REGULATION AND INFORMATION DISCLOSURE: PARALLEL UNIVERSES AND BEYOND

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I. INTRODUCTION

The "social costs" of economic production are those costs, like pollution, that are not borne directly by product purchasers and therefore cannot be reduced to an optimum level by individual consumer choice. Although controlling social costs has long been a basic government function, direct government commands currently stand in low regard as a means of controlling them. In response, Congress has begun to enact, and agencies have begun to establish, programs that require regulated industries to disclose information about the social costs they create. Such "social cost disclosure" programs differ significantly from more traditional product labeling efforts, whose primary goal is to assist individual choice among products by informing purchasers about the hidden risks that a given product might impose on *them*. Rather, such programs require the disclosure of information that will urge non-federal governments to consider regulation to reduce the social cost being addressed, and will pressure the creators of that cost to consider voluntary action to reduce it.[1] Proponents of social cost disclosure programs claim they empower communities and citizen groups to address the problems disclosure reveals without the inefficiencies and the overriding of local preferences that inevitably attend national regulation.[2]

This Article argues that the growth of social cost disclosure programs could lead to far-reaching changes in the status and function of federal regulatory agencies—but only if the agencies seize that opportunity themselves. The agencies must take affirmative responsibility for the

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[1] The late Albert Hirschman identified two methods of reforming an institution. "Exit" occurs when the organization loses adherents—or when a firm loses customers—and creates an incentive for reform to stem the loss. When the organization's adherents stay in place and press for change directly, they seek reform through "voice." *See* ALBERT O. HIRSCHMAN, EXIT, VOICE AND LOYALTY 4, 21–44 (1970). Social cost disclosure programs appeal to voice, calling on those affected to stay where they are (sometimes because they have no choice) and reform the offending conduct, while product labeling programs appeal to exit by disclosing to the reader possible reasons not to buy the offending product.

For another description of the two types of disclosure programs and the differences between them, see Cass R. Sunstein, *Informational Regulation and Informational Standing: Akins and Beyond*, 147 U. PA. L. REV. 613, 619 (1999).

[2] *See, e.g.*, *infra* notes 51 and 60.

accuracy, both in content and presentation, of the public message such programs convey. Without such an effort, social cost disclosure may duplicate most of the defects of our existing system of command-and-control regulation. Conversely, an agency that makes the effort will discover that social cost disclosure programs both require, and can help accomplish, a closer engagement of the agency in the dialogue that shapes goals for social cost control. That closer engagement could, in turn, encourage significant revisions to the command-and-control system itself.

Part II begins by discussing the Environmental Protection Agency's ("EPA") "toxics release inventory" ("TRI") program—the oldest, most established, and best publicized federal social cost disclosure program. TRI requires selected factories and other establishments over a certain size to annually report their environmental releases of certain toxic chemicals. TRI in its present form does not and cannot achieve its ostensible goal of accurately informing the public about toxic releases. It omits many environmentally significant chemicals and focuses on sources that account for a small fraction of releases. It largely fails to note distinctions between more and less risky pollutants or modes of release. Finally, EPA has administered TRI in isolation, without coordination with other programs that might correct its defects. As a result, TRI fails to portray accurately the extent and the possible impacts of the chemical releases it purports to cover or to provide a basis for comparing those impacts with other uncovered risks.

Part III argues that the disclosure program duplicates in a parallel universe most of the defects of the command-and-control system from which it ostensibly departs. TRI has led to rapid and major release reductions by functioning like regulation rather than by broadening public understanding. It presents information in a manner designed more to advertise the need for emission reductions than to portray objectively health or environmental dangers.

EPA has been reluctant to take any action to correct these defects. That reluctance conforms to widely accepted views of agencies as lacking the political capacity to address effectively issues in the absence of an express political mandate. If Congress has failed to define meaningful goals for an agency, the agency itself is powerless to fill that gap. EPA may consider itself too weak compared to outside interests to supplement TRI data or to offer its own evaluation of it at acceptable political cost.

Part III argues further that EPA's passivity is both reflected in, and caused by, the absence of well-established goals to guide either TRI or traditional command-and-control efforts. An agency that possessed goals strong enough to guide a program's direction and choice of methods effectively would be better able to implement and, where necessary, change the means of pursuing them. Conversely, a weak agency that receives its direction from interest group pressure will be unlikely to possess such goals and will therefore have little power to set its own agenda.

Part IV argues that social cost disclosure programs, such as TRI, can help cure agency passivity. Any disclosure program will lead those affected to demand correction of errors and misleading impressions. Although new substantive regulations also lead to requests for relief, such demands are inherently harder to resist in the field of information disclosure than if relief from a regulation were sought.

As an agency responds to these natural pressures, its disclosure activities will move increasingly toward presenting information in a balanced manner and responding to legitimate criticism with corrections, rather than deploying a partial account of a problem for immediate rhetorical effect.[3] The sources of social cost themselves often report much of the initial data for a social cost disclosure program. However, as commenters on that data, or the data itself, raise more complex questions, relying on sources to answer them may become too expensive, or simply unacceptable, if the source has self-interested reasons to slant its answer. In such cases, only some other actor, often the agency itself, can provide an acceptably balanced clarification or response. As these questions multiply, the agency will need to determine exactly where and in what manner to invest its resources and its credibility in addressing them. Such determinations in themselves will require an agency with an active concept of its own mission.

Addressing these questions will also require a more active agency approach to gathering and managing data. Everything an agency does requires it to collect, evaluate, and disclose information. The information developed for one purpose will often be relevant to other issues, and gathering new data for each purpose will quickly become unacceptably expensive and inefficient. As a result, the question of how an agency should invest in gathering or repackaging information for a single social cost disclosure program cannot be separated from the questions of how it should gather, manage, and present *all* of its information.

Part IV suggests that an agency could organize such decisions by arranging its disclosure needs along a "disclosure spectrum." Information needed to define a new social goal—for example, to adopt a program to combat global warming—would fall at the top. Such information could be quite generic. Very specific information needed to implement a narrow and clearly established requirement—for example, regulation enforcement—would fall at the bottom. Intermediate steps, such as the adoption of regulations to implement a statute, would require information of intermediate specificity.

Only by determining the proper goals for each disclosure activity can an agency make sure that it occupies an appropriate place on the disclosure spectrum. However, since these disclosure activities mirror the

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[3] That in itself would mark a significant change in the way in which TRI information is at least implicitly presented. *See infra* text accompanying note 76.

full range of activities which the agency might undertake, or for which it might seek a new mandate through public dialogue, any assignment of disclosure activities to particular spectrum points must rest on a conception of the agency's present and future goals and the priorities among them. In this manner, the operation of a social cost disclosure program should lead an agency to better define the goals it believes it is entitled to pursue.

Part V argues, from a different perspective, for an active agency role in shaping the message of social cost disclosure programs. It shows that traditional burden of proof analysis justifies such a role. An active role also gives the agency a market-like incentive to improve the performance of its functions, just as the TRI reporting obligation has spurred reporting sources to improve their environmental performance.

An agency that clarified its goals and increased its public credibility by administering social cost disclosure in the dialogic manner described above would lay the foundation for reform of its regulatory and legislative mandates as well. Information and debate about its meaning are the raw materials from which such mandates are derived. Command-and-control rules administered by passive agencies have led to inefficient regulation, in part due to the lack of general goals around which a coherent regulatory system could be organized.[4] However, social cost disclosure programs by nature extend an invitation to consider such general goals and are likely to extend it more compellingly as they present more information in a nuanced manner as a result of the evolutionary process described above.

Part VI argues that such an evolution would encourage specific substantive changes in the regulatory system itself. These reforms might move towards a system of fewer, more general federal commands combined with greater deference to state and local decision-making and greater willingness to experiment with different approaches to a problem.

The more widespread and sophisticated use of social cost disclosure programs would have benefits running beyond increasingly capable federal agencies and reformed systems of substantive regulation. Dialogue and public debate can create public goals that are more than the sum of the private interests of those affected. This Article seeks to spell out the concrete implications for agency conduct and management of a "civic republican" effort to strengthen our national ability to create shared goals by public dialogue.[5] It argues that social cost disclosure programs pro-

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[4] *See generally* William F. Pedersen, *"Protecting the Environment"—What Does That Mean?*, 27 LOY. L.A. L. REV. 969 (1994).

[5] Mark Seidenfeld writes,

> The civic republican model rejects the pluralistic assertion that government can, at best, implement deals that divide political spoils according to the pre-political preferences of interest groups. Instead, government's primary responsibility is to

vide a stepping stone by which our current agencies can move toward that ideal.

II. THE TRI

This Part sets out the legal structure and regulatory history of the TRI program. It then examines four aspects of TRI's performance and structure, namely:

- TRI's success in bringing about voluntary emissions reductions from the facilities it covers;
- TRI's failure to account for most releases of TRI chemicals, since it does not address most sources of these releases;
- TRI's failure to include releases of other chemicals as hazardous or more hazardous than chemicals already listed; and
- EPA's failure to explain the risks posed by TRI releases or equip the public to assess those risks itself.

A. The Congressional Framework

1. The Statute

When Congress in 1986 amended the nation's basic hazardous waste cleanup statute,[6] it also enacted a set of emergency planning and disclosure requirements collectively known as the Emergency Planning and Community Right-to-Know Act ("EPCRA").[7] Section 313 of EPCRA established TRI. Congress confined TRI programs to industrial facilities, particularly excluding small businesses, governments, and farmers.[8] It required each facility over a threshold size in twenty of ninety-seven defined Standard Industrial Classification ("SIC") categories[9] to report to

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enable the citizenry to deliberate about altering preferences and to reach consensus on the common good.

Mark Seidenfeld, *A Civic Republican Justification for the Bureaucratic State*, 105 HARV. L. REV. 1511, 1514 (1992).

[6] Superfund Amendments and Reauthorization Act of 1986 ("SARA"), Pub. L. No. 99-499, 100 Stat. 1613.

[7] 42 U.S.C. §§ 11001–11050 (1994). EPCRA was Title III of SARA.

[8] *See infra* notes 33–36.

[9] More specifically, the program applied initially to facilities in SIC Codes 20 through 39, as in effect on July 1, 1985. *See* EPCRA § 313(b)(1), 42 U.S.C. § 11023(b)(1) (1994). The SIC Codes are used by the Census Bureau to classify all economic establishments in the country. SIC Codes 20–39, which are listed in OFFICE OF MANAGEMENT AND BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT, STANDARD INDUSTRIAL CLASSIFICATION MANUAL (1987), cover a wide range of manufacturing activities.

EPA added federal government activities to TRI in 1993, *see infra* note 55, and added seven new SIC Codes to TRI in 1997, *see infra* note 56. Even as extended, however, TRI omits all establishments engaged in agriculture, forestry, and fishing (SIC Codes 1 through

EPA every year on a standard form[10] ("Form R") its environmental "release[s]"[11] of any one of about three hundred identified chemicals.[12] The requirement only applied to plants that (1) "manufactured, processed, or otherwise used" between 5 and 12.5 tons of the chemical each year and (2) had ten or more employees.[13] These facilities also had to report the maximum quantity of each chemical on-site during the reporting year.[14] In 1991, Congress expanded the reporting obligation to cover amounts recycled on and off site.[15] In addition, the TRI reporting form required that facilities report the uses of covered chemicals as well as the exact point and manner of the environmental release.[16] This form was designed to allow the public to focus on the releases at issue and the activities that gave rise to them.

Facilities may base such reports on existing data. Congress specifically prohibited the imposition of any new monitoring requirements to implement TRI.[17] Failing to report and misreporting, however, are subject to civil penalties.[18]

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9), oil and gas extraction (13), mining and quarrying of nonmetallic minerals (14), construction of any type (15 through 17), any form of transportation or communication (40 through 48), any form of electric, gas, or sanitary services, except for generating electricity by burning coal or oil, or handling materials expressly defined by EPA regulation as hazardous wastes (compare SIC Code 49 with 40 C.F.R. § 372.22 (b) (1998)), any form of wholesale or retail trade, including gas stations and building and garden material supply stores (50 through 59), any service activity, including running a hospital, any form of dry-cleaning operation, a photographic plant, a pest control service, or an auto repair shop (70 through 89), and any state or local government activity (91 through 97).

[10] *See* EPCRA § 313(a), (g), 42 U.S.C. § 11023(a), (g) (1994).

[11] The statute defines "release" as "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles)." EPCRA § 329(8), 42 U.S.C. § 11049(8) (1994). It defines "environment" in turn to include "water, air, and land and the interrelationship which exists among and between water, air and land and all living things." EPCRA § 329(2), 42 U.S.C. § 11049(2) (1994).

[12] Congress devised a list particularly for this purpose. *See* EPCRA § 313(c), 42 U.S.C. § 11023(c) (1994).

[13] EPCRA § 313(a), (b), 42 U.S.C. § 11023(a), (b) (1994). In 1988, EPA estimated that the ten employee requirement "exempts 48 percent of all manufacturing facilities in SIC codes 20 through 39" from TRI reporting. Toxic Chemical Release Reporting; Community Right-to-know, 53 Fed. Reg. 4500, 4523 (Feb. 16, 1988) (to be codified at 40 C.F.R. pt. 372).

[14] *See* EPCRA § 313(g)(1)(C)(ii), 42 U.S.C. § 11023(g)(1)(C)(ii) (1994).

[15] *See* Pollution Prevention Act of 1990 ("PPA") § 6607(b)(2), 42 U.S.C. § 13106(b)(2) (1994).

[16] *See* OFFICE OF POLLUTION PREVENTION AND TOXICS, EPA, TOXIC CHEMICAL RELEASE INVENTORY REPORTING FORM R AND INSTRUCTIONS, Form R, Part II, §§ 3, 5 (rev. 1995).

[17] "Nothing in this section requires the monitoring or measurement of the quantities, concentration, or frequency of any toxic chemical released into the environment beyond that monitoring and measurement required under other provisions of law or regulation." EPCRA § 313(g)(2), 42 U.S.C. § 11023(g)(2) (1994).

[18] *See* EPCRA § 325(c), 42 U.S.C. § 11045(c) (1994) (authorizing the federal assessment of civil penalties up to $25,000 per day of violation for failure to comply with TRI requirements). EPA can seek civil penalties either administratively or by bringing an action

Congress also gave EPA authority to lower the chemical use threshold at which reporting would be required,[19] define the types of chemical "use" that trigger reporting,[20] impose reporting requirements on individual facilities outside the mandatory categories,[21] expand or contract both the mandatory categories[22] and the list of chemicals for which reporting is required,[23] and adjust the frequency of reporting.[24] EPA may take these

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in federal district court. *See* EPCRA § 325(c)(4), 42 U.S.C. § 11045(c)(4) (1994). *See, e.g.*, Steeltech, Ltd. v. EPA, 105 F. Supp. 2d 760 (W.D. Mich. 2000). EPCRA § 326, 42 U.S.C. § 11046 (1994), authorizes suits for injunctive relief by states and private citizens in cases where the federal government has not acted. It also authorizes the award of attorneys' fees to successful litigants, but requires sixty days notice before the complaint is filed. *See, e.g.*, Atl. States Legal Found. Inc. v. United Musical Instruments, U.S.A., Inc., 61 F.3d 473 (6th Cir. 1995); Atl. States Legal Found., Inc. v. Whiting Roll-Up Door Mfg. Corp., 772 F. Supp. 745 (W.D. N.Y. 1991); Del. Valley Toxics Coalition v. Kurz-Hastings, Inc., 813 F. Supp. 1132 (E.D. Pa. 1993). In 1998, the Supreme Court held that citizens did not have constitutional standing to bring suits for violations that were wholly past at the time the complaint was filed since those citizens would not qualify for any statutory relief. Steel Co. v. Citizens for a Better Env't, 523 U.S. 83 (1998). This decision severely curtails the power of citizen suits to serve as a practical enforcement mechanism for TRI since almost every source should be able to cure its violation within the sixty day notice period. That in turn would defeat the ability of a potential plaintiff to recover attorneys' fees and deter the filing of suits.

[19] *See* EPCRA § 313(f)(2), 42 U.S.C. § 11023(f)(2) (1994). The statute expressly allows such adjustments for "classes of chemicals or categories of facilities." *Id.* The only condition it places on the exercise of this authority is that it should "obtain reporting on a substantial majority of total releases of the chemical at all facilities subject to the requirements of this section." *Id.* Since this appears to restrain undue relaxation of reporting thresholds, only the general purposes of the section constrain the establishment of tighter reporting thresholds.

[20] The statute imposes reporting obligations on any facility that "manufactures, processes, or otherwise uses" more than threshold amounts of chemicals. EPCRA § 313(b)(2), 42 U.S.C. § 11023(b)(2) (1994). Since the law does not define the term "otherwise use," EPA can give it any meaning consistent with its extremely broad natural meaning. *See* Chevron U.S.A. Inc. v. NRDC, 467 U.S. 837, 842–43 (1984) (stating that reasonable agency statutory interpretations must prevail unless Congress has directly addressed the question at issue).

[21] Individual facilities not otherwise subject to TRI can be required to report

> if the Administrator determines that such action is warranted on the basis of toxicity of the toxic chemical, proximity to other facilities that release the toxic chemical or to population centers, the history of releases of such chemical at such facility, or such other factors as the Administrator deems appropriate.

EPCRA § 313(b)(2), 42 U.S.C. § 11023(b)(2) (1994).

[22] EPA may add new SIC codes to the reporting list, "but only to the extent necessary to provide that each [SIC] Code to which this section applies is relevant to the purposes of this section." EPCRA § 313(b)(1)(B), 42 U.S.C. § 11023(b)(1)(B) (1994). Since the purposes of this section are about as broad as possible, *see infra* note 25, this condition should not impose any restraint on the listing of any SIC category whose members release appreciable amounts of listed toxics.

[23] *See* EPCRA § 313(d), (e), 42 U.S.C. § 11023(d), (e) (1994).

[24] *See* EPCRA § 313(i), 42 U.S.C. § 11023(i) (1994). However, because the statute contains no express authority to reduce the ten employee reporting threshold, EPA believes it lacks authority to do this. *See* Persistent Bioaccumulative Toxic (PBT) Chemicals; Lowering of Reporting Thresholds for Certain PBT Chemicals; Addition of Certain PBT Chemicals; Community Right-to-Know Chemical Reporting, 64 Fed. Reg. 58,666, 58,673

steps to advance the purposes of the statute. Because Congress defined these purposes comprehensively,[25] EPA enjoys very broad discretionary authority from a strictly legal perspective to reshape the coverage of the program.[26]

EPA also enjoys broad power to determine the information disclosed under TRI. Congress did not specify the contents of individual facility reports or the use that EPA should make of them. The original 1986 legislation simply required an estimate of "[t]he annual quantity of the toxic chemical entering each environmental medium."[27] Upon receiving the reports, EPA must use them to create a "computer data base" and make them publicly available.[28] Legislation in 1990 added requirements to report the amounts recycled and to distinguish between continuing releases and releases from singular events.[29] The law, however, neither requires nor forbids EPA to characterize for the public the risks of TRI chemicals or the percent of total chemical releases that TRI covers.[30]

2. The Legislative History

The legislative history shows that Congress enacted TRI without considering the policy issues it raises. In 1985, a sudden chemical release at a Union Carbide plant in Bhopal, India, killed more than 3000 people. A much smaller release at another Union Carbide plant in West Virginia demonstrated that chemicals in this country could pose the same dangers.[31] Congress responded by adding provisions to the first environ-

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(Oct. 29, 1999) (to be codified at 40 C.F.R. pt. 372).

[25] Those purposes are:

> to provide information to the Federal, State and local governments and the public, including citizens of communities surrounding covered facilities . . . to inform persons about releases of toxic chemicals to the environment, to assist governmental agencies, researchers, and other persons in the conduct of research and data gathering, to aid in the development of appropriate regulations, guidelines, and standards, and for other similar purposes.

EPCRA § 313(h), 42 U.S.C. § 11023(h) (1994).

[26] As EPA has said of the provision allowing changes in reporting levels:

> This provision provides EPA with broad, but not unlimited, authority to establish thresholds for particular chemicals, classes of chemicals, or categories of facilities, and commits to EPA's discretion the determination that a different threshold is warranted [and] . . . the determination of the levels at which to establish any alternate thresholds.

Persistent Bioaccumulative Toxic (PBT) Chemicals, 64 Fed. Reg. at 58,667.

[27] EPCRA § 313(g)(1)(iv), 42 U.S.C. § 11023(g)(1)(iv) (1982 & Supp. IV 1986).

[28] EPCRA § 313(j), 42 U.S.C. § 11023(j) (1994).

[29] *See* PPA § 6607(b), 42 U.S.C. § 13106(b) (1994).

[30] See *infra* note 75 for a discussion of the broad scope of agencies' inherent power to disclose information.

[31] TRI was "enacted in response to an environmental crisis. Heightened fears of toxic

mental legislation available that required all companies that held more than specified amounts of acutely hazardous chemicals on-site to inform both their local emergency planning agencies and the public of their presence.[32] Congress added TRI to the same law as a supplemental disclosure provision.

TRI, however, does not address Bhopal-type dangers from chemical accidents. Instead, it targets the risk of illness posed by routine releases. While Bhopal-type disasters involve large spills of indisputably acute toxics, materials that cause lesser or longer-term effects are much harder to characterize medically and are released in a much wider variety of ways from a much wider set of sources. Providing a full picture of such releases poses formidable problems of data gathering and management. Explaining their absolute and comparative significance poses equally formidable problems of risk assessment and public communication.

The first of these challenges surfaced immediately during the House debate on an amendment to require reporting and disclosure from "any person" releasing chemicals that are "known to cause or . . . . suspected of causing cancer, birth defects, heritable genetic mutations, or other chronic health effects in humans."[33] The House first adopted the amendment after heated debate[34] and then dropped it after arguments that it would impose a duty to report any release of thousands of unspecified chemicals on farmers, gas stations, printers, dry cleaners, hospitals, and beauty parlors.[35] In response, the conferees adopted the elaborately structured program specifications summarized earlier and gave EPA broad power to vary them. The sponsor of the rejected House disclosure provision asserted that Congress, despite these restrictions, had intended the establishment of a comprehensive inventory of *all* toxic releases, and that EPA should use its discretion to expand TRI obligations to the extent necessary to achieve that purpose.[36] In all other respects, however, the policy issues inherent in the TRI approach went unaddressed.

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chemicals occasioned by the Bhopal disaster and a similar but less serious domestic incident led Congress to require industrial polluters to report toxic emissions." William M. Sage, *Regulating Through Information: Disclosure Laws and American Health Care*, 99 COLUM. L. REV. 1701, 1823 n.462 (1999) (*citing* Rebecca S. Weeks, *The Bumpy Road to Community Preparedness: The Emergency Planning and Community Right-to-Know Act*, 4 ENVTL. L. 827, 831–34 (1998)).

[32] These amendments became EPCRA §§ 311–312, 42 U.S.C. §§ 11021–11022 (1994).

[33] 131 CONG. REC. 34,758 (1985).

[34] *See* 131 CONG. REC. 34,759–66 (1985).

[35] *See* 131 CONG. REC. 35,657 (1985). TRI currently covers none of these source categories.

[36] *See* 132 CONG. REC. 29,747 (1986) (statement of Rep. Edgar).

B. TRI and Release Reduction

Legislatures have long required the labeling of individual products with information for the guidance of the purchaser.[37] The TRI program rests on a different and less individualistic philosophy.[38] The facility-by-facility reports on toxic releases that it requires are of more interest to the media and the public-at-large than to those who purchase or use the facility's product. A social cost disclosure program like TRI thus addresses the public in a calculated effort to provoke either collective action to address the topics of disclosure or a considered decision against such action.[39] Detailed disclosure of pollution releases will facilitate state and

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[37] The federal government has long required health warnings on cigarettes, 15 U.S.C. § 1333(a), (b) (1994), nutritional labeling on food, 21 U.S.C. §§ 341–350b (1994), and use instructions on drugs, 21 U.S.C. § 352 (1994), and pesticides, 7 U.S.C. 136a(c)(9) (1994). In more recent years Congress has required warning labels on alcoholic beverages, 27 U.S.C. § 215(a), (b) (1994), disclosure of real interest rates on consumer loans, 15 U.S.C. §§ 1601(a), 1610, 1632, 1637, 1646 (1994), disclosure of the condition of land purchased in an interstate sale, 15 U.S.C. § 1703(a) (1994), and energy efficiency labels on appliances, 16 C.F.R. § 305 (2000), as well as gas mileage information on automobiles, 49 U.S.C. § 32908(b) (1994), and posting of octane ratings on gasoline pumps, *see* 16 C.F.R. § 306.10 (2000). The requirement imposed under the Occupational Safety and Health Act that employers disclose to their employees the levels of toxic chemicals in the workplace, 29 C.F.R. § 1910.1200 (1999), is of the same nature—it is in effect a label on the job, which is the "product" for which the worker is the "customer." Similarly, the requirements of the Securities Exchange Act for full affirmative disclosure of the market condition of companies offering securities, 15 U.S.C. § 78(l)(b)(1) (1994), is effectively a label on the security being offered. The FTC has also promulgated binding rules requiring the labeling of fiberglass materials, quick-freeze aerosol sprays, and clothing tags. *See* Jamie A. Grodsky, *Certified Green: The Law and Future of Environmental Labeling*, 10 YALE J. ON REG. 147, 171 (1993).

[38] Of course, even a labeling program may also have social cost disclosure consequences. "A statute that requires companies to place 'eco-labels' on their products may produce little in the way of consumer response, but shareholders and participants in the democratic process may attempt to punish those whose labels reveal environmentally destructive behavior." Sunstein, *supra* note 1, at 619.

[39] TRI is not the only social cost disclosure program. The National Environmental Policy Act's requirement for an environmental impact statement before undertaking a "major federal action" that might significantly affect the environment was designed in part to inform the public and to allow them to bring pressure before such actions were taken. *See* Sunstein, *supra* note 1, at 621–22.

EPA has begun to experiment with other non-TRI social cost disclosure programs. *See infra* text accompanying notes 175–182. In addition, a few non-EPA federal programs share these characteristics. "[T]he Home Mortgage Disclosure Act, requiring disclosure of the geographic sources of a bank's deposits and geographic distribution of its loans, is designed to discourage banks from refusing to lend to particular neighborhoods or communities." STEPHEN G. BREYER, REGULATION AND ITS REFORM 161–62 (1982). According to one respected banking consultant, this program has been highly effective both in modifying bank conduct and in leading to a detailed dialogue with local communities. A bank that is forced to disclose a mortgage rejection rate for minorities higher than its rejection rate for applicants in general will feel pressed either to change its conduct if it economically can, or, if it cannot, to undertake the difficult task of explaining to the relevant community why the numbers do not mean what they appear to say, or why they reflect objective economic factors and not discrimination. *See* Interview with Karen Shaw Petrou, Executive Vice President, Institute for Strategy Development, in Washington, D.C. (Aug. 9,

local regulation of a source and promote voluntary release reduction by a source that sees the increased risk and wants to forestall it.[40] If disclosure shifts public preferences, both local regulation and voluntary control become even more likely. These reductions can be achieved without the costs and delays of a federal rulemaking, and perhaps without any rulemaking at all.[41]

Social cost disclosure itself articulates no substantive legal requirements. In fact, the conduct disclosed will be generally completely legal.[42] A social cost disclosure program only justifies its costs to the extent that it reveals information with a realistic chance of triggering new regulations. To pass that test, a social cost disclosure program must: (1) address topics that existing regulatory programs can readily address, and (2) specifically identify the potential targets of regulatory action. Meeting these conditions maximizes the chances that disclosure will lead to regulation or that sources will act preemptively to forestall regulation.

A social cost disclosure program that does not lead to regulation or self-regulation can still be legitimately counted as successful if it increases public understanding of the issues and leads to a more informed decision not to disturb the status quo.[43] However, promoting such public

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1997). Similarly, the Animal Welfare Act requires the filing of reports by laboratories on their treatment of animals. *See* 7 U.S.C. §§ 2131–2159 (1994).

California's Safe Drinking Water and Toxic Enforcement Act of 1986, CAL. HEALTH & SAFETY CODE § 25249.5–.13 (1999), adopted by referendum in 1986 ("Proposition 65"), embodies an approach somewhere between release disclosure and product labeling. It requires every product or workplace in certain specified categories that contains a product "known to the state to cause" cancer, birth defects, or reproductive harm to be labeled to that effect, *id.* § 25249.5, unless "the person responsible" for an exposure can show that the risk of that exposure falls below "no significant risk" levels established by the state. *Id.* § 25249.10. *See generally* Michael Barsa, *California's Proposition 65 and the Limits of Information Economics*, 49 STAN. L. REV. 1223 (1997). California also requires the filing of a pesticide use report after each use of a restricted pesticide. *See* CAL. FOOD & AGRIC. CODE §§ 12979, 14011.5 (1999). Based on these reports, "Californians for Pesticide Reform was able to assemble a comprehensive analytical report . . . and a series of internet-accessible maps showing total use for different regions of the state." J.B. Ruhl, *Farms, Their Environmental Harms, and Environmental Law*, 27 ECOLOGY L.Q. 263, 338 (2000).

[40] By reducing the transaction costs of regulation by a community, release disclosure makes it easier for such communities to take actions that reflect their true preferences. This strengthens the case for allowing communities to make the decision to regulate or not to regulate on their own, rather than being preempted by overriding federal regulation. *See* Paul R. Kleindorfer & Eric W. Orts, *Informational Regulation of Environmental Risks*, 18 RISK ANALYSIS 155 (1998).

[41] In theory, the process costs of many local rulemakings might exceed the process costs of a single federal rulemaking. However, when public disclosure precedes regulation, the pressure for release reduction created by the disclosure program may make the industry in question reluctant to oppose the regulation too vigorously.

[42] If it were not, social cost disclosure would lose much of its purpose since society would already have decided, at least initially, how to address these releases. Information that is more precise and technically valid than the information a social cost disclosure program provides would probably be needed to enforce the regulations that embodied that decision.

[43] Information disclosure can also be used to spur regulatory actions other than release controls. As noted earlier, Proposition 65 exempts from mandatory disclosure activities

understanding may not be as rewarding to advocates or program managers as actual changes in conduct. For that reason, supporters and managers of a social cost disclosure program may stand in institutional danger of exaggerating the magnitude of the costs it describes.[44] By the same token, TRI may be in institutional danger of exaggerating the need to reduce releases.[45]

TRI meets both of the conditions described above for a successful social cost disclosure program. States and local governments have long-established systems for regulating pollution from factories, and the TRI reports identify the regulatory targets.

TRI's history dramatically confirms the power of a social cost disclosure approach in these circumstances. The first round of TRI reports uncovered chemical release levels from big factories far higher than most people, including the management of the firms owning the factories, had suspected.[46] This was front-page news. This disclosure in turn led to "voluntary" efforts that reduced release levels from these sources far more quickly and efficiently than any mandatory regulation,[47] and with-

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that result in a risk from exposure to covered chemicals below a de minimis level established by the State of California. *See supra* note 39. That gives those responsible for the exposure an incentive to cooperate in the state's efforts to establish such de minimis levels for them. Accordingly,

> to date nearly 300 [such] standards have been set without a single legal challenge. This experience prompted a review panel appointed by California Governor Pete Wilson to declare that "by federal standards, Proposition 65 has resulted in 100 years of progress in the areas of hazard identification, risk assessment and exposure assessment."

Barsa, *supra* note 39, at 1240. For suggestions for extending this approach, see *infra* text accompanying notes 146–149.

[44] The very act of disclosure may tend toward exaggeration due to "'alarmist bias,' as frightening information is more salient and potent than comforting information, regardless of what is true." Sunstein, *supra* note 1, at 627. This bias may be more potent when political action, rather than changes in individual conduct, is the natural response, since "[p]eople often believe themselves to be immune from risks that they acknowledge are significant and real with respect to others." *Id.* at 628.

[45] Products subject to Proposition 65 generally bear a label reading "WARNING: this product contains a chemical known to the State of California to cause [the harm in question]." Barsa, *supra* note 39, at 1227–28. Critics have argued that such disclosure requirements exaggerate the risks presented by the chemical at issue through use of the word "WARNING" and by failing to give any indication of the magnitude of the risk. *See id.* at 1228–31. Critics also claim that Proposition 65's proponents deliberately designed it this way because they were more interested in generating pressure on users of toxic chemicals to reduce their releases than in informing the public accurately about toxic risks. *See id.* at 1238–39.

[46] "[The first TRI data] shocked a lot of the industry folks, the magnitude of these releases. It really hit home. People from boardrooms all the way down to plants recognized they had to get aggressive to try to find ways to reduce these emissions." Dan Borne, Louisiana Chemical Association, TIMES-PICAYUNE, Feb. 17, 1991, *quoted in* ENVIRONMENTAL DEFENSE FUND, TOXIC IGNORANCE 39 (1997).

[47] "Facilities currently covered by the TRI have reduced their reported releases of toxic chemicals by 44 percent, or 1.6 billion pounds, since 1988." Addition of Reporting Ele-

out any additional cost to the government beyond the expenses of TRI itself.[48] Moreover, the TRI example has led some state and local governments to enact similar programs, which sometimes cover more sources and chemicals than the federal TRI.[49]

A decade later, this success has made TRI a poster child for the argument that new forms of environmental regulation that combine less bureaucracy with more effectiveness lie within our reach. President Clinton has advanced that claim at least three times recently, once in his 1996 State of the Union message.[50] The past success of TRI helped defeat a "regulatory reform" bill in the 104th Congress that attempted a legislative rollback of the scope of TRI.[51]

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ments; Toxic Chemical Release Reporting; Community Right-to-Know, 61 Fed. Reg. 51,322, 51,322 (proposed Oct. 1, 1996) (to be codified at 40 C.F.R. pt. 372).

[48] The TRI program runs on a budget of about $25 million a year and covers 26,000 facilities. A major "best technology" rule would cost $5–10 million a year over 5 or 10 years to develop and would cover a couple of hundred facilities. *See* Interview with Mark Greenwood, former Director, EPA Office of Pollution Prevention and Toxics, in Washington, D.C. (May 9, 1997).

[49] TRI-type programs have been adopted by Massachusetts, Minnesota, New Jersey, Washington, and Oregon. The Massachusetts program moves beyond the TRI framework to require both more information and the development of peer reviewed plans by subject facilities to reduce their releases of covered chemicals, although the degree of reduction is left to the judgment of the facility. *See* Michael C. Dorf & Charles F. Sabel, *A Constitution of Democratic Experimentalism*, 98 COLUM. L. REV. 267, 379–82 (1998). "Australia, Canada, the Czech Republic, Egypt, Mexico, the Netherlands, Norway, the Philippines, and the United Kingdom have all established 'pollution release and transfer registries' . . . many explicitly based on TRI." Bradley C. Karkkainen, *Information As Environmental Regulation: TRI and Performance Benchmarking. Precursor to a New Paradigm?*, 89 GEO. L.J. (forthcoming 2001) (manuscript at 213, on file with the *Harvard Environmental Law Review*).

Many EPA programs are developing "pollution disclosure" programs with important similarities to TRI. EPA's Office of Water, for example, is working on a program that would comprehensively portray the environmental health of 2100 watersheds and the forces threatening them. *See* Interview with Mark Greenwood, *supra* note 48. EPA's Office of Enforcement is working on an extremely controversial initiative that would gather and make electronically accessible a full range of compliance information on individual facilities. *See id.* EPA's Air Program is similarly seeking to make more widely available the comprehensive data on air emissions that it collects. *See id.* In 1999, 70,000 facilities began to report in greater detail the amounts of acutely hazardous materials present at their facilities, together with a worst case analysis of the consequences if they should be released. *See* 40 C.F.R. § 68.10, .25 (1999); Accidental Release Prevention Requirements: Risk Management Programs Under Clean Air Act Section 112(r)(7), 61 Fed. Reg. 31,668, 31,670 (June 20, 1996) (to be codified at 40 C.F.R. pt. 68). These plans too must be made publicly available. *See* 40 C.F.R. § 68.210 (1999).

[50] *See* Address Before a Joint Session of the Congress on the State of the Union, 32 WEEKLY COMP. PRES. DOC. 90, 95 (Jan. 23, 1996). *See also* Remarks to the Community in Hackensack, New Jersey, 32 WEEKLY COMP. PRES. DOC. 462, 465 (Mar. 11, 1996); Remarks to Participants in Project XL, 31 WEEKLY COMP. PRES. DOC. 1976, 1977 (Nov. 3, 1995).

[51] The Comprehensive Regulatory Reform Act of 1995, S. 343, 104th Cong., also known as the Dole-Johnston Bill, among many other changes to the federal regulatory process, proposed major changes to the procedures by which chemicals were added to and deleted from TRI. The bill gave EPA 180 days from the bill's enactment to reassess the characterization of all chemicals that had been added to TRI since November 1994. *Id.* A proposed amendment to the bill suggested that chemicals be evaluated according to a risk-

That clear initial success, however, should not blind us to the ways in which TRI fails to inform the public of the true extent of either toxic releases or the toxic risks that they face. The most important weaknesses are: (1) the failure to cover all sources of listed TRI chemicals; (2) the failure to include in TRI all chemicals that match or exceed the hazard posed by chemicals already listed; and (3) the failure to characterize either the hazards or the risks of TRI releases.[52]

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based standard, on the basis of whether they presented a "foreseeable significant risk to human health or the environment." 141 CONG. REC. S9293 (daily ed. June 28, 1995). A later amendment added that EPA could make decisions based "on the rule of reason, including a consideration of the . . . levels of the chemical in the environment that may result from reasonably anticipated releases." 141 CONG. REC. S9550 (daily ed. June 30, 1995).

Opponents of the bill argued that these changes would gut TRI and pointed out TRI's many asserted advantages. They cited the fact that since 1986, TRI had contributed to a 40% reduction in the level of toxic releases into the atmosphere. *See* 141 CONG. REC. S9412 (daily ed. June 29, 1995). Senators noted an emissions reduction of two billion pounds. *See* 141 CONG. REC. S9764 (daily ed. July 12, 1995). Second, they hailed TRI as a sunshine law that did not impinge on anyone in any way, did not prevent chemical plants from producing or using chemicals, and just required companies to tell the people in the community what they were emitting. *See* 141 CONG. REC. S9412 (daily ed. June 29, 1995). Third, TRI was praised because it had encouraged "businesses to reduce waste for the sake of their own bottom line." 141 CONG. REC. S9886 (daily ed. July 13, 1995) (statement of Sen. Lautenberg). Finally, supporters of TRI noted that TRI helps fire departments, "the men and women who have to fight the local chemical plant fires and clean up chemical spills." 141 CONG. REC. S10,094 (daily ed. July 17, 1995) (statement of Sen. Glenn).

In the end, Senator Dole never brought his own legislation to a vote.

[52] Toxic chemical assessment measures a chemical's "hazard" by its ability to produce harm when an organism is directly exposed to a specified quantity in a specified manner—for example, in a laboratory feeding study. A chemical's "risk" describes the probability that it will produce harm in the real world. *See* STEPHEN BREYER, BREAKING THE VICIOUS CIRCLE 9–10 (1993). A "risk assessment" therefore requires not just a hazard evaluation, but also an estimate of the extent and manner of actual releases of that chemical, and the degree to which it will persist in the environment, so that the exposure of people or other living things can be projected. In rough terms, a chemical's risk is equal to its hazard times the degree of exposure to that hazard. *See* ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 427–32 (3d ed. 2000).

EPCRA § 313(d)(2)(A), 42 U.S.C. § 11023(d)(2)(A) (1994), requires the listing of any chemical that "is known to cause or can reasonably be anticipated to cause significant acute human health effects at concentration levels that are reasonably likely to exist beyond facility site boundaries as a result of continuous, or frequently recurring, releases." However, where "chronic" effects like cancer, or serious or irreversible birth defects, or neurological disorders are concerned, EPCRA requires listing whenever a chemical "is known to cause or can reasonably be anticipated to cause" those effects in humans. *Id.* § 313(d)(2)(B), 42 U.S.C. § 11023(d)(2)(B).

EPA has interpreted this language to require a risk assessment before the listing of chemicals for acute effects, while chronic effects can be listed based solely on hazard. The EPCRA language authorizing the listing of chemicals for environmental effects falls between the two formulations quoted above, and EPA has therefore interpreted it to require some consideration of exposure, but not a full risk assessment. The courts have sustained all of these positions. *See* Troy Corp. v. Browner, 120 F.3d 277, 284–86 (D.C. Cir. 1997).

There is no logical reason for declining to publicize the risk of a TRI chemical even if it is not listed based on risk. Moreover, EPA does not publicize the different hazards of TRI chemicals, even though they can vary over many orders of magnitude.

C. Failure to Cover all Sources of TRI Chemicals

Congress in 1986 carefully restricted TRI coverage to major industrial sources. These sources, however, have been so intensively regulated for so many years that they now make up a relatively small and diminishing part of most pollution inventories.[53] According to an early, imperfect estimate, the sources covered by the legislative TRI specifications account for less than five percent of the environmental releases of the legislatively listed chemicals.[54]

In 1993, President Clinton required all Executive Branch facilities to comply with TRI.[55] On Earth Day 1997, Vice President Gore announced an expansion of the reporting obligation to facilities in seven additional SIC codes.[56] In 1999, EPA drastically lowered the reporting thresholds for releases of "persistent bioaccumulative toxic" ("PBT") chemicals.[57]

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[53] Water discharges now come largely from "non-point sources," run-off from farms and urbanized areas, not from factories. *See* OFFICE OF WATER, EPA, THE QUALITY OF OUR NATION'S WATERS: A SUMMARY OF THE NATIONAL WATER QUALITY INVENTORY: 1998 REPORT TO CONGRESS 7, 9 (2000) (agriculture and run-off both outrank all point source discharges as sources of water quality impairment in rivers and lakes). Similarly, only 20% of emissions of "toxic air pollutants" comes from factories. *See* H.R. REP. NO. 101-490, pt. 1, at 316–17 (1990). The same low figure holds true for the volatile organic compounds that help cause ozone. *See* Richard E. Ayres, *Developing a Market in Emission Credits Incrementally: An 'Open Market' Paradigm for Market-Based Pollution Control*, 25 ENV'T REP. (BNA) 1522, 1528–29 (Dec. 2, 1994). A recent EPA report identified not just industrial facilities, landfills, and hazardous waste sites and generators as important causes of groundwater pollution, but also "underground storage tanks . . . septic systems . . . aboveground storage tanks . . . spills, fertilizer and pesticide applications, pipelines and sewer lines . . . animal feedlots . . . urban runoff, [and] salt storage and road salting." OFFICE OF WATER, EPA, SAFE DRINKING WATER ACT, SECTION 1429 GROUND WATER REPORT TO CONGRESS 12 (1999). *See id.* at 12–18.

[54] *See* GENERAL ACCOUNTING OFFICE, TOXIC CHEMICALS: EPA'S RELEASE INVENTORY IS USEFUL BUT CAN BE IMPROVED 3 (1991). *See also Expansion of the Right to Know Program: Hearing Before the Subcomm. on Superfund, Ocean, and Water Protection of the Comm. on Env't and Pub. Works*, 102d Cong. 41 (1991) (detailing specific examples of major releases not subject to TRI). Many of these releases are still uncovered.

[55] Exec. Order No. 12,856, 58 Fed. Reg. 41,981 (Aug. 3, 1993). However, Section 5-502 of the Order makes the judicial enforcement provisions of EPCRA inapplicable to federal agencies. This omission also shields government agencies from "citizen suits," which have been an important EPCRA enforcement mechanism.

EPA has also excluded state and local government facilities from TRI coverage, stating that although they "may manage significant quantities of [TRI] chemicals, the manner in which they manage these chemicals raises several cross-governmental issues EPA is continuing to address." Addition of Facilities in Certain Industry Sectors; Toxic Chemical Release Reporting; Community Right-to-Know, 61 Fed. Reg. 33,588, 33,592 (proposed June 27, 1996) (to be codified at 40 C.F.R. pt. 372).

[56] *See* Addition of Facilities in Certain Industry Sectors; Revised Interpretation of Otherwise Use; Toxic Release Inventory Reporting; Community Right-to-Know, 62 Fed. Reg. 23,834 (May 1, 1997) (to be codified at 40 C.F.R. pt. 372).

[57] *See* Persistent Bioaccumulative Toxic (PBT) Chemicals; Lowering of Reporting Thresholds for Certain PBT Chemicals; Addition of Certain PBT Chemicals; Community Right-to-Know Chemical Reporting, 64 Fed. Reg. 58,666 (Oct. 29, 1999) (to be codified at 40 C.F.R. pt. 372). Because the new rule would only cover facilities that exceed the ten employee TRI threshold and fall within the SIC codes covered by TRI, the lower thresh-

However, no one pretends that TRI, even as amended, covers the majority of environmental releases of listed chemicals, much less that it provides a full inventory.[58] In fact, EPA claims to possess no official estimate of the percentage of chemical releases that are in TRI.[59]

This is a remarkable fact. Numerous EPA pronouncements echo the law in describing TRI as intended to inform local governments and the public about the toxic exposures they face.[60] It cannot achieve this pur-

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olds would be unlikely to provide an accurate picture of releases of these chemicals.

[58] According to Environmental Defense ("ED"), the environmental group that tracks EPA's implementation of TRI most closely, "Pollution sources that are not covered by TRI probably account for the vast majority of environmental releases of most chemicals." ED, *Which Pollution Sources Are Covered By TRI?*, *at* http://www.scorecard.org/general/tri/tri_source.html (last visited Nov. 30, 2000) (on file with the *Harvard Environmental Law Review*).

ED's more recent statements are less definitive, but the message is the same. ED now says, "Although these reports include many of the most important releases from manufacturing facilities, they do not cover all toxic chemicals that are being released to the environment. The reports do not cover other important sources of toxic chemical releases such as cars, small businesses, and electric utilities." ED, *Caveats*, *at* http://www.scorecard.org/about/txt/caveats.html (last visited Nov. 30, 2000) (on file with the *Harvard Environmental Law Review*). Also:

> Cars, trucks, and small businesses are responsible for most of the health risks associated with poor air quality. Of the air cancer risk estimated for the US as a whole, 51% is from mobile sources and 28% from small-business area sources, with the remaining 21% from industrial point sources.

ED, *What's New*, *at* http://www.scorecard.org/about/txt/new.html (last visited Nov. 30, 2000) (on file with the *Harvard Environmental Law Review*).

[59] EPA, in its most recent proposal to expand TRI, replied as follows to suggestions from other agencies that it estimate the total amount of TRI chemicals released from all sources:

> EPA has not estimated the total national releases to all media for the toxic chemicals in this proposed rule (and in previous proposed and final rules) because EPA believes that (1) there is insufficient information currently available for these chemicals and (2) there is insufficient information on the numerous processes involved to calculate a comprehensive release estimate for the sector.

Persistent Bioaccumulative Toxic (PBT) Chemicals; Lowering of Reporting Thresholds for Certain PBT Chemicals; Addition of Certain PBT Chemicals; Amendments to Proposed Addition of a Dioxin and Dioxin-Like Compounds Category; Toxic Chemical Release Reporting; Community Right-to-Know, 64 Fed. Reg. 688, 718 (proposed Jan. 5, 1999) (to be codified at 40 C.F.R. pt. 372).

[60] For the law itself, see *supra* note 25. The most comprehensive statement of EPA's position is set forth in EPA's recent lowering of TRI reporting thresholds for PBT chemicals. In discussing the benefits of TRI generally, the notice says that TRI

> empowered the Federal government, State governments, industry, environmental groups, and the general public to fully participate in an informed dialogue about the environmental impacts of toxic chemicals in the United States . . . . Since the TRI program's inception in 1987, the public, government, and the regulated community have had the ability to understand the magnitude of chemical releases in the United States and to assess the need to reduce the uses, releases, and other waste management of toxic chemicals. TRI enables all interested parties to establish credible baselines, to set realistic goals for environmental progress over time,

pose if the information disclosed omits large categories of exposure, since the partial information will not convey a true picture of risk to local governments, the public, or anyone else.[61] Yet ten years after TRI was

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> and to measure progress in meeting [them]. The TRI program is a neutral yardstick by which progress can be measured by all stakeholders.

Persistent Bioaccumulative Toxic (PBT) Chemicals, 64 Fed. Reg. at 58,742. The proposal also praises TRI in more strictly economic terms. "The market may also fail to efficiently allocate resources in cases where consumers lack information. For example, where information is insufficient regarding toxic releases, individuals' choices regarding where to live and work may not be the same as if they had more complete information." *Id.* at 58,740. The preamble goes on to say that TRI repairs this information gap and "enables individuals to make choices that enhance their overall well-being," *id.*, and to "make informed decisions on where to work and live," *id.* at 58,742, and that it "assists Federal, State and local authorities in making better decisions on acceptable levels of toxic chemicals in the environment," *id.* For very similar statements, see Addition of Facilities in Certain Industry Sectors; Revised Interpretations of Otherwise Use; Toxic Release Inventory Reporting; Community Right-to-Know, 62 Fed. Reg. 23,834, 23,884 (May 1, 1997) (to be codified at 40 C.F.R. pt. 372).

But clearly, a TRI program that omits most of the releases of the chemicals that it covers will not enable a more informed dialogue, lead to more informed choices as to where to live and work, identify hot spots, monitor trends, or assist in the development of more efficient controls. On the contrary, by suggesting that only listed releases from major sources need to be considered, it may lead to less informed and efficient decisions in each of these areas.

[61] Public commenters have urged comprehensive expansion of the TRI program since its beginnings. When EPA issued the proposal that established the reporting system,

> [c]omments from trade associations, private companies, State agencies, public interest groups and academia requested that EPA use its authority under section 313(b)(1)(B) to include other facilities. These commenters noted that other kinds of facilities beyond those in the manufacturing sector can have significant releases of toxic chemicals. They contend that if the current scope of reporting is not expanded, the public will not realize that manufacturing releases constitute only a part of the total releases of these chemicals into the environment.

Toxic Chemical Release Reporting; Community Right-to-know, 53 Fed. Reg. 4500, 4503 (Feb. 16, 1988) (to be codified at 40 C.F.R. pt. 372).

Similarly, when EPA expanded the TRI categories in 1997, environmental commenters asserted "that EPA should abandon the process of adding individual industry groups, and should instead require any facility exceeding the EPCRA section 313 reporting thresholds to comply with current reporting requirements, while steadily lowering the reporting thresholds over time." Addition of Facilities in Certain Industry Sectors, 62 Fed. Reg. at 23,844.

EPA responded to the 1988 comment by saying that it would consider the issue, but flatly rejected the 1997 comment, saying that the law required the agency to proceed SIC code by SIC code. EPA added:

> It may not be appropriate or relevant to add all industry groups or facilities. Further, EPA believes it important to expand the section 313 program in an orderly manner to optimize the information previously collected by TRI. EPA believes that incremental additions may provide greater continuity to the wealth of information maintained and made available in TRI.

Id. See also id. at 23,856.

The agency's defense is striking in its reliance on the details of the present TRI program to avoid dealing with the central point of the comments being rejected—namely, that

established, it continues to contain exactly such omissions. Indeed, EPA has flatly rejected numerous public requests to correct them.

Most substantive regulatory control systems resemble TRI in addressing far stricter commands to large discrete sources of risk than to small sources, even though a strict quantitative comparison suggests the risk from the small sources may be both greater and more cost-effective to control. Nuclear power plants are regulated more strictly than kerosene space heaters, and commercial airliners more than automobiles. Analysts in recent years have argued that such a quantitatively disproportionate targeting of large sources need not reflect irrational policy judgments. Large sources may pose public risks that are as qualitatively different from the more private risks posed by smaller sources. Risks from large sources, for example, may be more likely to occur as large catastrophic events and may be less intuitively understood, less voluntarily assumed, and perceived as less controllable than small source risks. Because so many factors beyond strict magnitude distinguish the two types of risk, a preference for controlling public risk over private risk cannot be termed irrational even if a quantitative comparison would not support it.[62]

Whatever the merits of this position in the field of substantive risk regulation, it does not support restricting TRI to large sources. Since a molecule of benzene, or any other chemical, has the same impact whatever the size of the emitting source, most of the points of distinction between large and small sources generally relied upon do not apply in the TRI context. More philosophically, the very act of disclosing source emissions through their inclusion in TRI may shift the public view of the risk they pose from private to public.[63] Since undisclosed risks tend to be private, to oppose inclusion of small sources in TRI because the risks they pose are private is to engage in circular reasoning. That is particularly true for a program that does not impose direct control obligations, but simply aims to assist decisions by others. The citizens of one locality may decide to regulate benzene from refineries far more strictly than benzene from gas stations for a variety of non-quantitative reasons. Because this is their choice, a program designed to assist local regulation of toxics should provide quantitative information on the importance of both

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the TRI program is so underinclusive that it cannot achieve its designated purpose of informing the public of toxic risks.

[62] *See* Clayton P. Gillette & James E. Krier, *Risks, Courts and Agencies*, 138 U. PA. L. REV. 1027, 1071–85 (1990). *See also* Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 48–63 (1995); Donald T. Hornstein, *Reclaiming Environmental Law: A Normative Critique of Comparative Risk Analysis*, 92 COLUM. L. REV. 562, 584–629 (1992).

[63] As Robert Reich has written, "the act of participation [in a debate on public policy deliberately framed to include certain issues] has turned private concerns into appropriate subjects of public debate and—by implication—of public action." Robert B. Reich, *Public Administration and Public Deliberation: An Interpretive Essay*, 94 YALE L.J. 1617, 1627 (1985).

source types. Failure to provide the citizens with that information will prejudge the issue of controlling smaller sources by denying them the tools they need to address it.

D. Failure to Cover Certain Hazardous Chemicals

TRI is intended to give the public a full picture of releases of environmentally hazardous chemicals. For that reason, the same consistency arguments that support extending TRI coverage to all sources of listed chemicals also support extending TRI coverage to all chemicals above some defined hazard level[64] and dropping chemicals below that threshold. To its credit, EPA has made advances in correcting TRI undercoverage and overcoverage.[65] EPA addressed undercoverage in a single massive rulemaking, now upheld by the courts, that doubled the number of TRI chemicals listed.[66] The delisting of seventeen chemicals in response to industry petitions addressed overcoverage.[67]

From a wholesale perspective, however, TRI covers only a fraction of chemicals.[68] Moreover, EPA has been unable to extend TRI coverage

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[64] That suggestion does not necessarily accept as good policy the current legal requirement for basing many TRI listings solely on hazard. Instead, it uses that requirement as a starting point in order to show that EPA's current approach lacks justification even on its own terms.

[65] To some extent, chemical coverage cannot be separated from source coverage. For example, TRI coverage of chemicals that are toxic at very low thresholds would require the imposition of reporting obligations on sources smaller than are otherwise covered. EPA's approach to such mixed questions has reflected the weaknesses of its approach to source coverage generally. Although EPA has proposed increasing the number of PBT chemicals listed in TRI and establishing particularly low thresholds for reporting their release, *see* Persistent Bioaccumulative Toxic (PBT) Chemicals; Lowering of Reporting Thresholds for Certain PBT Chemicals; Addition of Certain PBT Chemicals; Amendments to Proposed Addition of a Dioxin and Dioxin-Like Compounds Category; Toxic Chemical Release Reporting; Community Right-to-Know, 64 Fed. Reg. 688 (proposed Jan. 5, 1999) (to be codified at 40 C.F.R. pt. 372), the agency has not proposed either to expand the number of sources that would have to report or to supply the unreported data from its own resources. Absent such an adjustment the reporting of these releases is bound to be at least incomplete and probably misleading.

[66] *See* Addition of Certain Chemicals; Toxic Chemical Release Reporting; Community Right-to-Know, 59 Fed. Reg. 61,432 (Nov. 30, 1994) (to be codified at 40 C.F.R. pt. 372). *See also* Troy Corp. v. Browner, 120 F.3d 277, 280 (D.C. Cir. 1997).

[67] *See* EPA, *Major Findings from the CEIS Review of EPA's TRI Database—Reference Section*, *at* http://www.epa.gov/ceisweb1/ceishome/ceisdocs/tri/referenc.htm (last visited Nov. 30, 2000) (on file with the *Harvard Environmental Law Review*).

[68] According to ED,

> EPA has never systematically reviewed available environmental health data to ascertain how many chemicals actually meet these TRI criteria and should be subject to TRI's reporting requirements. The 650 substances currently covered by TRI represent less than 1% of the over 75,000 chemicals manufactured in the U.S. according to EPA's Toxic Substances Control Act Inventory.

ED, *Which Toxic Chemicals Are Covered By TRI?*, *at* http://www.scorecard.org/general/tri/tri_chem.html (last visited Nov. 30, 2000) (on file with the *Harvard Environmental Law*

to the hazardous substances released in the greatest quantities. Every year, about 150 million tons of pollutants for which EPA has set air quality standards enter the air—about forty times the total amount of all TRI releases.[69] (The most recent TRI report reflecting inventory expansions listed total releases of all TRI pollutants at about 3.7 million tons.)[70] These pollutants are comparable in hazard to many TRI chemicals and present the greatest possible danger of exposure through their air release. Yet they were not on the original congressional TRI list, and EPA has failed to add them though subsequent regulatory action. Because these standards are the center of the Clean Air Act regulatory effort, EPA and states already collect extensive data on them. TRI expansion to include them foundered on the argument, advanced by the regulated industry, that inclusion would duplicate those existing collection efforts.[71]

E. Failure to Characterize the Risks of TRI Chemicals

TRI by itself provides nothing more than a quantitative list of various chemical releases. Even if that list included all releases of all chemicals above some designated hazard level, it would not accurately inform communities of the risks those releases pose. A discharge directly into the air or water is far riskier, other things being equal, than a shipment to

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Review). This may in part be due to a lack of data on such chemicals. *See infra* text accompanying notes 146–148.

[69] *See* EPA, *The National Emission Trends 1900-1998, at* http://www.epa.gov/ttn/chief/trends/trends98/index.html (last visited Nov. 30, 2000) (on file with the *Harvard Environmental Law Review*).

[70] *See* EPA, 1998 TOXIC RELEASE INVENTORY (TRI) DATA SUMMARY 2 (2000). Even if this is only 10% of the total amount of TRI chemicals released, so that the true total is 37 million tons, the air pollution numbers are still far higher.

[71] In 1994, EPA proposed to list four of the "criteria" pollutants for which it has set "national ambient air quality standards" as part of a major expansion of TRI coverage. *See* Addition of Certain Chemicals; Toxic Chemical Release Reporting; Community Right-to-Know, 59 Fed. Reg. 1788, 1801 (carbon monoxide), 1826 (nitrogen dioxide), 1827 (ozone), 1837 (sulfur oxides) (proposed Jan. 12, 1994) (to be codified at 40 C.F.R. pt. 372). EPA asked with respect to each proposal whether "the information collected under the [Clean Air Act was] sufficient for public right-to-know purposes," and how that information could be deployed to serve the purposes of TRI.

When EPA promulgated its final listing it omitted three of the four pollutants subject to air quality standards. (Ozone, the only exception, is rarely emitted by sources directly and therefore did not pose an appreciable reporting burden.) EPA said:

> Many commenters opposed the addition of . . . criteria pollutants . . . to the EPCRA 313 list since extensive data on these chemicals is already collected under the [Clean Air Act].
>
> EPA agrees with the commenters that there are many complex issues associated with the extensive collection of data on these chemicals under the Clean Air Act. Therefore, EPA is deferring the listing of these chemicals . . . to address some of the issues involving the availability of data collected under the [Clean Air Act].

Addition of Certain Chemicals, 59 Fed. Reg. at 61,460.

a landfill for disposal. (Both Form R and EPA's annual reports on TRI releases do specify the medium (air, water, or land) into which the releases occur.) Landfill disposal is riskier than legitimate recycling into a new and benign product. A release of pollutants in an area that exceeds air or water quality standards will often be riskier than a release in an area that does not since the environment and the human body are often able to tolerate small amounts of pollutants without detectable harm. Risk also varies with the type of chemical.[72] Natural forces can quickly neutralize some chemicals on the TRI list, while others will circulate in the environment for years.[73] Finally, confining the reporting requirement to "releases" of waste materials may reflect environmental risk poorly. Some forms of waste disposal are far less environmentally damaging than the sale of a product that becomes an environmental hazard when discarded or is released directly into the environment like fertilizers or pesticides. No such item of characterization may be as clearly necessary as broader coverage to make TRI a source of accurate information on the risks posed by the chemicals it covers. But a truly informative TRI would need to characterize different risks in addition to broadening release coverage.

While expanding TRI might require regulatory action, EPA in many cases could expand or vary its TRI presentation with no regulatory preliminaries at all. Regulatory agencies, like all other entities in our society, benefit from our national faith, embodied in the First Amendment, that only the most minimal legal restraints should apply to discourse on any public issue.[74] Fragmentary case law makes clear that absent special

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[72] "The chemicals on the TRI list . . . vary more than 10,000 fold in their acute and chronic toxicity as well as toxicity to aquatic species." George M. Gray, *Forget Chemical Use, Let's Report Risk!*, RISK IN PERSPECTIVE, Apr. 1997, at 1, 2.

[73] According to Daniel Esty,

> Particulates in the air, organic wastes in water, and most solid wastes disposed of on land can be seen as "flow" pollution that degrades relatively rapidly and for which the environment has some assimilative or absorptive capacity. Pollutants of this type pose a threat only when they are concentrated spatially and temporally. "Stock" pollutants, on the other hand, such as some radioactive materials, heavy metals, certain toxic chemicals, and other bioaccumulative substances, degrade much more slowly. Because the environment has little or no absorptive capacity for these substances, they have an additive or cumulative effect that makes connecting particular proportions of observed harms to specific sources of pollution difficult.

Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 579 (1996).

[74] *See* Dun & Bradstreet, Inc. v. Greenmoss Builders, Inc., 472 U.S. 749, 759 (1984) (holding that speech on matters of public concern is more important under the First Amendment and deserves special protection); First Nat'l Bank of Boston v. Bellotti, 435 U.S. 765, 766 (1978) (speech on matters of public concern is "at the heart of the First Amendment's protections"); Roth v. United States, 354 U.S. 476, 484 (1957) (explaining that the First Amendment's purpose is to ensure the "unfettered interchange of ideas" for developing public policies that best serve the interests of the people).

factors, courts will not oversee agency decisions on how to publish and publicize information that they already possess.[75]

In the absence of characterization, TRI may mislead its users. Simple reporting of the number of pounds of "toxic chemicals" released conveys an implicit message that the total presents a significant risk—otherwise why would it be reported at all? If the government does not balance that initial information with other information on exposure and degree of hazard, the former may lead communities to take regulatory actions that they would not have taken had they been supplied with all the relevant facts. Indeed, a simplistic approach to regulating TRI chemicals might increase risks if a source reduced the quantity of those releases by substituting smaller amounts of more toxic chemicals for larger amounts of less toxic chemicals or reducing chemical use while increasing the risk of accidents.[76] EPA has rejected suggestions for a more refined characteri-

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[75] Agencies have often successfully relied on an "inherent authority" not expressed in any statute to issue information on matters within their overall jurisdiction. *See* Ernest Gellhorn, *Adverse Publicity by Administrative Agencies*, 86 HARV. L. REV. 1380, 1384 (1973) (Despite its issuance of such landmark documents as the Surgeon General's report on cigarette smoking, "[l]ike most administrative agencies, the [Public Health Service] is not specifically authorized to issue adverse publicity; it relies on an implied authority to inform and warn the public about perils to public health."); *id.* at 1432 (although all agency acts must be within statutory authority, "courts have generously construed statutory authority to issue press releases, even if their effect is admittedly punitive. As long as the publicity can be justified as being within the agency's express or implied authority to inform or warn the public, the press release is allowed.").

This judicial willingness to accept a broad agency power of disclosure relates to a judicial reluctance to find that agency information disclosure is a judicially reviewable "final action." *See* Indus. Safety Equip. Ass'n v. EPA, 837 F.2d 1115, 1117–18 (D.C. Cir. 1988) (finding that an EPA recommendation that of the 13 brands of respirators that EPA had approved for protection against airborne asbestos, only 2 should actually be used, was neither a "rule" nor a "sanction" and thus was not subject to judicial review under the Administrative Procedure Act). A more generic analysis not targeted so closely to a particular product would, of course, have been even more clearly unreviewable. A damages action was likewise barred, since under the Federal Tort Claims Act, the government is not accountable in damages for either libel or slander. *See* 28 U.S.C. § 2680(h) (1994). The judicial tendency both to construe disclosure authority broadly and to find disclosure nonreviewable suggests that the questions whether such authority exists, and of the boundaries to its use, present political issues for congressional oversight to resolve more than they present detailed questions of legal construction for litigators and courts.

Against this background, the recommendations for greater disclosure in the TRI context of information about excluded releases and risk effects would be amply justified as a strictly legal matter, simply by their consistency with the purposes of TRI itemized in EPCRA § 313(h), 42 U.S.C. § 11023(h) (1994).

None of this makes the question of statutory authority irrelevant. However, it indicates that the question of statutory authority will be determined more by the experimental process of mandate testing and mandate building discussed in this Article than through judicial proceedings.

[76] According to a science advisor to the Massachusetts analog to TRI, which, like TRI, reports only chemical use and not risk or hazard,

> Firms have an incentive to search for substitute chemicals not on the list . . . .
>
> You can easily imagine the problems with list-driven chemical substitution. Although not on the list, a substitute chemical may be more toxic than the original.

zation of TRI data as unauthorized invasions of the right of local communities to decide the meaning of that data.[77] However, it is hard to see how such an invasion would occur from providing the community with EPA's best judgment of risk, as long as there is no obligation to accept it or to act on it.

EPA's position, moreover, is somewhat inconsistent. The agency has developed a general screening model that can be used to evaluate the risks from TRI releases.[78] Like any other model, it incorporates many assumptions and policy judgments. EPA does not apply that model, however. It simply makes the model available for others to use.[79] Application of the model by EPA would prejudge the issue of which model to use

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> Even if less toxic, the substitute may be more volatile, may be required in greater quantities, or may be more easily absorbed. There may be greater exposure and, therefore, greater risk. Many chemicals on lists of toxics are there precisely because they are well characterized toxicologically. Few chemicals not on these lists are as well studied. This means companies often trade a known, and manageable, hazard for one much less well understood.
>
> Finally, chemical substitution may lead to exchanges of different types of risk . . . . I have seen very small chronic health risks from solvents exchanged for what are likely more substantial fire risks.

Gray, *supra* note 72, at 1–2. *See also* Karkkainen, *supra* note 49 (manuscript at 174–75).

[77] EPA received comments on its recent expansion of reporting requirements for PBT chemicals that urged it to "provide some context about releases . . . of PBT chemicals beyond what is provided by the [quantitative TRI reports]. By this the commenter means: a) information on the quantities of toxic chemicals emitted by non-TRI sources (to the extent that these data are available); and b) information on the human health and ecological risks of the various TRI chemicals (again, to the extent that these data are available)." OFFICE OF POLLUTION PREVENTION AND TOXICS, EPA, RESPONSE TO COMMENTS RECEIVED ON THE JANUARY 5, 1999 PROPOSED RULE (64 FR 688) TO LOWER THE EPCRA SECTION 313 REPORTING THRESHOLDS FOR PERSISTENT, BIOACCUMULATIVE TOXIC (PBT) CHEMICALS AND TO ADD CERTAIN PBT CHEMICALS TO THE EPCRA SECTION 313 LIST OF TOXIC CHEMICALS AND RESPONSE TO COMMENTS RECEIVED ON THE MAY 7, 1997 PROPOSED RULE (62 FR 24887) TO ADD A CATEGORY OF DIOXIN AND DIOXIN-LIKE COMPOUNDS TO THE EPCRA SECTION 313 LIST OF TOXIC CHEMICALS 547 (1999). EPA replied that it

> disagrees with the commenter's suggestion that [TRI administration] should include exposure or risk considerations. EPA believes that a risk-based approach to [TRI] is at odds with the basic premise of [TRI], which is to get information about the use, disposition, and management of toxic chemicals into the public domain, enabling the users of this information to evaluate the information and draw their own conclusions about risk. The intent of [TRI] is to move the determination of which risks are acceptable from EPA to the communities in which the releases occur.

Id. at 548.

[78] *See* EPA, *Environmental Indicators Home Page*, *at* http://www.epa.gov/opptintr/env_ind/index.html (last visited Nov. 30, 2000) (on file with the *Harvard Environmental Law Review*).

[79] In fact, ED uses the model to evaluate the risks posed by individual TRI sources and posts the results on its "Scorecard" Web site. *See* ED, *Pollution Rankings*, *at* http://www.scorecard.org/ranking (last visited Nov. 30, 2000) (on file with the *Harvard Environmental Law Review*).