-representative branches of government, the administrative and judicial branches, and thereby undermines public participation in government.

Section II of this Note analyzes the public health concerns posed by asbestos, and the benefits of the product, to provide the social framework for the technical administrative decision addressed by later sections.

Section III describes the analytical and regulatory processes of the EPA's decision to ban future asbestos production and distribution in commerce. This section interprets the statute that enabled the EPA to respond to this public health issue and guided its decision-making process. Like many agency decisions, the EPA's decision centered on cost-benefit analysis, attempting to determine the appropriate economic burden necessary to achieve an adequate level of safety, and whether this burden was reasonable. The weaknesses of the Agency's cost-benefit analysis and the Agency's presentation of this analysis to the public are addressed. This section demonstrates that the Agency's use of cost-benefit analysis "suffers from major methodological limitations and institutional abuses."[12]

Section IV evaluates the Fifth Circuit opinion that invalidated the regulation and describes how this decision may lead to inadequate protection of the public health in the future. The Fifth Circuit's application of TSCA demonstrates that when the legislature provides unclear administrative decision criteria and fails to define the standard of review, a court will make policy. The legislature's continued failure to define the proper role of the judiciary in reviewing administrative decision-making provides courts with the latitude to make policy, thereby weakening the democratic process.[13]

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[11] Although the public may be legally unprotected from the prospective manufacture, import and distribution of certain asbestos products, the ban, though invalidated, probably accelerated the switch to asbestos substitutes. The invalidated ban may have had essentially the same positive effect on public health and the same negative effect on the asbestos industry and the economy as a valid ban would have had. Therefore, it may be argued that the judiciary does not always serve as an effective check on agency power. Note that the ban remains valid with respect to six asbestos-containing product categories: corrugated paper, rollboard, commercial paper, specialty paper, flooring felt, and new uses. *See* 58 Fed. Reg. 58,964, 58,968 (1993).

The asbestos industry may also be a subject of criticism for its failure to respond to public health concerns in a timely manner. Nevertheless, the focus of this Note is on the administrative system, since in this system rests the government's ability to require industry to respond to threats to public health and safety.

[12] Michael S. Baram, *Cost-Benefit Analysis: An Inadequate Basis for Health, Safety, and Environmental Regulatory Decisionmaking*, 8 ECOLOGY L.Q. 473 (1980).

[13] *Cf.* Michael Cooke, Note, *An Evolving Model for Judicial Review of Environmental, Safety and Health Rulemaking: Small Refiners Lead Phase-Down Task Force v. EPA*, 33 CATH. U. L. REV. 1027 (1984) (exemplifying a single decision's influence

Section V concludes that this case illustrates structural problems in the legal system and calls on the legislative and executive branches to address these problems that hinder sound administrative policy-making.

II. THE PUBLIC HEALTH ISSUE

Asbestos was recognized as a health risk around the turn of the century, not long after the expansion of the asbestos industry.[14] Studies show that asbestos fibers[15] cause lung cancer; mesothelioma, a cancer of the lining of the lung or abdominal cavity; and asbestosis, a chronic lung disease.[16] Also associated with asbestos exposure are gastrointestinal cancers, (consisting largely of cancers of the esophagus, stomach, colon and rectum), other cancers, and other lung disorders and diseases.[17]

Lung cancer caused by asbestos consists of a malignant tumor of the epithelial covering of the bronchi. The tumor grows invasively, often obstructing airways and spreading to other tissues, causing hemorrhage and loss of ventilation resulting in death.[18] Lung cancer is currently treated by surgical removal; radiotherapy and chemotherapy are generally unsuccessful.[19]

Mesothelioma is also a tumor; it develops in the mesothelial cells of the pleura or peritoneum (the membranous linings of the chest or abdominal cavities).[20] Malignant mesothelioma rapidly causes death from inadequate respiration or hemorrhage; most deaths occur within two years of diagnosis.[21]

Asbestosis is characterized by diffuse interstitial fibrosis, an abnormal increase in the amount of fibrous connective tissue in the lung.[22] Coughing is a

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on federal court review of environmental regulation). *Compare* Harold Leventhal, *Environmental Decisionmaking and the Role of the Courts*, 122 U. PA. L. REV. 509 (1974) *with* David L. Bazelon, *Risk and Responsibility*, 205 SCI. 277, 279 (1979) (expressing alternative views of the proper role of the courts). *See generally* Sheila Jasanoff & Dorothy Nelkin, *Science, Technology, and the Limits of Judicial Competence*, 214 SCI. 1211 (1981).

[14] *See* Selikoff & Greenberg, *supra* note 2, at 898.

[15] Asbestos is a generic name for certain commercially-used minerals including chrysotile, anthophyllite, riebeckite, cummingtonite-grunerite and actinolite-tremolite. *See* NATIONAL RESEARCH COUNCIL, ASBESTIFORM FIBERS, NON-OCCUPATIONAL HEALTH RISKS 40 (1984) [hereinafter NATIONAL RESEARCH COUNCIL].

[16] Council on Sci. Affairs, AMA, *A Physician's Guide to Asbestos-Related Diseases*, 252 JAMA 2593 (1984); CHRONIC HAZARD ADVISORY PANEL ON ASBESTOS, U.S. CONSUMER PROD. SAFETY COMM'N, REPORT TO THE COMMISSION I-2 (1983). The fiber properties suspected to be associated with deleterious health effects are: respirability, size and aspect ratio, durability, flexibility and tensile strength, chemical composition, surface area and surface charge.

[17] NATIONAL RESEARCH COUNCIL, *supra* note 15, at 11-12.

[18] *Id.* at 111.

[19] *Id.*

[20] *Id.* at 111-12.

[21] *Id.*

[22] *Id.* at 112-13.

typical symptom of mild asbestosis. Breathlessness is a common problem in more advanced cases.[23] An individual with asbestosis may have inadequate oxygenation of blood and difficulty breathing, resulting in malaise.[24]

The severity of the possible consequences of asbestos exposure may lead one to wonder why the product was so widely used. Asbestos is fiberlike, and has great strength and flexibility at fine diameters.[25] The fibers are resistant to stress and have a surface relatively free of defects.[26] These physical properties make asbestos a useful insulator in many electrical, friction, and construction products, such as electrical appliances (including ovens and toasters), brake linings and pads, floor, ceiling and roofing materials, and pipe and pipeline wrap.[27]

Workers may be exposed to asbestos fibers in the production, use, maintenance and disposal of asbestos-containing products.[28] Furthermore, people who live near industrial facilities where asbestos is used,[29] live in households with asbestos workers,[30] or spend time in buildings such as schools, auditoriums, and other public and private buildings where asbestos is present are also subject to increased health risks.[31] These non-occupational exposures are of particular public concern. Individuals subject to non-occupational exposure do not consciously accept the risks of exposing themselves to asbestos, nor are they compensated for the resulting injury. Moreover, the exposure is often undetected.[32]

The debate on the health risk of non-occupational exposure to asbestos continues. Some scientists perceive relatively little health risk to the general public at the levels of exposure generally encountered, while others emphasize the relatively small amount of asbestos required to produce disease.[33]

Despite the disagreement within the scientific community, anticipation of a product ban and the costs of asbestos litigation may have been sufficient to influence industry to seek and use asbestos substitutes. Since the early 1970s, annual U.S. consumption of asbestos has dropped precipitously, and recent industry statistics suggest an expanding use of asbestos substitutes.[34] Some

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[23] *Id.* at 113.

[24] *Id.* at 112-13.

[25] *Id.* at 33.

[26] *Id.* at 33-34.

[27] *Id.* at 17.

[28] *See infra* text accompanying note 31.

[29] U.S. E.P.A., OFF. OF HEALTH & ENVTL. ASSESSMENT, AIRBORNE ASBESTOS HEALTH ASSESSMENT UPDATE 9 (1986).

[30] NATIONAL RESEARCH COUNCIL, *supra* note 15, at 1.

[31] AIRBORNE ASBESTOS HEALTH ASSESSMENT UPDATE, *supra* note 29, at 9.

[32] Council on Sci. Affairs, AMA, *Asbestos Removal, Health Hazards and the EPA*, 266 JAMA 696 (1991). *See also* NATIONAL RESEARCH COUNCIL, *supra* note 15, at 16.

[33] Richard Stone, *No Meeting of the Minds on Asbestos*, 254 SCI. 928 (1991).

[34] NATIONAL RESEARCH COUNCIL, *supra* note 15, at 16. The author speculates that current usage of asbestos has dropped in the last twenty years due to increased knowledge of the detrimental health effects, increased tort or worker's compensation litiga-

products, such as asbestos roofing felt may no longer be available; fiberglass reinforced products are used instead.[35] Suitable substitutes are currently available for most uses of asbestos.

The most visible congressional response to public concerns over asbestos's public health risks was the Asbestos Hazard Emergency Response Act of 1986.[36] This statute requires the EPA to establish federal standards for inspections of public and private schools for friable asbestos material and to establish standards for response actions. Congress passed the statute in response to a consensus that the EPA had inadequately addressed asbestos-related health risks. While the statute guides the EPA's response to the asbestos hazard in the nation's schools, Congress left undisturbed existing mandates to address asbestos hazards in other environments.[37]

III. THE AGENCY ACTION

Congress delegated to administrative agencies the authority to respond to the public health risks associated with toxic substances.[38] To evaluate the legitimacy of the administrative response, one must understand the analytical basis for the rule promulgated by the Agency and the statute that authorized

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tion, and increased availability of substitutes. Nevertheless, the cumulative consumption of asbestos during this century is high, providing an ongoing potential health hazard to the public.

[35] VERSAR, INC., NONOCCUPATIONAL ASBESTOS EXPOSURE, Revised Draft Report 6-3 (1987).

[36] Asbestos Hazard Emergency Response Act of 1986, Pub. L. No. 99-519 (codified by adding Title II to TSCA, 15 U.S.C. § 2641 (1988), amending 15 U.S.C. §§ 2614, 2618, and 2619 (1976), enacting 20 U.S.C. § 4022 (1988) and enacting provisions set out as notes under 20 U.S.C. §§ 4014 and 4022 (1988)).

[37] For example, the Consumer Products Safety Commission (CPSC) and the Occupational Safety and Health Administration (OSHA) each responded to asbestos concerns. *See* 16 C.F.R. §§ 1304-1305 (1993); 29 C.F.R. §§ 1910.1001, 1926.58 (1993).

[38] *See, e.g.*, Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. § 136 (1988 & Supp. IV 1992); Toxic Substances Control Act § 6, 15 U.S.C. § 2601 (1988 & Supp. IV 1992); Occupational Safety and Health Act, 29 U.S.C. § 651 (1988 & Supp. IV 1992). This Note will discuss only one aspect of the risk of asbestos in the environment. The Note addresses the EPA's response to the prospective risk of using products containing asbestos. Although this risk may be of significantly less concern to the public due to the expanding use of substitutes, the case is important both because of its value as an example of the limitations of the administrative process and because of its effects on the EPA's ability to regulate under TSCA.

Perhaps a more significant current concern is the risk posed by asbestos already present in private and public buildings, particularly in public schools. The EPA has also addressed this risk. *See, e.g.*, 40 C.F.R. § 763.80 (1993). While there is interesting controversy regarding the proper response to the risk posed by asbestos in existing buildings, generally this Note will not address this risk; this subject has been extensively debated in academic literature. *See, e.g.*, Council on Sci. Affairs, *supra* note 32, at 696.

this action. With this background, one can then evaluate the propriety of the EPA's action.

A. *EPA's Promulgation of the Regulation*

In its final rule, published in the Federal Register in July 1989, the EPA prohibited manufacturing, importing, processing and distributing in commerce of asbestos in virtually all products because exposure to asbestos presented unreasonable risks to human health.[39] The rule imposed a three stage ban, prohibiting approximately 94 percent of all asbestos products manufactured, imported, processed or distributed in commerce in the United States over a ten-year period which was to begin in August 1990.[40]

To lessen the economic impact of the rule, the EPA allowed time for the affected parties to sell existing inventories.[41] The rule prohibited distribution in commerce of the banned products within approximately one year after the manufacturing, importing and processing bans became effective. One year prior to the effective date of each stage of the ban on manufacturing, importing and processing, the rule required labeling for products to be banned in the next stage. The rule required that the label indicate that the product contained asbestos and identify the effective date of the ban on the products' distribution in commerce.[42]

Stage One, which began in August 1990, banned the manufacture, import, and processing of asbestos clothing and many asbestos construction materials, including asbestos flooring, roofing and piping.[43] Also, new asbestos products (new uses for asbestos) which were manufactured, imported or processed for the first time following the effective date of the rule were banned in Stage One, unless the EPA approved an exemption from the rule.[44]

Stage Two, intended to go into effect two years after Stage One, banned manufacturing, importing, and processing many friction products (including several automotive products).[45] Stage Three, intended to go into effect three years after Stage Two, banned manufacturing, importing, and processing other construction and automotive products.[46]

The EPA made exceptions to the ban when the risk to the public was particularly insignificant or when the ban would be impossible to enforce.[47] Several other products containing asbestos were also excluded from the regulation. These included products imported into the United States for the sole purpose of shipment to another country, small quantities of articles imported into the

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[39] Final Rule, *supra* note 5, at 29,461.
[40] *Id.*
[41] *Id.* at 29,462.
[42] *Id.* at 29,463.
[43] *Id.* at 29,461.
[44] *Id.* at 29,462.
[45] *Id.*
[46] *Id.*
[47] *Id.* at 29,464-65.

United States for normal personal or business activities, and movement of automobiles, integral parts of which contained asbestos, across the borders during normal personal or business activities.[48]

The regulation also provided manufacturers and entrepreneurs an opportunity to apply for an exemption for existing asbestos products and for new uses of asbestos.[49] Exemption applicants were required to demonstrate that the activity identified in their application would not result in an unreasonable risk of injury to human health. The applicant also had to show that it had made a good faith effort to develop a substitute for asbestos that did not pose an unreasonable risk.[50]

B. *The Statutory Mandate*

The EPA believed that the Toxic Substances Control Act authorized the Agency to ban asbestos products.[51] Under section 6(a) of TSCA, the EPA may regulate a particular chemical substance or mixture "[i]f the Administrator finds that there is a reasonable basis to conclude that the manufacture, processing, distribution in commerce, use, or disposal of a chemical substance or mixture, or that any combination of such activities, presents or will present an unreasonable risk of injury to health or the environment."[52]

The EPA Administrator is required to set regulatory requirements to control chemical substances "to the extent necessary to protect adequately against such risk [of injury to health or the environment] using the least burdensome requirements."[53] Thus, when the EPA determines that a given chemical substance poses a risk to the public health, TSCA gives the EPA authority to promulgate rules to control the risk.

In promulgating any rule under section 6(a) of TSCA, section 6(c)(1) requires the EPA Administrator to consider and publish a statement with respect to—

> (A) the effects of such substance or mixture on health and the magnitude of the exposure of human beings to such substance or mixture,

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[48] *Id.* at 29,462.

[49] *Id.* at 29,463-64.

[50] *Id.* at 29,464. For example, Omega Phase Transformations, Inc. applied for such an exemption in October of 1990. This company planned to use asbestos-containing material waste to make asbestos-free glass products and metal ingots by heating the materials to 2000 degrees Fahrenheit to break down the asbestos fibers. Two compelling reasons to grant the new use exemption in this case were waste reduction and reduced risk of exposure during disposal. *EPA Proposes to Allow Omega to Use Waste to Make New Glass Products, Metal Ingots,* Daily Rep. for Executives (BNA) No. 106, at d17 (June 2, 1992). The EPA proposed to grant the exemption. *See* Proposed Exemption from Asbestos Ban on Manufacture, Processing and Distribution in Commerce, Proposed Rule, 57 Fed. Reg. 23,183 (1992).

[51] Final Rule, *supra* note 5, at 29,460-61.

[52] Toxic Substances Control Act § 6(a), 15 U.S.C. § 2605(a) (1988).

[53] *Id.*

(B) the effects of such substance or mixture on the environment and the magnitude of the exposure of the environment to such substance or mixture,
(C) the benefits of such substance or mixture for various uses and the availability of substitutes for such uses, and
(D) the reasonably ascertainable economic consequences of the rule, after consideration of the effect on the national economy, small business, technological innovation, the environment, and public health.[54]

Thus, if the EPA finds that asbestos presents an unreasonable risk to human health, the EPA is required by statute to consider the health effects of asbestos, the magnitude of public exposure to asbestos, the benefits of the substance, and the economic consequences of regulating it. Furthermore, TSCA requires the Administrator to apply the "least burdensome" of seven regulatory alternatives that would reduce the risk of harm to a reasonable level.[55] The EPA determined that the unreasonableness of the risk of injury from asbestos justified regulation under several TSCA regulatory alternatives:

> Section 6(a)(1) authorizes EPA to prohibit or limit the manufacture, processing, or distribution in commerce of substances or mixtures if EPA finds that these activities pose an unreasonable risk. Section 6(a)(2) authorizes EPA to prohibit or limit such activities for a particular use of

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[54] Toxic Substances Control Act § 6(c)(1), 15 U.S.C. § 2605(c)(1)(1988).

[55] Section 6(a)(1)-(7) of TSCA authorizes alternative regulatory schemes including substance bans or quotas, use prohibitions, labelling requirements, record-keeping requirements, regulation of method of use or disposal, and notice requirements. More specifically, these regulatory alternatives enable the EPA to promulgate regulations that would:

(1) prohibit or limit manufacturing, processing or distributing in commerce of a substance;
(2) prohibit or limit manufacturing, processing or distributing in commerce of a substance, for a particular use, or for a particular use limited to a particular concentration;
(3) require that warnings or instructions accompany the substance with respect to use, distribution in commerce, or disposal;
(4) require that manufacturers maintain records of the processes used to manufacture the substance, and require tests to assure compliance with any rule under this section;
(5) prohibit or otherwise regulate commercial use of the substance;
(6) prohibit or otherwise regulate disposal of the substance, provided this rule did not require any violation of State law (or the law of any political subdivision of the State);
(7) require manufacturers and others in possession of the subtance to give notice of an unreasonable risk of injury to distributors in commerce of the substance. This regulatory alternative also enabled the EPA to require the manufacturers and others to give public notice of the risk of injury, and to require them to replace or repurchase the substance.

See Toxic Substances Control Act § 6(a)(1)-(7), 15 U.S.C. § 2605(a)(1)-(7) (1988).

such substances or mixtures. Section 6(a)(3) authorizes EPA to require labels for such substances or mixtures. Sections 6 and 8(a) authorize EPA to require the maintenance of records related to enforcement of EPA actions under section 6. These sections of TSCA provide EPA the authority to issue this rule.[56]

The statutory language does not clearly identify how the EPA was supposed to characterize the reasonableness of the risk of injury to the health or environment. Congress may have intended the EPA to consider such factors as health effects, magnitude of exposure, the need for the product, and the economic consequences of alleviating the risk as a measure of the reasonableness of the risk. Alternatively, Congress may have expected the EPA to determine the risk based on a scientific standard.[57]

Whether or not the EPA was adequately guided by the particular words of the statute, the Agency reviewed scientific literature and analyzed the risk posed by asbestos.[58] The results of this analysis formed the basis for the EPA's decision to ban asbestos products.[59]

C. *Analysis Supporting the Rule*[60]

The EPA analyzed the need for regulation of asbestos products by addressing each of the issues required by TSCA.[61] Guided by section 6(c)(1)(A), the EPA examined scientific studies which identified the carcinogenic effects of asbestos and its tendency to cause other diseases.[62] The EPA attempted to assess the magnitude of the U.S. population's exposure to asbestos, the risk of harm from such exposure,[63] and the impact of this risk on the exposed population.[64]

The EPA measured two types of exposure to asbestos: occupational exposure

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[56] Final Rule, *supra* note 5, at 29,460.

[57] Toxic Substances Control Act § 6(c), 15 U.S.C. § 2605(c) (1988).

[58] Many of these studies were referenced in the EPA's summary of analysis supporting the final rule. *See* Final Rule, *supra* note 5, at 29,466.

[59] *Id.*

[60] The reader is forewarned that this summary of analysis is an oversimplification of the analysis performed by the EPA; it is presented to prepare the reader for the Fifth Circuit's criticisms in *Corrosion Proof Fittings*. The interested reader may examine the EPA's regulatory assessment firsthand. *Id.* at 29,466-502.

[61] Toxic Substances Control Act § 6(c), 15 U.S.C. § 2605(c) (1988).

[62] *See, e.g.*, AIRBORNE ASBESTOS HEALTH ASSESSMENT UPDATE, *supra* note 29, at 1-3; NATIONAL RESEARCH COUNCIL, *supra* note 15, at 1; CHRONIC HAZARD ADVISORY PANEL ON ASBESTOS, *supra* note 16, at I-1 to I-6.

[63] The risk of harm for lung cancer or mesothelioma is generally a function of cumulative exposure to asbestos. *See* 54 Fed. Reg. at 29,471; *see, e.g.*, ICF INC., ASBESTOS EXPOSURE ASSESSMENT, Revised Report xii (1988); VERSAR, INC., ASBESTOS MODELING STUDY, Final Report 9 (1988); NONOCCUPATIONAL ASBESTOS EXPOSURE, *supra* note 35, at 1-1.

[64] Final Rule, *supra* note 5, at 29,473.

and non-occupational exposure.[65] An individual is occupationally exposed to asbestos if he or she works with asbestos or asbestos products.[66] An individual may be exposed non-occupationally when asbestos is released into the air as a result of a variety of activities involving asbestos products.[67]

The EPA estimated that approximately 135,000 full-time equivalent workers are occupationally exposed to asbestos during mining, milling, and product manufacture.[68] In estimating the risk of occupational exposure, the Agency assumed that workers would be exposed to levels of asbestos that met occupational health and safety standards.[69] "Assuming that workers are exposed to these levels over a 45-year working lifetime, they incur individual risks of between 7 in 10,000 and 7 in 1,000 of developing cancer."[70]

Because information regarding occupational exposures during the installation, repair and disposal of asbestos products was generally unavailable, the EPA did not quantify this exposure.[71] Nevertheless, the EPA decided that significant exposures occurred during these activities.[72]

Non-occupational exposure to asbestos was based on modeling population exposures to asbestos released into the ambient air during manufacture of the asbestos products, brake repair, and construction involving asbestos products.[73] In summary, with respect to population exposures during manufacture, "[the] EPA estimates that 122 million people are exposed to ambient asbestos released during milling and product manufacturing [and] many thousands of persons would incur risks of at least 1 in 10,000 of developing cancer from ambient exposure to asbestos from plant emissions."[74] With respect to consumer and population exposures during brake repairs and construction, "EPA estimates that approximately 40 million consumers and 19 million of those exposed to ambient asbestos incur risks of 1 in 1,000,000 or more of developing cancer from their exposure."[75] Most of these consumer exposures result from individuals repairing their own brakes and roofs, and from the release of asbestos into the ambient air during these activities.[76] The EPA also indicated that other exposures associated with asbestos products exist which are difficult to measure and were, therefore, not quantified in this analysis.[77]

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[65] *Id.* at 29,472-79.

[66] *Id.* at 29,472-73.

[67] *Id.* at 29,476-77.

[68] *Id.* at 29,473.

[69] *Id.*

[70] *Id.* (citation omitted).

[71] *Id.* at 29,474.

[72] *Id.*

[73] *Id.* at 29,476-77.

[74] *Id.* at 29,477-78.

[75] *Id.* at 29,477. *See also* ASBESTOS MODELING STUDY, *supra* note 63, at Appendix B.

[76] *See* Final Rule, *supra* note 5, at 29,477.

[77] *Id.*

The EPA concluded that people incur "very large"[78] risks of cancer due to exposure to asbestos released during the life cycles of the products considered. The Agency indicated that "intensity, scope and potential longevity of human exposure to asbestos released during the life cycles of the products subject to this rule"[79] were "cause for serious concern."[80]

Section 6(c)(1)(D) of TSCA requires the EPA to consider various regulatory options and to estimate the economic consequences of the rule.[81] The Agency interpreted this requirement to consider economic consequences as a mandate to perform a cost-benefit analysis.[82] Fulfilling this requirement, the EPA prepared a Regulatory Impact Analysis which addressed the potential economic impact of alternative formulations of its proposed rule.[83]

According to the Regulatory Impact Analysis, the EPA considered a broad set of regulatory alternatives. These ranged from controls on exposure to asbestos in certain products and activities to product bans and a phase-down of asbestos fiber usage over time.[84] Despite the broad range of alternative control options provided by TSCA,[85] the EPA selected this narrower set of alternatives for economic analysis in the Regulatory Impact Analysis. The EPA evaluated fourteen different approaches involving selected product bans, phase-downs of asbestos fiber use (which operate like an annually decreasing quota), and combinations of these two approaches.[86] The EPA quantified benefits and costs for each of these regulatory alternatives.[87]

The only benefit the EPA estimated quantitatively was the reduction in mortality due to cancer cases avoided.[88] First, the EPA projected health benefits by estimating occupational and non-occupational exposures to asbestos from each asbestos-containing product. Next, the Agency extrapolated dose-response relationships for lung cancer and mesothelioma.[89] Based on the exposure and expected dose-response, the EPA projected the number of deaths associated with each of the products expected to be manufactured between the years 1987 and 2000.[90] Finally, the EPA calculated the "present value" of

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[78] *Id.* at 29,480.

[79] *Id.*

[80] *Id.*

[81] Toxic Substances Control Act § 6(c)(1)(D), 15 U.S.C. § 2605(c)(1))(D) (1988). *See supra* text accompanying note 54.

[82] Final Rule, *supra* note 5, at 29,483.

[83] ICF INC., REGULATORY IMPACT ANALYSIS OF CONTROLS ON ASBESTOS & ASBESTOS PRODUCTS, FINAL REPORT ES-1 to ES-2 (1989) [hereinafter REGULATORY IMPACT ANALYSIS].

[84] REGULATORY IMPACT ANALYSIS, *supra* note 82, at ES-1.

[85] *See, e.g., id.* at I-7. Alternative regulatory schemes authorized by TSCA are set forth in section 6(a)(1)-(7). *See supra* note 55 and accompanying text.

[86] REGULATORY IMPACT ANALYSIS, *supra* note 82, at IV-2 to IV-3.

[87] *Id.* at IV-1.

[88] *Id.* at II-1 to II-2.

[89] *Id.* at II-2 to II-19.

[90] *Id.* at II-18.

these benefits (lives saved)[91] from the time of exposure to the beginning year of the analysis, as well as the exposure occurring at the time of manufacture, repair, and disposal.[92]

Although the EPA acknowledged other benefits of reducing asbestos exposure, including reduced asbestosis, reduced medical care expenses, increased worker productivity, and improved quality of life,[93] these benefits were not quantified in the analysis.[94] The impacts on family members of asbestos workers (including health impacts) were also omitted from the quantitative analysis.[95] These and other benefits were omitted because of the difficulty that the EPA would have in modeling them, not because the Agency believed they were insignificant.[96] To estimate the costs of regulating asbestos products, the EPA developed an economic model of the market effects of regulatory alternatives.[97] The model defined and measured the net social costs and benefits of the various regulatory alternatives. It then identified the economic entities (e.g., producers, consumers) who would bear the costs that would be imposed by the regulatory alternatives and the populations that would reap the benefits.[98]

Cost estimates included costs to producers, manufacturers, and consumers as a result of the regulation. For example, domestic producers of asbestos and manufacturers of asbestos products would suffer losses as a result of lost rights to purchase, use, or sell asbestos.[99] Producers, manufacturers and consumers would incur both gains and losses from fluctuations in the price of asbestos as a result of changes in demand after the rule took effect.[100] Combinations of

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[91] "Present value" theory is an economic concept used to value future cash flows; money is considered to be worth more now than in the future because the money earned today can be invested to start earning interest immediately. RICHARD A. BREALEY & STEWART C. MYERS, PRINCIPLES OF CORPORATE FINANCE 11-12 (3d ed. 1988). Calculating the present value of future costs or benefits is called discounting. Application of the theory to valuing public health and environmental benefits (as opposed to monetary benefits) has been given a mixed reception because to apply present value theory in these contexts is to discount the value of future human health, life, and environmental quality, which some theorists and policy analysts find morally unjustified.

[92] *See* REGULATORY IMPACT ANALYSIS, *supra* note 82, at II-18. Note that the EPA might have considered the benefits to accrue from the expected time of an averted death. This time is many years later due to the 20-30 year latency period of cancer. Using the expected time of death would result in a much lower value of benefits because the benefits would accrue 20-30 years in the future.

[93] *Id.* at II-1.

[94] *Id.*

[95] *Id.*

[96] *Id.*

[97] *Id.* at II-19.

[98] *Id.* at II-20.

[99] *Id.* at II-21 to II-24.

[100] *Id.* at II-25 to II-28.

these types of costs were accumulated to identify the total economic and social losses which would result from a particular regulatory alternative.[101]

Based on the data used in this study, the EPA estimated that the product bans in the 1989 rule would result in the avoidance of 202 quantifiable cancer cases, provided benefits are not discounted, and 148 cases if the benefits are discounted at three percent.[102] The EPA estimated the costs of the 1989 rule at $458.89 million, or $806.51 million if it did not assume a one percent annual decline in the price of asbestos substitutes.[103]

The result of the cost-benefit modeling was that the cost-benefits of regulatory alternatives ranged from a low of about $4.2 million per cancer case avoided to a high of $49 million per case avoided. Most of the overall cost-per-cancer-case-avoided figures were in the $5 million to $30 million range.[104]

To test the validity of its cost-benefit model, the EPA performed a sensitivity analysis of these cost estimates. The EPA evaluated the impact of varying its assumptions on the results of its cost-benefit study. From this analysis, the EPA concluded that with different assumptions, the cost per cancer case avoided fell from a base case level of $6 million to $2.5 million.[105]

After responding to comments, the EPA published a summary of its analysis in the Federal Register and instituted a staged ban of asbestos products.

D. *Procedural Criticisms of the EPA's Action*

While the Regulatory Impact Analysis provided the EPA with a structural framework on which to base a difficult policy decision, the EPA failed to clearly explain the rationale underlying its decision.

The EPA included, in the public record, written results of the analysis conducted during the regulatory decision-making process. A summary of this analysis was also published in the Federal Register promulgating the final rule.[106] While the EPA's regulation may have been justified based on a review of all of the material in the public record,[107] the published summary did not clearly present to the public the information the EPA had gathered or the judgments it made. Errors in the presentation[108] and unclear discussions[109]

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[101] *Id.* at II-30.

[102] *See supra* note 91 for a brief explanation of discounting. Note the arbitrary choice of discount rate.

[103] Final Rule, *supra* note 5, at 29,468.

[104] REGULATORY IMPACT ANALYSIS, *supra* note 82, at IV-10.

[105] These figures assume both costs and benefits are discounted at three percent. If benefits (future lives) are not discounted, the cost per case falls to $1.8 million. *Id.* at IV-25.

[106] Final Rule, *supra* note 5, at 29,460.

[107] *See id.* at 29,505 (listing extensive references).

[108] *See, e.g., id.* at 29,471 (demonstrating a misprint in the mathematical definitions of the risk models. The EPA presented two risk models it used to measure the risks of mesothelioma and lung cancer. As is customary, the EPA defined the terms used in each formula. Unfortunately, the term definitions for the absolute risk model for

made it difficult to accurately assess the reasonableness of the findings and of the regulation they supported.

For example, the Agency failed to follow the recommendations of the Administrative Conference of the United States[110] with regard to presenting certain elements of the results. The Administrative Conference recommends that when an agency presents the public with its process of valuing human life, it should disclose the dollar value per statistical life saved as a result of the regulation.[111] The cost-per-life-saved statistic would enable the public to compare the cost of regulating asbestos with the cost of reducing some other threat to public health. The summary of analysis that the EPA published in the Federal Register fails to disclose this important statistic.[112]

The omission might be considered insignificant, were it not for the fact that the EPA instead presented cost-per-life-saved information that could easily mislead the public. The figures the EPA published in the Federal Register indicated that 202 or 148 lives could be saved at a cost of approximately $458 million.[113] The EPA argued that this finding supported its conclusion that the regulation was necessary.[114] By simple arithmetic, a layperson might reasonably infer that the EPA decided to spend between $2.27 and $3.09 million per human life saved.[115] This logical inference, however, is inaccurate. In fact,

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mesothelioma follow the relative risk model for lung cancer.).

[109] *See id.* at 29,467.

[110] The Administrative Conference of the United States (ACUS) was established by the Administrative Conference Act, 5 U.S.C. §§ 571-576 (1988). "The Conference studies the efficiency, adequacy, and fairness of the administrative procedures used by federal agencies in carrying out administrative programs, and makes recommendations for improvements to the agencies . . . the President, Congress, and the Judicial Conference of the United States." 53 Fed. Reg. 39,585 (1988) (citation omitted).

[111] 53 Fed. Reg. at 39,585-87.

[112] Final Rule, *supra* note 5, at 29,506. Another EPA report referenced in the Federal Register, the Regulatory Impact Analysis, does provide cost-per-life-saved information. Although this report was included in the public record, the report is less accessible than the Federal Register itself, because the report may be obtained only through a Freedom of Information Act request, or by visiting the Office of Toxic Substances in Washington, D.C. Agency responses to FOIA requests are often delayed up to a few months. The author obtained this report, as well as much of the EPA's supporting documentation, by visiting the Office of Pesticides and Toxic Substances in person. Such a visit is at least inconvenient and may be impossible for many.

[113] *See id.* at 29,468.

[114] *Id.*

[115] A decision to spend between $2.27 and $3.09 million per human life saved would be reasonably well-supported by policy literature. For example, one policy analyst has noted a range of estimates from $37,500 to $4.5 million. *See* 50 Fed. Reg. 41,452 (1985) (citing M. J. Bailey, *Reducing Risks to Life, Measurement of the Benefits, in* STUDIES IN GOVERNMENT REGULATION (American Enterprise Institute 1980)). The court in *Corrosion Proof Fittings* suggested that the EPA was unable to justify its conclusion that $30-40 million was a reasonable amount to spend to save a human life, but it is not clear from where the court derives this figure. Corrosion Proof Fittings v.

depending on the product that would be banned, the cost-per-cancer-case-avoided varied from $190,000 to $637.9 million.[116] The EPA may have chosen to disguise the relatively high economic costs of particular elements of the regulation by presenting summary statistics.[117]

While the EPA was less than straightforward about the costs of the regulation, the Agency freely conceded the limitations of its analysis. The report in the Federal Register admitted that the quantitative estimates of both occupational and non-occupational exposures were underestimates.[118] Underestimates of these exposures ultimately led to underestimates of the quantified benefits of the published rule in the Regulatory Impact Analysis.[119] The Agency also concluded that assumptions it had made concerning the costs of the rule had ultimately resulted in overestimates of total costs.[120]

The EPA could have explained that the quantitative study was an inadequate basis for a decision because the exposure data was limited.[121] Other justifications are also possible for the EPA's decision, but none was expressed in the Agency's published summary of analysis.[122] Instead, the EPA published a summary that inadequately explained to the layperson (and to the court) the relative importance of the various attributes it considered in making the decision.[123] The deficiencies of the summary undermined the Agency's accountability to the public and ultimately made the decision vulnerable to litigation.

EPA, 947 F.2d 1201, 1222-23 (5th Cir. 1991).

[116] These extremes represent the costs of banning asbestos-containing drum brake linings (after-market) and automatic transmission components, respectively. REGULATORY IMPACT ANALYSIS, *supra* note 82, at IV-14, Table IV-5.

[117] Arguably, it may have been appropriate to ban only those products which had the lowest cost-per-life saved.

[118] *See* Final Rule, *supra* note 5, at 29,473, 29,477.

[119] REGULATORY IMPACT ANALYSIS, *supra* note 82, at IV-1 to IV-2.

[120] At least three assumptions suggest the costs of the rule were overstated. First, the cost estimates assumed no decline in the price of asbestos. Second, asbestos containing product substitute prices were always assumed to be greater than or equal to the price of the asbestos equivalent, even where lower cost substitutes existed. Third, the Agency assumed that in the absence of asbestos containing products, users would switch to non-asbestos products in proportion to the existing market shares of these substitutes, rather than shifting proportionately more toward lower cost substitutes. *Id.* at IV-2.

[121] A more extensive explanation of why the data was limited would also help the reader to gauge the significance of the missing information.

[122] For example, the EPA might have explained its decision on the basis that few American workers would be displaced relative to the high number of people that would avoid asbestos exposure by implementing the product ban.

[123] This observation is based on the author's experience interpreting the information presented in the summary. *See* Final Rule, *supra* note 5, at 29,460.

IV. THE INSUBSTANTIAL DECISION

A. *The Fifth Circuit's Decision*

As might have been expected, the EPA's action was challenged by an industry trade group. In *Corrosion Proof Fittings*, petitioners, including manufacturers of asbestos products and the Asbestos Industry Association, challenged the EPA regulation, alleging that the EPA's rulemaking procedure was flawed.[124] Petitioners argued that the findings on which the rule was based[125] were not supported by substantial evidence.[126] The court responded by evaluating both the procedural and substantive challenges to the regulation.[127]

Procedurally, the court found a deficiency in the EPA's decision process.[128] The court explained that the EPA improperly relied on certain data which had not been subjected to public scrutiny. The challenged data included estimates of populations exposed to asbestos. The EPA used these estimates to calculate the expected benefits, measured in terms of cancer cases avoided, of certain product bans. The estimates increased the EPA's projection of the number of human lives that would be saved as a result of the proposed rule.

The court held that the EPA's failure to subject this data to public scrutiny subverted the process of judicial review and, thus, required the court to overturn the EPA's asbestos regulation.[129] In support of this holding, the court quoted *Superior Oil Co. v. FERC*, explaining that courts do not function to strike down agency action because of merely formal or technical flaws, but must also determine "whether any procedural flaw so subverts the process of judicial review that invalidation of the regulation is warranted."[130]

Although the court in *Corrosion Proof Fittings* found reason to invalidate the regulation on procedural grounds, it nevertheless pervasively reviewed the substance of the Agency's analysis. The court applied the substantial evidence test, as TSCA requires, to evaluate whether the EPA's asbestos ban was justified.[131] The court relied on case law to define substantial evidence, explaining

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[124] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1208 (5th Cir. 1991). Section 19(a) of TSCA grants interested parties the right to appeal a final rule promulgated under section 6(a) of TSCA directly to any regional circuit court of appeals. Toxic Substances Control Act § 19(a), 15 U.S.C. § 2618(a) (1988 & Supp. IV 1992).

[125] The findings the petitioners challenged included the finding that asbestos constitutes an unreasonable risk to health and the environment and the finding that the rule would save either 202 or 148 lives at a cost of approximately $450 to $800 million.

[126] Corrosion Proof Fittings v. EPA, 947 F.2d at 1208. TSCA provides that a ruling court must hold unlawful and set aside a regulation promulgated under section 6(a) "if the court finds that the rule is not supported by substantial evidence in the rulemaking record . . . taken as a whole." Toxic Substances Control Act § 19(c)(1)(B)(i), 15 U.S.C. § 2618(c)(1)(B)(i) (1988).

[127] *See* 947 F.2d at 1208.

[128] *Id.* at 1212.

[129] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1211 (5th Cir. 1991).

[130] *Id.* (quoting Superior Oil v. FERC, 563 F.2d 191, 201 (5th Cir. 1977)).

[131] 947 F.2d at 1213. *See also* Toxic Substances Control Act § 19(c)(1)(B)(i), 15

that an agency basing a decision on substantial evidence must consider the entire record and the evidence must be "what 'a reasonable mind might accept as adequate to support [its] conclusion.' "[132] The court explained that its discretion was limited under this standard because "even if there is enough evidence in the record to support the petitioners' assertions, we will not reverse if there is substantial evidence to support the agency's decision."[133] While this statement suggests that the agency decision is given a presumption of validity, the court qualified this presumption as follows: "[The] agency rules [have] a presumption of validity, and it is up to the challenger to any rule to show that the agency action is invalid . . . . The burden remains on the EPA, however, to justify that the products it bans present an unreasonable risk . . . . "[134] The court did not explain how the presumption of a regulation's validity is to be reconciled with the burden of proof which it placed initially on the agency.[135] The court ignored the apparent inconsistency, however, and simply stated that the substantial evidence test imposes a heavier burden on the Agency than the arbitrary and capricious standard normally applied to informal agency rulemaking.[136]

The court then required the EPA to fulfill three substantive requirements to meet its burden, and pointed out the EPA's failure to meet each of them. First, the court interpreted TSCA's mandate to use the "least burdensome" requirements necessary to mitigate an "unreasonable risk"[137] as requiring the EPA to identify an acceptable level of non-zero risk and choose the least burdensome method of reaching that level.[138] It found that the EPA did not fulfill this mandate.[139] The court explained that in choosing a product ban, a costly regulatory measure, the EPA assigned itself the "toughest burden in satisfying TSCA's requirement that its [selected regulatory] alternative be the least burdensome" of those authorized.[140]

The court decided that, in order to meet this burden, the EPA had to show that other less burdensome regulatory alternatives authorized by TSCA would not reduce the risk of harm to an acceptable level.[141] The court held that the EPA both failed to identify a reasonably acceptable level of risk, and failed to

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U.S.C. § 2618(c)(1)(B)(i) (1988).

[132] Corrosion Proof Fittings v. EPA, 947 F.2d at 1213 (quoting American Textile Mfrs. Inst. v. Donovan, 452 U.S. 490, 522 (1981), (quoting Universal Camera Corp. v. NLRB, 340 U.S. 474, 477 (1951))).

[133] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1213 (5th Cir. 1991) (citations omitted).

[134] *Id.* at 1214.

[135] *Id.*

[136] *Id.*

[137] Toxic Substances Control Act § 6(a), 15 U.S.C. § 2605(a) (1988).

[138] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1215 (5th Cir. 1991).

[139] *Id.* at 1217.

[140] *Id.* at 1216.

[141] *Id.* at 1216-17.

show that the selected alternative was the least burdensome of the congressionally authorized alternatives.[142]

Second, the court required the EPA to set forth a reasonable basis in the record for the Agency's decision. To articulate a reasoned basis for its rules, the court required the EPA to illustrate with cost analysis that the alternatives selected were the least burdensome, to find that the quantifiable benefits of its ban warranted the quantifiable costs, and to demonstrate that the risk of harm resulting from increased use of substitutes for banned products was less than the risk of harm posed by asbestos.[143] Having so defined this reasonable basis test, the court found that the Agency failed to meet it, and had thus failed to establish a reasonable basis in the record for its decision.[144]

Finally, the court indicated that the EPA must "only take steps designed to prevent 'unreasonable' risks."[145] In evaluating the reasonableness of a risk, the court required the EPA to weigh the costs of its regulations against the benefits.[146] Thereby, the court implied that the economic cost of avoiding the risk was the decisive factor in determining whether or not the risk was reasonable. Then, the court performed this risk-benefit-cost balancing based only on the quantified costs and benefits, and determined that the EPA ignored the economic impacts of its regulation when it promulgated the final rule.[147] The court further explained that by ignoring economic impacts, the EPA failed to consider all the necessary evidence.[148]

B. *Limitations of the Court's Analysis*

Although the EPA's decision-making process may have been flawed,[149] the reasoning the court provided to justify overturning the ban was even more problematic. The court misinterpreted the Agency's procedural requirements, heightened the Agency's burden of proof, and expanded the scope of the substantial evidence test. With these judgments, the court may have eviscerated the EPA's power to regulate the use of toxic substances under section 6 of TSCA.

Applying *Superior Oil*, the court suggested that the EPA's reliance on estimates of asbestos exposure that were not subject to public scrutiny warranted the invalidation of the regulation on the procedural grounds that the Agency had thereby subverted the judicial review process.[150] Arguably, the Agency's reliance on these exposure estimates had little or no impact on the judicial review process because the Agency's use of the data was made part of the

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[142] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1217 (5th Cir. 1991).
[143] *Id.* at 1220-21.
[144] *Id.*
[145] *Id.* at 1222.
[146] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1222 (5th Cir. 1991).
[147] *Id.* at 1223.
[148] *See id.*
[149] *See supra* section III.D.
[150] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1212 (5th Cir. 1991).

rule-making record.[151] Furthermore, the Agency performed two sets of calculations; one set used the contested data, the other set did not.[152] Finally, the Agency did not present its conclusions based solely on the contested data; therefore, the court improperly assessed the importance of the data to the Agency's decision, and misjudged the procedural flaw as subverting judicial review. Although improperly argued under the *Superior Oil* precedent, the court did address the legitimate concern that agency decision-making be more accountable to the public. But neither precedent nor the Congress demands that every finding be reviewed by the public prior to issuing a final rule.[153]

By defining the substantive requirements the EPA needed to fulfill, the court confused the plain statutory guidelines set forth in TSCA and read additional and excessive requirements into the language of the statute.[154] As

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[151] *See* Final Rule, *supra* note 5, at 29,472-80.

[152] *See id.* at 29,472.

[153] *Cf.* Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1212 (5th Cir. 1991) (quoting Aqua Slide 'N' Dive v. CPSC, 569 F.2d 831, 842-43 (5th Cir. 1978)).

[154] Indeed, an argument may be made that TSCA did not require the EPA Administrator to conduct a cost-benefit analysis, a requirement which the court in *Corrosion Proof Fittings* seems to take for granted. Section 6(c)(1) of TSCA requires the Administrator of the EPA to consider whether a risk of injury to health or the environment could be eliminated or reduced to a sufficient extent by actions taken under another Federal law. If the Administrator determines that a risk of injury could be eliminated or reduced to a sufficient extent by actions taken under another Federal law, and if the Administrator still wishes to use this chapter, the Administrator must consider "(i) all relevant aspects of the risk . . . (ii) a comparison of the estimated costs of complying with actions taken under this chapter and under such law (or laws), and (iii) the relative efficiency of actions under this chapter and under such law (or laws) to protect against such risk of injury." Toxic Substances Control Act § 6(c)(1), 15 U.S.C. § 2605(c)(1) (1988). In short, if the risk may be reduced to a sufficient extent, that is, to the point of being a reasonable risk, then the Administrator is required to perform a cost-benefit analysis in order to determine whether TSCA provides a more efficient regulatory mechanism for risk reduction. But in documentation supporting the challenged ruling, the Administrator found that the risk of injury could not be eliminated by actions taken under another federal law, and therefore was not required to perform what would be a moot cost-benefit analysis. The court concurred with the Administrator's finding by upholding the EPA decision to use TSCA to regulate asbestos, and "fight a multi-industry problem." Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1216 (5th Cir. 1991). Since Congress specifically required the Administrator to perform a cost-benefit analysis to decide whether to take action under TSCA, but did not use these terms when authorizing the Administrator to consider the least burdensome regulatory option, Congress did not require the Administrator to perform a cost-benefit analysis in selecting among the TSCA authorized regulatory options. *See, e.g.*, American Textile Mfrs. Inst. v. Donovan, 452 U.S. 490 (1981) (explaining that when Congress requires the EPA to perform a cost-benefit analysis it describes this requirement clearly on the face of the statute). Nevertheless, the Agency was probably required to perform a regulatory impact analysis, which amounted to a cost-benefit analysis under Executive Order 12,291. 46 Fed. Reg. 13,193, 13,194-95 (1981).

described in section III.A. of this Note, sections 6(a) and (c) of TSCA set forth the requirements that the EPA Administrator must meet in order to make a decision based on substantial evidence. The EPA met each of these statutory requirements.

The court expanded the substantial evidence test by rigidly defining what the EPA had to do in order to meet the TSCA requirements. The court extracted three major requirements from TSCA. The EPA was required to (1) select the least burdensome alternative, (2) establish a reasonable basis in the public record, and (3) protect the public against unreasonable risk of harm, after considering all the necessary evidence.[155] While these tests may be drawn from TSCA sections 6(a) and (c), the statute does not support the detailed judgments the court makes regarding the EPA's failure to meet them.[156] Flaws in the court's reasoning with respect to each of these requirements are addressed below.

The court's first flaw was that it misread the statutory mandate requiring EPA to select the least burdensome regulatory alternative. TSCA requires the Administrator to select a means of regulating asbestos that would reduce the risk of harm to the public to a reasonable level.[157] A quantitative assessment of the costs and benefits of each of the regulatory alternatives authorized by TSCA was not mandated by statute. The EPA must have determined that the regulatory alternatives identified in section 6(a), other than the one selected, were not sufficient to reduce the level of risk to a reasonable level. Therefore, the EPA could not reasonably be required to weigh the costs of each of these alternatives to select the least burdensome one. Instead, the EPA selected a TSCA regulatory alternative that would reduce the risk of harm to a reasonable level. It evaluated the costs and benefits of several variations of this alternative to determine the least burdensome regulation that adequately protected the public health.[158] This was sufficient to meet the admittedly vague requirements of TSCA.

The second flaw in the court's reasoning was that the EPA failed to articulate a reasoned basis for its rules in the public record. Four of the court's criticisms of the EPA's Regulatory Impact Analysis illustrate how the court overreached its proper role of evaluating the public record. Rather than evaluating whether the decision was supported by substantial evidence in the record, the court critiqued the Agency's decision-making process. The court first criticized the EPA's decision to use existing asbestos exposure levels rather than best-case exposure levels as the baseline for calculating the number of cancer-cases avoided through regulation because it "artificially inflated the purported benefits of the rule."[159] The EPA had justified its decision on the basis of its belief that the difference between the two baselines was insignifi-

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[155] *See supra* text accompanying notes 137-148.

[156] *See* Toxic Substances Control Act § 6(a),(c), 15 U.S.C. § 2605(a),(c) (1988).

[157] *Id.*

[158] *See* REGULATORY IMPACT ANALYSIS, *supra* note 82, at IV-2.

[159] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1216 (5th Cir. 1991).

cant and that any benefit anticipated from the use of best available control technology was unknown.[160] The court substituted its judgment for that of the Agency in evaluating the Agency's quantitative decision model, despite the fact that the Agency's judgment was reasonable and adequately explained in the record.

Second, the court attempted to resolve a dispute in the record regarding the appropriateness of discounting the future lives that would be saved as a result of the regulation. The court stated that the EPA should discount both costs and benefits to preserve an "apples-to-apples comparison" of the benefits to the present value of the costs of the regulation.[161] A decision to discount future lives in valuing benefits of regulation has been seriously contested by policy analysts.[162]

It may be rational to discount future benefits in order to compare them to the present value of the costs. Nevertheless, the application of present value theory to public health regulation may be problematic because the utility (or price) we assign to future lives may not be the same as the utility we assign to present lives. For example, parents may value their children's lives over their own. Since applying present value theory to public health benefits assumes that there is no change in the utility of life over generations, discounting of future lives (unlike discounting of monetary benefits) may not reflect public preferences. A judgment about public preferences should not be made by the judiciary, but instead by a more responsive political body. The article the court cites to support its trendy position on discounting future benefits should have suggested to the court that the question of whether to discount our lives and the lives of our children is a value judgment, a policy decision best left to the legislative branch or to agency experts.[163]

Third, the court criticized the EPA's failure to extend its analysis beyond the year 2000. The thirteen periods over which costs and benefits were quantified is a weak point in the analysis and it is difficult to judge whether the unquantified benefits outweigh the costs during the period beyond the year 2000. Nevertheless, costs and benefits are most accurately predicted over a short period. In any case, such a decision is within the expertise of the EPA and not of the court.

Fourth, the court criticized the Agency's choice of the time of asbestos exposure as the appropriate time from which to discount benefits, rather than the time cancer would be expected to develop (30 to 40 years later). The Agency's choice was not patently unreasonable since the effect of the latency period on the present value analysis may be to seriously undervalue the human lives lost. Resolution of this methodological problem is best left to agency

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[160] Final Rule, *supra* note 5, at 29,474.

[161] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1218 (5th Cir. 1991).

[162] *What Price Posterity?*, THE ECONOMIST, Mar. 23, 1991, at 73.

[163] *Id.* (postulating that present value theory, an economic theory which suggests a preference for present consumption over future, may be inappropriate when applied to social or environmental policy).

discretion.

Rather than taking such an active approach, the court should have followed the *Superior Oil* precedent and restricted itself to assessing whether the Agency generated a record in which the factual issues were fully developed, to facilitate effective professional peer review, and legislative and public oversight.[164] Instead, the court criticized the substance of what it found in the record, rather than restricting itself to identifying what was missing or inadequately substantiated.[165] The court engaged in policy-making and improperly interfered with the decisions of a political arm of government.

The third flaw in the court's reasoning was its holding that the EPA exceeded its authority to protect against "unreasonable risk" and failed to consider "all necessary evidence."[166] The court conflated the statutory requirement to assess the reasonableness of the risk with the requirement to consider the economic consequences of the regulation.[167] Whether the risk of harm to the public is reasonable is not an economic question but a policy decision that should be made on the basis of the best scientific evidence available.

The court also criticized the conclusions the EPA drew from its economic analysis. It compared the costs with the *quantifiable* benefits and determined that the decision to promulgate the staged product ban was not reasonable.[168] Based on the EPA's findings, the court held that the benefits were not great enough to justify the costs of the ban.[169] The court thereby assumed that benefits which are difficult, if not impossible, to quantify could not possibly substantiate an Agency decision in favor of the ban. This assumption was not within the court's power; assigning significance to unquantifiable benefits, and recognizing the limitations of a quantitative model, involve policy judgments best left to agency expertise. As the Circuit Court for the District of Columbia stated: "Because administrative decisions often involve judgments based on incomplete or even conflicting scientific data, the agency 'may have to fill gaps in knowledge with policy considerations.' [Citation omitted.] Consequently, reviewing courts 'must examine both the factual evidence and the agency's policy considerations set forth in the record.' "[170] Rather than attempting to discern from the record the policy considerations which led to the EPA's decision, the Fifth Circuit improperly substituted its own policy judgments.

The court assumed that the assessment mandated by TSCA largely involved quantitative analysis. The Agency, however, has a broader definition of risk

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[164] *See* David L. Bazelon, *Risk and Responsibility*, 205 SCI. 277, 279 (1979).

[165] While the result might ultimately be the same, even if a court has the expertise to evaluate the agency's methodology, that methodology necessarily involves policy decisions which a court should not make.

[166] *See supra* text accompanying notes 148-150.

[167] *See* Toxic Substances Control Act § 6(a), (c), 15 U.S.C.§ 2605(a), (c) (1988).

[168] Corrosion Proof Fittings v. EPA, 947 F.2d 1201, 1219 (5th Cir. 1991).

[169] *Id.*

[170] Environmental Defense Fund v. EPA, 636 F.2d 1267, 1277-78 (D.C. Cir. 1980) (quoting AFL-CIO v. Marshall, 617 F.2d 636, 651 (D.C. Cir. 1979)).

assessment, which "includes quantification, but also includes qualitative expressions of risk. Quantitative estimates of risk are not always feasible, and they may be eschewed by agencies for policy reasons."[171] The court failed to consider the unquantified costs and benefits that the EPA had weighted heavily in making the decision,[172] thus ignoring policy considerations in the record that precedent required the court to consider.[173]

In summary, the court erroneously assessed the EPA's procedural deficiencies as sufficient to invalidate the regulation. The court found fault with the Agency's analytical approach largely because it disputed the Agency's policy judgments, rather than because it found deficiencies in the record. Disagreement with policy is an inappropriate basis for the court to invalidate an agency decision. The court's activist approach wrested the policy decisions from the administrative arm of government and placed them in the arms of the judiciary. While neither of these branches of government is elected, the administrative branch is more accountable to the public than the judiciary; its actions may be controlled by both the elected Congress and the elected executive.

Since the EPA did not appeal the court's decision,[174] *Corrosion Proof Fittings* remains precedent under which future courts may justify dissecting agency decisions and substituting their own policy judgments for those of the agency. The decision significantly affects the EPA's ability to regulate the use of asbestos and other toxic substances by increasing the Agency's burden of proof under the Toxic Substances Control Act[175] and heightening the standard of review that the federal courts may apply in administrative decisions.[176]

Since so much of our government's ability to take action to protect public health depends on agency decision-making under congressional mandate, judicial activism like that exhibited by the Fifth Circuit in *Corrosion Proof Fit-*

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[171] U.S. E.P.A., *Guidance on Risk Characterization for Risk Managers and Risk Assessors* 22 Envtl. L. Rep. (Envtl. L. Inst.) 35,447, 35,449 (Feb. 26, 1992).

[172] *See* Final Rule, *supra* note 5, at 29,468.

[173] *See* Environmental Defense Fund v. EPA, 636 F.2d 1267, 1277-78 (D.C. Cir. 1980) (quoting AFL-CIO v. Marshall, 617 F.2d 636, 651 (D.C. Cir. 1979)). Arguably, the quantitative analysis did support the Agency's decision. The sensitivity analysis performed in the Regulatory Impact Assessment indicated that, when the assumptions were changed, there was a high variance in the result. Since the Agency was dealing with public health, it may have been reasonable to conservatively base its decision on the lowest available cost estimate.

[174] If it had, it is unlikely that the Supreme Court would have granted certiorari on appeal.

[175] The impact of the ruling on future regulation under TSCA has been acknowledged by the EPA, conservatives and environmentalists alike. *See Environmentalists Say Asbestos Decision Reversal Proves TSCA Inadequate,* Daily Rep. for Executives (BNA) No. 205, at A9 (Oct. 23, 1991); *EPA Studying Recent Court Decisions for Judicial Trend or Lesson, Habicht Says,* Daily Rep. for Executives (BNA) No. 238, at A15 (Dec. 11, 1991); Peter Samuel, *Green Grows the Downturn O! EPA Environmental Policy*, THE NAT'L REV., Dec. 2, 1991, at 38.

[176] McGarity, *supra* note 10, at 1424.

tings eviscerates the ability of Congress and administrative agencies to safeguard the public.

V. CONCLUSION

Legal requirements aside, the legitimacy of the EPA's authority depends on its ability to make reasoned decisions.[177] In recent years, the EPA has attempted to foster its legitimacy by involving the public in the decision-making process and educating the public as to its methodologies.[178] These goals would be furthered if the Agency provided complete and accurate discussions of its decision-making process in the summaries of analysis supporting its final rulings.[179] Additionally, the legitimacy of the judicial system depends on its ability to review a case with unbiased logic.[180]

If the court's decision to invalidate the EPA regulations was appropriate, the decision should have been based on the EPA's failure to present a reasoned explanation of its decision-making process, rather than on the details of Agency policy analysis. Although such a decision would have had the same direct outcome, it would have fostered accountability to the public by demanding that the EPA more adequately articulate its decision-making process. Instead, the Fifth Circuit's decision shifted policy-making to the judicial branch, thereby eviscerating any accountability to the public in this particular policy decision.

Reviewing the details of agency policy analysis is not an appropriate role for the judiciary.[181] The choices of data and methodology for calculating costs and benefits in the Regulatory Impact Analysis are best left to the expertise of agency policy analysts. Public policy decisions are increasingly based on quantitative decision analysis, a technique in which judges are less likely to be schooled than policy experts.[182]

In addition, the effectiveness of the administrative process depends on con-

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[177] *Cf.* Fred Block, *Modernity, Democracy, and the Problem of Authority, in* SOCIAL CLASS AND DEMOCRATIC LEADERSHIP, ESSAYS IN HONOR OF E. DIGBY BALTZELL 216, 224 (Harold J. Bershady ed., 1989) (discussing the way a manager's credibility in relation to her employees depends on making a decision that is based on a careful review of different arguments).

[178] *See, e.g., Environmental Decision-Making Today, An Interview with Lee M. Thomas,* E.P.A. J., Nov. 1987, at 2-5; Thomas A. W. Miller & Edward B. Keller, *What the Public Thinks,* E.P.A. J., Mar.-Apr. 1991, at 40-43.

[179] Furthermore, the executive branch and the public would be more readily able to conduct comparative risk assessment of the Agency's regulatory programs if the published analysis supporting each regulatory decision provided comparable information.

[180] *Id.*

[181] *See* Leventhal, *supra* note 13, at 555.

[182] University programs in policy analysis train individuals for careers in public policy. For example, the Kennedy School of Government at Harvard University and the Woodrow Wilson School at Princeton University are prestigious programs granting Master's degrees in public policy or public administration.

gressional legislation which articulates intelligible principles to guide agency rule-making and judicial review.[183] The varying and conflicting statutory interpretations raised in *Corrosion Proof Fittings* suggest a congressional failure to articulate clear guidelines for EPA action and ascertainable standards for judicial review. By delegating broad policy-making authority to the EPA, Congress has skirted its responsibility to make the difficult decisions necessary to adequately protect the public health. Congress or the Executive could limit agency discretion by requiring agencies to maintain standards in performing quantitative analysis; failure to follow such standards would subject a decision to invalidation by the courts. These standards could be enforced by the courts using rational basis review.

The EPA's final ruling in 1989, setting forth a staged ban of asbestos, the Fifth Circuit's 1991 decision in *Corrosion Proof Fittings* invalidating the rule, and Congress's unclear mandate are illustrative of the lack of governmental accountability to the public. That these structural weaknesses in our government are demonstrated by agency and court actions involving public health issues such as the one discussed is particularly unfortunate, because ultimately the public bears the risks of harm.

If the administrative branch clearly and concisely articulates the basis of its rulemakings, if the judiciary exercises proper restraint in its review process, and if Congress takes carefully constructed, remedial legislative action, the government can effectively begin to address vital public health concerns.

Rita L. Wecker

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[183] This idea is grounded in the non-delegation doctrine, an administrative law doctrine that, if enforced by the judiciary, would ensure that social policy choices are made by Congress, that authority delegated to administrative agencies is guided by an intelligible principle, and that courts can test the exercise of delegated legislative discretion against ascertainable standards. *See* Industrial Union Dept. v. American Petroleum Inst., 448 U.S. 607, 685-86 (1980) (Rehnquist, J., concurring).