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# EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW: THE TOXICS RELEASE INVENTORY

David J. Abell

## I. INTRODUCTION: A STATUTORY OVERVIEW

CONGRESS added the Emergency Planning and Community Right-To-Know Act of 1986 (EPCRA)<sup>1</sup> to the Superfund Amendments and Reauthorization Act of 1986 (SARA)<sup>2</sup> in response to the 1984 Union Carbide disaster in Bhopal, India.<sup>3</sup> EPCRA now exists as the largest regulatory scheme ever created by Congress.<sup>4</sup> Through its passage of EPCRA, Congress began the process of creating an emergency planning network designed to respond to toxic chemical accidents. Congress envisioned two objectives for EPCRA: first, to provide public access to information relating to toxic chemicals used, produced, and released in communities (the "right-to-know" portion) and second, to utilize information provided by local facilities to design particularized community emergency response plans for accidental toxic chemical releases.<sup>5</sup>

EPCRA has four mechanisms for accomplishing its goals: emergency planning notification, emergency release notification, community right-to-know reporting, and toxic chemical release reporting. Despite the threat of enormous penalties for non-compliance (\$25,000 per day), strict liability,

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1. Pub. L. No. 99-499, §§ 301-330, 100 Stat. 1728 (codified at 42 U.S.C. §§ 11,001-11,050 (1988)).

2. Pub. L. No. 99-499, §§ 101-213, 100 Stat. 1613 (codified at 42 U.S.C. §§ 11,001-11,005, 11,021-11,023, 11,041-11,050 (1988)).

3. Jayne S.A. Pritchard, Comment, *A Closer Look at Title III of SARA: Emergency Planning and Community Right-To-Know Act of 1986*, 6 PACE ENVTL. L. REV. 203, 203 (1988). Another release of toxic chemicals by Union Carbide in West Virginia may have also influenced Congress. In that release, plant administrators were delinquent in notifying emergency response organizations. The confusion and uncertainty relating to toxic chemicals used, released, and stored in local facilities prompted the need for a device to disseminate otherwise difficult to obtain chemical information. See *Carbide Accident May Speed Controls, Right-To-Know Emergency Response Rules*, 1 Toxics L. Rep. (BNA) No. 16, at 635 (Aug. 16, 1985); see also *Bhopal Update: India, U.S. Still Grapple with Effects*, CHEMICAL & ENGINEERING NEWS, Jan. 21, 1985, at 4.

4. *Enforcement: EPCRA Business Potential Substantial for Defense Attorneys*, EPA Official Says, 16 Chem. Reg. Rep. (BNA) No. 25, at 1122 (Sept. 18, 1992) (quoting statements of Michael Walker, EPA associate enforcement counsel for the Office of Pesticides and Toxics, who noted the enormous scope of EPCRA).

5. Steven J. Christiansen & Stephen H. Urquhart, *The Emergency Planning and Community Right to Know Act of 1986: Analysis and Update*, 6 B.Y.U. J. PUB. L. 235, 236 (1992).

and EPCRA's broad scope, many manufacturing companies remain completely unaware of the existence and applicability of EPCRA.

#### A. TOXIC CHEMICAL RELEASE REPORTING

The community right-to-know provision of EPCRA (section 313) requires owners and operators of certain manufacturing facilities to file an annual report identifying the type, location, and amount of "toxic" chemicals stored and released during the year.<sup>6</sup> A facility must report all hazardous releases if it manufactures, processes, or otherwise uses any of the listed toxic chemicals in threshold amounts.<sup>7</sup> Facilities report the fate of each toxic chemical (i.e., evaporation, incineration, release into public sewer or surface waters, deep injection well, etc.) after use and disposal, through submission of a toxic chemical release form (Form R).<sup>8</sup> The information reported on Form R is incorporated into a national database called the Toxics Release Inventory (TRI). This information, along with the individual reports from each facility, is available to the public.<sup>9</sup> The reporting requirement of section 313 is the most controversial and sometimes confusing part of the EPCRA program. Discussion of the reporting requirements and problems associated with section 313 constitutes the bulk of this Comment.

The newest addition to EPCRA's TRI reporting form (Form R) is the requirement that each facility specifically describe its efforts and accomplishments in reducing the need for toxic chemicals. This requirement, known as the source reduction and recycling report, was created as part of the 1990 Pollution Prevention Act (PPA).<sup>10</sup> The source reduction and recycling report details the actual amount of source reduction achieved for each of the TRI chemicals reported by each facility. Pollution prevention is seen as a new method of pollution control. Pollution prevention represents the EPA's desire to change the focus of environmental protection. Instead of the traditional end-of-pipe, waste treatment, and command-and-control regulatory policy, pollution prevention relies on cooperative efforts between government and industry to change the activities of companies before recycling, treatment, and disposal. The idea is to prevent ultimate disposal of wastes by redesigning production processes, substituting inputs, and enhancing efficiency.<sup>11</sup>

This Comment discusses section 313 (use and release reporting) of EPCRA, which has evolved into the most controversial aspect of EPCRA.

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6. EPCRA § 313, 42 U.S.C. § 11,023 (1988).

7. EPCRA § 313(f)(1), 42 U.S.C. § 11,023(f)(1). A list of section 313 toxic chemicals appears at 40 C.F.R. § 372.65 (1992).

8. EPCRA § 313(a), 42 U.S.C. § 11,023(a).

9. EPCRA § 313(h), 42 U.S.C. § 11,023(h).

10. Pub. L. No. 101-508, §§ 6601-6610, 104 Stat. 1388, 1388-321 to 1388-327 (codified at 42 U.S.C. §§ 13,101-13,109 (Supp. III 1991)). The report also requires a detailed description of the pollution prevention methods used by each facility.

11. The PPA definition of "source reduction" is centered on changing industrial activity prior to recycling, treatment, and disposal, all of which are less desirable options to actual waste prevention. PPA § 6602(b), 42 U.S.C. § 13,101(b) (Supp. III 1991) (policy statement included as part of the Pollution Prevention Act of 1990).

This Comment focuses on various section 313 issues including the Toxic Chemical Release Inventory, enforcement, and the additional reporting requirements imposed by the Pollution Prevention Act of 1990. Throughout, this Comment presents an analysis of the problems encountered during the first five years of regulation under EPCRA and suggests possible avenues for improvement and remedy.

## II. A STATUTORY OVERVIEW OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

### A. EMERGENCY PLANNING

Fearful of an inadequate ability to respond to serious toxic emergencies, Congress created EPCRA to provide a blueprint for state and local emergency planning. EPCRA calls for the creation of local emergency planning bodies and the development of local emergency plans.<sup>12</sup> EPCRA requires that each state establish a State Emergency Response Commission (SERC).<sup>13</sup> The governor of the state must appoint the commission.<sup>14</sup> Each state commission (SERC), in turn, has the responsibility for planning at the state level through the appointment and coordination of local emergency planning committees (LEPCs).<sup>15</sup> EPCRA requires that certain representatives from the community participate in each LEPC.<sup>16</sup> For example, the statute requires that representatives from the following groups be included: state and local elected officials; civil defense, firefighting, law enforcement, first aid, health, environmental, hospital and transportation personnel; broadcast and print media; and owners and operators of facilities subject to the requirements of EPCRA.<sup>17</sup>

All facilities falling under EPCRA must file a hazardous chemical inventory form.<sup>18</sup> The information provided may be general in nature, revealing only aggregate information by chemical category (Tier I information) including the annual and daily maximums of hazardous substances present on-site in the preceding year.<sup>19</sup> The SERC, LEPC, or the local fire department

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12. EPCRA § 301, 42 U.S.C. § 11,001.

13. EPCRA § 301(a), 42 U.S.C. § 11,001(a). Each state commission is responsible for the emergency planning at the district level through appointment and coordination of Local Emergency Planning Committees (LEPCs). EPCRA § 301(c), 42 U.S.C. § 11,001(c). The LEPCs are charged with the preparation of a local emergency response plan as required by EPCRA § 303(a), 42 U.S.C. § 11,003. The address of the Texas SERC is Division of Energy Management, 5805 Lamar, Austin, Texas 76752; telephone (512) 465-2138.

14. EPCRA § 301(a), 42 U.S.C. § 11,001(a).

15. EPCRA § 301(c), 42 U.S.C. § 11,001(c).

16. *Id.*

17. *Id.*

18. EPCRA § 312, 42 U.S.C. § 11,022. Facilities that are subject to the requirements of EPCRA must notify their respective LEPCs that they fall under EPCRA. EPCRA § 303(d), 42 U.S.C. § 11,003(d). EPCRA requires disclosure of information relating to toxics present on-site. Section 311 requires the submission of a Material Safety Data Sheet for each chemical or a list of hazardous chemicals to the Local Emergency Planning Committee, the State Emergency Response Commission, and the local fire department. EPCRA § 311(a)(1), 42 U.S.C. § 11,021(a)(1). All of this information is available to the public. EPCRA § 324, 42 U.S.C. § 11,044.

19. EPCRA § 312(d)(1), 42 U.S.C. § 11,022(d)(1).

can request more specific information (Tier II), which requires identification of each toxic chemical by name, quantity, method of storage, and specific location.<sup>20</sup> Those facilities failing to comply with EPCRA requirements can be assessed penalties reaching \$25,000 per day, which are enforceable in federal court.<sup>21</sup>

With the collected information, the LEPC must prepare a local "comprehensive emergency response plan."<sup>22</sup> The local comprehensive emergency plan is essential to a community's effective response to a serious toxic release. Theoretically, chemical information provided by a community's manufacturing facilities allows for assessment of hazards and coordination of police, fire, government, and health officials in anticipation of future toxic emergencies. In addition to emergency preparedness, the LEPCs must also release to the community the chemical information collected from local facilities.<sup>23</sup>

### B. EMERGENCY RELEASE NOTIFICATION

EPCRA section 304 establishes mechanisms for private industry to notify the community of emergency releases of toxic chemicals.<sup>24</sup> A facility must immediately notify both local and state entities if it releases a reportable quantity of any chemical listed as a "hazardous" or "extremely hazardous" substance under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).<sup>25</sup> The release report may be made by telephone, radio, or in person and must include the following information: the chemical name or identity, an estimate of the quantity, the time and duration of the release, the medium or media into which the release occurred, the possible health effects, suggested medical treatment for those exposed, proposed precautions, and the name and number of a contact person at the facility.<sup>26</sup> A written follow-up emergency notice must be sent to update the facility's original release report.<sup>27</sup>

One difficulty faced by EPCRA facilities is that the lists classifying "hazardous" and "extremely hazardous" substances are in a continuing state of flux, making it difficult to determine whether reporting is necessary. In an effort to ease the reporting uncertainty, the EPA has provided an "800" information telephone number enabling a facility to determine its reporting obligations instantly and unambiguously.<sup>28</sup> A clearly defined reporting duty is important to EPCRA facilities as the EPA has the authority to assess

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20. EPCRA § 312(d)(2), 42 U.S.C. § 11,022(d)(2).

21. EPCRA § 325(b)(1)-(2), 42 U.S.C. § 11,045(b)(1)-(2).

22. EPCRA § 303, 42 U.S.C. § 11,003.

23. EPCRA § 301(c), 42 U.S.C. § 11,001(c).

24. EPCRA § 304, 42 U.S.C. § 11,004.

25. EPCRA § 304(a), 42 U.S.C. § 11,004(a). A list of "extremely hazardous substances" for EPCRA reporting purposes can be found at 40 C.F.R. § 355 app. A (1992). A list of CERCLA "hazardous substances" can be found at 40 C.F.R. § 302.4 (1992). The threshold levels are specified for each chemical and are included as part of the lists.

26. EPCRA § 304(b)(2), 42 U.S.C. § 11,004(b)(2).

27. EPCRA § 304(c), 42 U.S.C. § 11,004(c).

28. The EPCRA hotline number is (800) 535-0202.

penalties of up to \$25,000 per day and may seek criminal penalties for failure to comply with emergency release notification requirements.<sup>29</sup> Those repeatedly violating the statute can be liable for penalties of up to \$75,000 per day.<sup>30</sup>

### C. COMMUNITY RIGHT-TO-KNOW REPORTING

Facilities must submit a Material Safety Data Sheet (MSDS) for every chemical on site that is regulated under OSHA's hazardous communication standard.<sup>31</sup> Copies of the MSDSs are to be sent to the SERC, LEPC, and the local fire department.<sup>32</sup> A facility may choose instead to submit a list of all the chemicals and their hazard information.<sup>33</sup> Facilities that fall under the community right-to-know reporting requirements must also submit a "Tier I" inventory form.<sup>34</sup> Tier I information includes average and maximum daily amounts and the general location of listed hazardous substances that were on-site over the past year.<sup>35</sup> Tier I forms (available at 40 C.F.R. § 370) group chemicals in five hazard categories: fire, pressure, reactivity, acute health hazards, and chronic health hazards.

If a Local Emergency Planning Committee desires more information, that LEPC may request a "Tier II" form from the facility.<sup>36</sup> The Tier II form provides a more detailed picture of the chemicals inside the facility. Tier II information includes the specific chemical name, the maximum amount stored at the facility, the average daily amount, a description of the type of storage, the location of each chemical, and whether the owner opts to withhold the exact location from public disclosure.<sup>37</sup> The EPA has the power to assess penalties of up to \$25,000 per violation per day for the failure to submit Tier I information.<sup>38</sup> The EPA may act through administrative order or in federal court.<sup>39</sup> Citizens, the SERC, and the LEPC may independently institute civil actions to compel compliance.

### III. COMMUNITY RIGHT-TO-KNOW: PUBLIC INFORMATION MANDATE AND THE TOXICS RELEASE INVENTORY

Public information laws have been part of the legislative arsenal since the first of the federal securities laws and the state Blue Sky provisions.<sup>40</sup> Con-

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29. EPCRA § 325(b), 42 U.S.C. § 11,045(b).

30. EPCRA § 325(b)(2), 42 U.S.C. § 11,045(b)(2).

31. EPCRA § 311(a)(1), 42 U.S.C. § 11,021(a)(1).

32. *Id.*

33. EPCRA § 311(a)(1)-(2), 42 U.S.C. § 11,021(a)(1)-(2).

34. EPCRA § 312(a)(1), 42 U.S.C. § 11,022(a)(1).

35. EPCRA § 312(d)(1), 42 U.S.C. § 11,022(d)(1).

36. EPCRA § 312(d)(2), 42 U.S.C. § 11,022(d)(2).

37. *Id.*

38. EPCRA § 325(c)(1), 42 U.S.C. § 11,045(c)(1).

39. EPCRA § 325, 42 U.S.C. § 11,045.

40. Robert F. Blomquist, *The Logic and Limits of Public Information Mandates Under Federal Hazardous Waste Law: A Policy Analysis*, 14 VT. L. REV. 559, 570 (1990) (citing The Freedom of Information Act, 5 U.S.C. § 552 (1988), as the most noteworthy of this type of legislative tool).

gress established three significant environmental public information programs in 1986: Title III of SARA (EPCRA), Section 110 of SARA (requiring the preparation of hazard profiles by the Agency for Toxic Substances and Disease Registry), and Section 117(e) of SARA (creating a technical assistance public grant program).<sup>41</sup> Several policy goals are at the heart of such public information programs. The purpose of EPCRA's Toxics Release Inventory is to "inform the general public and the communities surrounding covered facilities about releases of toxic chemicals, to assist research, to aid in the development of regulations, guidelines, and standards, and for other purposes."<sup>42</sup> EPCRA reporting will provide a foundation of data available to calculate exposure levels, evaluate and develop existing and new regulatory approaches, illuminate particular environmental problems, and promote the development of pollution prevention strategies.<sup>43</sup> EPCRA provides previously unattainable information necessary to develop effective emergency response plans. The information also allows citizens to become involved in promoting the environmental integrity of their community. Although laudable, EPCRA is not without its problems.

#### A. TOXIC RELEASE REPORTING

The most publicized and controversial portion of the EPCRA program is the mandatory reporting of annual releases of toxic chemicals.<sup>44</sup> Section 313(j) of EPCRA<sup>45</sup> requires the EPA to establish and maintain in a computer database a national toxic chemical inventory based on information supplied by EPCRA facilities. Facilities falling under EPCRA must file a Toxic Chemical Release Inventory Reporting Form (Form R) for each listed chemical manufactured, processed, or otherwise used in excess of threshold levels.<sup>46</sup> The scope of EPCRA section 313 is extremely broad. Any facility that has ten or more full-time employees<sup>47</sup> and falls in a Standard Industrial Classification (SIC) Code 20 through 39 (essentially all companies that are engaged in general manufacturing)<sup>48</sup> is potentially responsible for reporting. The reporting provisions of EPCRA are triggered if a facility *manufactures or processes* 25,000 pounds or *otherwise uses* 10,000 pounds or more of any of the 302 individual chemicals or twenty chemical categories listed as

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41. *Id.* at 571.

42. 40 C.F.R. § 372.1 (1992).

43. Blomquist, *supra* note 40, at 577 (quoting Berkowitz, *The Law and The Promise*, 5 ENVTL. F. 24, 28 (Oct. 1988)).

44. Kevin J. Finto, *Regulation by Information Through EPCRA*, NAT. RESOURCES & ENV'T, Winter 1990, at 13, 46.

45. EPCRA § 313(j), 42 U.S.C. § 11,023(j).

46. EPCRA § 313(a), 42 U.S.C. § 11,023(a).

47. This means ten or more full-time employees or the equivalent. This clarification is noted in response to confusion over the calculation of full-time. "Or equivalent" appears in the EPA OFFICE OF PESTICIDES & TOXIC SUBSTANCES, TOXICS IN THE COMMUNITY: NATIONAL AND LOCAL PERSPECTIVES, THE 1989 TOXICS RELEASE INVENTORY NATIONAL REPORT, EPA/560/4-91-014, at 15 (Sept. 1991) [hereinafter 1989 TRI NATIONAL REPORT].

48. EPCRA § 313(b)(1)(A), 42 U.S.C. § 11,023(b)(1)(A). The Standard Industrial Classification scheme is used by the U.S. Department of Commerce to define different segments of industry.

TRI toxics.<sup>49</sup>

### 1. Scope of TRI Reporting Requirements

While EPCRA's scope is not universal, most manufacturing facilities are required to report. Although previously exempt, federal agencies will be required to comply with EPCRA and file Form R reports for the 1994 year as a result of an executive order signed on August 3rd by President Clinton.<sup>50</sup> The enforcement and penalty provisions of EPCRA, however, will not apply to federal facilities.<sup>51</sup> All other facilities that do not fall within SICs 20-39 are exempt. Those exempted from EPCRA include major sources of pollution such as dry cleaners, public utilities, solid and hazardous waste landfills, incinerators, gas stations, agriculture, and vehicles.<sup>52</sup> Facilities that do fall within SICs 20-39 are only required to report EPCRA information if they have ten or more full-time employees. Facilities with fewer than ten employees are exempt irrespective of the amount or character of toxic releases that might occur. By 1991, reported annual releases of toxic chemicals had fallen to 3.38 billion pounds.<sup>53</sup>

Facilities otherwise subject to EPCRA reporting may escape filing a Form R if the use, processing, or manufacture of TRI listed chemicals falls below threshold levels (i.e., less than 25,000 pounds processed or manufactured or less than 10,000 pounds otherwise used). Other exemptions include releases in laboratory operations,<sup>54</sup> de minimis concentrations in mixtures,<sup>55</sup> use exemptions<sup>56</sup> such as janitorial and vehicular maintenance,<sup>57</sup> "article" exemptions,<sup>58</sup> and trade secrets (these toxic releases are reported in quantities but generically identified as "trade secret").<sup>59</sup>

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49. EPCRA § 313(f)(1), 42 U.S.C. § 11,023(f)(1).

50. Exec. Order No. 12,856, 58 Fed. Reg. 41,981 (Aug. 6, 1993); *President Directs Federal Agencies to Take Lead in Pollution*, 24 Env't Rep. (BNA) No. 15, at 623 (Aug. 13, 1993). "The Federal government should absolutely make every effort and should be required to meet the environmental standards that . . . are important to the protection of human health." *Id.* (quoting Carol Browner, EPA Administrator).

51. *Future Contracts Could Require Contractors to Submit TRI Data to Agencies*, Official Says, 24 Env't Rep. (BNA) No. 16, at 739 (Aug. 20, 1993) (reporting the comments of James Edwards, Director of Strategic Planning and Prevention in the EPA's Office of Federal Facilities Enforcement).

52. *Emergency Planning: Group Questions Manufacturers' Report of 11 Percent Reduction in Toxic Releases*, 23 Env't Rep. (BNA) No. 18, at 1318 (Sept. 4, 1992) (citing a study conducted by Citizen Action on the 1990 TRI data) [hereinafter *Emergency Planning*].

53. *Industrial Releases of Toxic Chemicals Continue to Decline*, EPA Administrator Says, 24 Env't Rep. (BNA) No. 4, at 180 (May 28, 1993) (Carol Browner announcing preliminary results of the 1991 TRI reporting) [hereinafter *Industrial Releases*].

54. 40 C.F.R. § 372.38(d) (1992).

55. *Id.* § 372.38(a).

56. *Id.* § 372.38(c)(1)-(5).

57. *Id.*

58. *Id.* §§ 372.3, 372.38(b).

59. EPCRA § 322, 42 U.S.C. § 11,042 (1988). Trade secret allows a facility to file under a generic chemical name. The availability of trade secret exemptions is significantly limited. The facility carries the burden of proving trade secret, which is a difficult hurdle to overcome. Thomas A. Curtis & Michael C. Whittington, *Reporting Requirements: Under the Federal Emergency Planning and Community Right-To-Know Act and Texas Toxic Chemical Reporting Act*, TEX. B.J., June 1990, at 568, 572.



## B. SUCCESSES AND LIMITATIONS OF THE TOXICS RELEASE INVENTORY

The Toxics Release Inventory is an innovative environmental regulatory tool. It provides industry, the government, and the public a first glimpse of the nation's pollution problem in the aggregate.<sup>60</sup> The ability of the TRI to function as the citizens' tool to motivate industry to reduce emissions and to measure real reductions in toxic emissions is hindered by several inherent handicaps. The quality of the data received by the EPA, the limited scope of EPCRA, the lack of health and environmental risk information, and inadequate Agency enforcement all cripple the TRI.

### 1. *Information Collected Since 1987 Indicates Significant Toxic Releases and Progress in Pollution Reduction*

The TRI provides an important source of environmental information. Therefore, before analyzing the problems associated with the TRI, it is necessary to digest what information has been provided by past reports. The results of the past four years of industrial reporting have finally provided us with an idea of the enormity of this nation's pollution problem. The total release of toxics since the first full TRI report in 1987 is staggering. In 1989, 22,569 facilities reported releases totalling 5.7 billion pounds of listed toxic chemicals. This number actually represents a nineteen percent reduction (1.27 billion pounds) in releases since 1987<sup>61</sup> (despite a seven percent increase in the number of facilities reporting since 1988).<sup>62</sup>

Nearly sixty percent of the 1.27 billion pound reduction in toxic chemicals releases was attributable to only 127 facilities.<sup>63</sup> This statistic indicates that a small group of large facilities accounts for the bulk of all toxic releases. For example, the top two releasers (Monsanto Co. in Alvin, Texas and American Cyanamid Co. in Westwego, Louisiana) accounted for almost seven percent of the national total.<sup>64</sup> Forty-two percent (2.4 billion pounds) of the nation's toxic releases was emitted into the air;<sup>65</sup> twenty-one percent (1.2 billion pounds) was released into underground injection wells;<sup>66</sup> and sixteen percent (0.91 billion pounds) was transferred off-site. Ten percent of the nation's toxic releases was released into public sewage systems, eight percent directly onto land, and three percent into surface waters.<sup>67</sup> Twenty-five of the 322 chemicals accounted for eighty-three percent of all releases and transfers in 1989.<sup>68</sup>

As for state specific releases, Texas recorded the largest amount of TRI

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60. The TRI represents an innovation when considering the traditionally fragmented and decentralized nature of the typical regulatory scheme. The public, as well as regulatory agencies and industry, has instant access to the TRI data through an on-line computer database. It is easily accessible through the Lexis/Nexis services.

61. 1989 TRI NATIONAL REPORT, *supra* note 47, at 1.

62. *Id.*

63. *Id.* at 2.

64. *Id.* at 63.

65. *Id.* at 2.

66. *Id.*

67. *Id.*

68. *Id.* at 3.

releases and transfers by releasing 792.8 million pounds of listed toxic chemicals (fourteen percent of the national total).<sup>69</sup> Texas was number one in the release and transfer of carcinogens, accounting for over ten percent of the national total of 411 million pounds.<sup>70</sup> By 1991, however, Texas managed to reduce total releases and transfers to 411 million pounds (a reduction of 382 million pounds).<sup>71</sup> Texas has fallen to the second top TRI state behind Louisiana (459 million pounds).

The TRI has also identified the specific industries that generate significant releases of toxic material. The chemical industry accounted for nearly forty-eight percent (2.8 billion pounds) of the total TRI releases and transfers in 1989.<sup>72</sup> The primary metal industry, accounting for thirteen percent (0.76 billion pounds), and the paper manufacturing industry, accounting for five and one-half percent (0.31 billion pounds), are also significant generators.<sup>73</sup>

In the face of public reporting, manufacturers have been forced to confront the significance (economic and environmental) of their toxic releases. This is the underlying philosophy of EPCRA. For example, after filing its first Form R report in 1987, the Monsanto facility in Pensacola, Florida managed to reduce its TRI emissions by a staggering seventy-four percent by 1991.<sup>74</sup> Monsanto realized these reductions despite increases in production.<sup>75</sup> Some examples of Monsanto's efforts include an eighteen million pound reduction in disposal of ammonium nitrate (a nylon production by-product) achieved by reducing the quantity used to neutralize nitric acid, upgraded ammonia storage tank to reduce air releases, substitution of chlorinated solvents in its degreasing processes, and process changes reducing cyclohexane and maleic anhydride emissions.<sup>76</sup>

The efforts of the Monsanto Corporation to reduce toxic emissions represent the classic response intended by the drafters of EPCRA. First, quantifying releases helps companies identify processes that can be made more environmentally efficient. Second, toxic waste reductions often result in lower production costs.<sup>77</sup> Finally, reporting toxic releases to the public encourages firms to become more efficient in the face of public scrutiny.

## 2. *The Toxics Release Inventory Is Used as a Tool to Develop, Strengthen and Enforce Environmental Policy and Legislation*

Federal and state officials, the press, and the public use TRI data to promote legislation and environmental strategies.<sup>78</sup> The TRI has also affected

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69. *Id.*

70. *Id.* at 94-95.

71. *Industrial Releases*, *supra* note 53, at 180.

72. 1989 TRI NATIONAL REPORT, *supra* note 47, at 5.

73. *Id.*

74. *Chemical Industry Foresees Problems in New Data Requirement of Toxics Inventory*, 23 *Env't Rep.* (BNA) No. 52, at 3207 (Apr. 23, 1993).

75. *Id.*

76. *Id.*; *Monsanto Reports 92 Percent Reduction in Toxic Emissions Since 1987 TRI Reports*, 24 *Env't Rep.* (BNA) No. 12, at 505 (July 23, 1993).

77. See *infra* notes 211-22 and accompanying text.

78. 1989 TRI NATIONAL REPORT, *supra* note 47, at 307. The TRI National Report

public policy as it is used to establish environmental priorities and develop various pollution prevention initiatives.<sup>79</sup> Proponents of the 1990 Clean Air Act Amendments used the trends exposed by the TRI as proof of the need to expand the regulation of air emissions.<sup>80</sup> The EPA has utilized the TRI to identify specific chemicals that require extra enforcement. For example, the EPA targeted benzene violations for enforcement based on the chemical's number five ranking on the list of top carcinogens released into the environment.<sup>81</sup> The EPA also uses the TRI to target specific industries that release significant amounts of toxics or violate reporting requirements under other environmental laws.<sup>82</sup> Late in 1992, the EPA announced the filing of twenty-two enforcement actions against pulp and paper manufacturers, metal and organic chemical manufacturers, and smelters.<sup>83</sup> The EPA based these actions on TRI data showing significant toxic releases by those industries.<sup>84</sup> The TRI is liberally employed in permitting, targeting inspection and enforcement, compliance reviews, risk screening, and pollution prevention.<sup>85</sup> The EPA, in developing strategies under the Pollution Prevention Act, utilized the TRI data to identify the most promising chemicals and industries for future pollution reductions.<sup>86</sup> TRI data is also used to cross-check information provided by individual facilities under other environmental statutes such as the Clean Air Act.<sup>87</sup>

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points to the use of TRI data by the press and citizens groups to focus attention on problems in specific localities. It is especially effective in mobilizing public response. *Id.*

79. *Id.* at 317. The PPA uses the TRI data to help identify promising areas for future reductions. *Id.*

80. Mary B. Arnett, *Risky Business: OSHA's Hazard Communication Standard, EPA's Toxic Release Inventory, and Environmental Safety*, 22 *Env'tl. L. Rep.* (Env'tl. L. Inst.) 10,440, 10,512 (1992). The TRI was used to help develop Source Categories under the Clean Air Act Amendments. 1989 TRI NATIONAL REPORT, *supra* note 47, at 318.

81. *Benzene Violations Targeted in Environmental Enforcement Actions*, ENVTL. NEWS (News Release), 1992 WL 206,196 (EPA) (Aug. 5, 1992).

82. *Enforcement Actions Filed in 16 States Against Pollution Law Violators*, ENVTL. NEWS (News Release), 1992 WL 237,122 (EPA) (Sept. 10, 1992) (asserting that the basis of EPCRA enforcement actions is a "historical pattern of non-compliance with environmental laws" and that TRI data shows the particular industry was responsible for significant toxic emissions); 1989 TRI NATIONAL REPORT, *supra* note 47, at 307. The TRI helps the EPA to focus on those industries in the best position to reduce toxic waste generation. The TRI National Report cites state use of TRI data in the creation of state pollution prevention legislation. Texas is among those states with a prevention law. Texas has adopted a policy of pollution prevention. TEX. HEALTH & SAFETY CODE ANN. § 361.502 (Vernon 1992); David J. Hanson, *Toxic Release Inventory Becomes Springboard to New Laws*, CHEMICAL & ENGINEERING NEWS, Nov. 4, 1991, at 24.

83. *Enforcement Actions Filed in 16 States Against Pollution Law Violators*, ENVTL. NEWS (News Release), 1992 WL 237,122 (EPA) (Sept. 10, 1992). The EPA filed actions under the Clean Water Act, Resource Recovery and Conservation Act, Clean Air Act, Toxic Substances Control Act, and the Emergency Planning and Community Right-To-Know Act. *Id.*

84. *Id.*

85. 1989 TRI NATIONAL REPORT, *supra* note 47, at 317.

86. *Id.*

87. EPA has used TRI to cross-check reported data. *Id.* at 319. Approximately 170 of the Clean Air Act chemicals are listed under EPCRA. *Air Pollution: Review of Right-To-Know Compliance Will Help on Air Toxics, Consultant Says*, 23 *Env't Rep.* (BNA) No. 45, at 2870 (Mar. 5, 1993). The EPA has attempted to make the two lists as closely related as possible. *Id.* (statements of David Patrick, vice president of ICF International Corp.). "If you

### 3. *Despite the Value of the Toxics Release Inventory, Inherent Disabilities Limit Its Usefulness*

#### a. *The Toxic Release Inventory Is Crippled at Its Source: Data on the Form R Are Not Based on Uniform Standards*

Although the TRI provides a significantly clearer understanding of the pollution problem, its utility is limited. EPA officials recognize that the absence of clear instructions on how to fill out the Form R has resulted in inaccuracy.<sup>88</sup> The director of the EPA's office of Pollution Prevention and Toxics noted that confusion surrounding the reporting process may prevent the TRI from providing an accurate picture of actual TRI emissions.<sup>89</sup>

The most serious problem arises from data provided on the Form R reports. The EPA does not require companies to verify the data that they submit.<sup>90</sup> EPCRA does require the use of all readily available monitoring data and emissions measurements obtained under the authority of any other law.<sup>91</sup> Therefore, EPCRA reporting is made easy if the facility is a "point source" under the Clean Air or Water Act because accurate monitoring is already required, and the documentation of releases is readily available. Most facilities are not point sources, however, and do not have the luxury of sophisticated monitoring equipment. To simplify matters, EPCRA allows a reporting facility to provide its own release estimates.<sup>92</sup> The pertinent portion of the statute states that a "facility may use . . . reasonable estimates of the amounts involved."<sup>93</sup> In fact, nothing in EPCRA "requires the monitoring or measurement of the quantities, concentration, or frequency of any toxic . . . beyond that . . . required under other provisions of law or regulation."<sup>94</sup>

Surveys conducted by Citizen Action indicate that sixty-nine percent of all TRI data are based on the "least verifiable and least accurate" of all estimation techniques.<sup>95</sup> Despite the inaccuracy, toxic release estimation is probably the most significant reporting barrier faced by industry. According to Dr. Priscilla Seymour, a former emergency response coordinator for the Texas Water Commission, the most difficult hurdle to clear is estimating

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handle EPCRA compliance for your company, you need to understand the Clean Air Act and vice versa." *Id.* Mr. Patrick cautioned that data from Form R reports could be cross-checked with Clean Air Act reports. *Id.*

88. *Lack of Pollution Prevention Instructions Said to Create Confusion in TRI Reporting*, 23 *Env't Rep.* (BNA) No. 48, at 3059 (Mar. 26, 1993).

89. *Id.* (citing comments of Mark Greenwood); see *Chemical Industry Foresees Problems in New Data Requirement of Toxics Inventory*, 23 *Env't Rep.* (BNA) No. 52, at 3207 (Apr. 23, 1993). "Our members definitely had difficulty [filling out the forms] without EPA guidance and definitions." *Id.* (quoting Joe Mayhew, Assistant Vice President of the CMA's Environmental and Policy Analysis Regulatory Affairs Branch).

90. 1989 TRI NATIONAL REPORT, *supra* note 47, at 19.

91. EPCRA § 313(g)(2), 42 U.S.C. § 11,023(g)(2).

92. *Id.*

93. *Id.*

94. *Id.*

95. *Emergency Planning*, *supra* note 52, at 1318 (based on a study conducted by Citizen Action). Only 31% of the estimates used actual monitoring and mass balance calculations, which are the most accurate methods of estimation. *Id.*

(with any reasonable degree of accuracy) the quantity of a toxic chemical being released from all the potential sources at a facility.<sup>96</sup>

Even though EPCRA allows each facility to make "reasonable estimates" of emissions, those estimations may be very difficult to calculate when the facility uses complex processes with multiple inputs and outputs.<sup>97</sup> As an example, an estimation might require determining for each TRI chemical the quantity that has evaporated, spilled, burned, been poured down the drain, disposed of, or incorporated into the final product. The task is greater if a process involves complex mixtures and reactions. The lack of uniform standards by which industry can calculate its releases results in inaccurate and variable data on Form Rs.<sup>98</sup> As with any reporting scheme, increasing data quality would impose significantly increased costs for both industry and the EPA. Intensifying the financial burden on businesses (already complaining about the cost of reporting) may not be a political battle the EPA will be willing to fight. The key is to identify the optimal level of quality that provides the maximum benefit for each dollar expended.

Compounding the accuracy problem is the lack of focus on ensuring the quality of the data provided on the Form R. Further complications result from the lack of enforcement activity to ensure the quality of the reported release quantities. Historically, the EPA has directed most of its enforcement resources to non-reporters. Non-reporters contribute significantly to quality problems, as over thirty percent of all EPCRA facilities have failed to file a Form R report.<sup>99</sup> In light of the Agency's past focus on punishing non-reporters, however, many are calling for the EPA to place a greater emphasis on data quality through accuracy verification.<sup>100</sup>

#### b. Scope-Facilities: Many Facilities to Escape Reporting Requirements

A second TRI disability lies in its limited scope. Despite reporting 5.7 billion pounds of waste releases, estimates show that this number represents

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96. Curtis & Whittington, *supra* note 59, at 570 (citing a telephone interview with Dr. Priscilla Seymour, Texas Water Commission (Sept. 29, 1989)).

97. *Id.* at 570.

98. *Id.* Small companies may tend to overestimate their emissions. *Id.* (citing Engelgau, *Something in the Air*, RESOURCES, Feb. 1990, at 3). "The Synthetic Organic Chemical Manufacturing Industry (SOCMI) has been found to cause most facilities to overstate fugitive emissions by a factor of between 5 and 10." *Id.* at 573 n.22. The SOCMI publishes methods of calculating releases based on particular processes used in the chemical industry.

99. These figures are based on the EPA's own estimation. Rodney F. Lorang, *EPA's Revised EPCRA Section 313 Enforcement Response Policy: How Should the Regulated Community Respond?*, 23 *Env't Rep.* (BNA) No. 43, at 2736 (Feb. 19, 1993).

100. Citizen Action suggests that the EPA should increase the number of facility audits to verify the accuracy of the data in the Form R reports. *Pollution Prevention: Report Says Relatively Few Companies Join Voluntary Effort to Cut Chemical Emissions*, 23 *Env't Rep.* (BNA) No. 23, at 1507 (Oct. 2, 1992) (referring to a report released Sept. 30, 1992 by Citizen Action) [hereinafter *Pollution Prevention: Report*]; Arnett, *supra* note 80, at 10,513 (citing GAO, EPA'S TOXIC RELEASE INVENTORY IS USEFUL BUT CAN BE IMPROVED, No. RCED-91-121, at 20-26 (1991)).

only five percent of the U.S. total of 400 billion pounds.<sup>101</sup> Critics argue the scope is too narrow and that EPCRA should be expanded to include those not directly involved in manufacturing (SIC codes not falling within 20-39 range).<sup>102</sup> If the facility does not fall within the SIC code or has fewer than ten employees, it receives an exemption regardless of the quantities of toxics that the facility may be pumping out.<sup>103</sup> Citizen Action has called on Congress to support HB 2880 (the "Community Right-To-Know More" bill), which would increase the number of industries covered by EPCRA.<sup>104</sup> The group suggests that Congress expand EPCRA to include federal facilities, waste water treatment plants, incinerators, and mining operations.<sup>105</sup>

Representatives of business groups argue that TRI data compiled by the EPA disputes the claims that EPCRA should be expanded. Critics of expansion cite EPA data indicating that nearly ninety percent of all small industry sources could be dropped from EPCRA without posing a risk to public safety.<sup>106</sup> The EPA is now considering a new threshold scheme that would effectively eliminate the reporting burden on a significant number of small businesses.<sup>107</sup> Present reporting is based on use-threshold rather than release threshold, thus reporting is triggered by usage and not actual releases. The use-threshold requires small businesses to report *all releases* of TRI chemicals irrespective of the actual amount released.<sup>108</sup> In other words, if a company falls under EPCRA because it uses 10,000 pounds of a solvent, it must report any release of any of the 300+ TRI chemicals that it may use.

The Small Business Administration (SBA) and the Chemical Manufacturers Association (CMA) support a release-threshold.<sup>109</sup> A release-threshold would require a facility that does not manufacture or process a TRI chemical to report releases or transfers only if it surpasses 5000 pounds in annual releases of that chemical.<sup>110</sup> The SBA estimates that the use of a release-threshold would eliminate fifty-eight percent of the TRI Form R reports and still capture ninety-nine percent of reportable releases of toxic chemicals.<sup>111</sup> The TRI data support this contention: For example, of the 22,569 facilities reporting in 1989, the top fifty accounted for nearly thirty-five percent of the

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101. Arnett, *supra* note 80, at 10,440 (citing a U.S. Office of Technology Assessment (OTA) estimation).

102. *Emergency Planning, supra* note 52, at 1318.

103. *Id.* Approximately 164,500 manufacturers escape EPCRA because they have fewer than 10 full-time employees. *Id.* Compare this number to the number of facilities actually reporting - 22,569 in 1989. 1989 TRI NATIONAL REPORT, *supra* note 47, at 1.

104. *Pollution Prevention: Report, supra* note 100, at 1507.

105. *Id.* HB 2880 also calls for the expansion in the number of chemicals covered by EPCRA. *Id.*

106. *Reporting: New Threshold Scheme Would Alter TRI Requirements for Small Industrial Sources*, 16 Chem. Reg. Rep. (BNA) No. 31, at 1307 (Oct. 30, 1992) [hereinafter *New Threshold Scheme*].

107. *Id.*

108. Often insignificant annual amounts must be reported.

109. *New Threshold Scheme, supra* note 106, at 1307.

110. *Id.*

111. *Id.* (quoting Kevin Bromberg, counsel for the Small Business Coalition for a Responsible TRI Policy).

total releases and transfers.<sup>112</sup>

Based on this information, the expansion critics contend that the addition of 20,000 small businesses is not likely to capture a large amount of those previously unreported releases. Making the threshold scheme more reflective of the facility's actual releases would be a positive modification and would temper the increasing (and sometimes uncertain) regulatory burden on small businesses.<sup>113</sup> The EPA and the Bush administration passed several environmental statutes that have increased the burden on TRI reporters. The EPA recognizes this "regulatory creep" and admits that some statutes impose significant and costly burdens on small business without positive effects on the environment.<sup>114</sup>

The CMA supports the release-threshold as long as it does not replace or provide an alternative basis for reporting.<sup>115</sup> The CMA is concerned that if a release-threshold is instituted in place of the use-threshold, it would result in the expansion of EPCRA. The CMA's fears are unfounded. Instead of replacing use-threshold and thus expanding the number of facilities subject to EPCRA reporting, a release-threshold would serve as a limiting factor applied only after the use-threshold had been met. Therefore, a facility would only be required to report its releases if it manufactured or processed over 25,000 pounds *and* released more than 5000 pounds.<sup>116</sup>

The CMA also suggests redefining the "de minimis" and "article" exemptions.<sup>117</sup> The de minimis exemption allows facilities to exclude releases of toxics if they are in a mixture at less than a one percent concentration (0.1% for carcinogens).<sup>118</sup> The article exemption blocks the reporting of toxic chemicals if they are contained in an "article."<sup>119</sup> An article is a manufactured item of a particular design that does not release the toxic chemical under normal use conditions.<sup>120</sup>

A second option might include the development of a shorter and less-complicated version of the Form R.<sup>121</sup> The NRDC, a likely opponent of the small business exemption, recognizes the cumulative impact that small businesses have on the environment: "[S]mall discharges . . . are the predominant contributor to the toxic urban soup of environmental pollutants."<sup>122</sup>

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112. 1989 TRI NATIONAL REPORT, *supra* note 47, at 63.

113. *New Threshold Scheme*, *supra* note 106, at 1307.

114. *Id.*

115. *Emergency Planning: Proposal to Exempt Some Small Businesses from TRI Reporting Under Review*, *Official Says*, 23 *Env't Rep.* (BNA) No. 43, at 2723 (Feb. 19, 1993) [hereinafter *Proposal to Exempt*].

116. For example, if a facility processes 25,001 pounds of methylene chloride, it would be subject to EPCRA reporting. If the facility released only 4999 pounds, however, it would be exempted from reporting.

117. *Proposal to Exempt*, *supra* note 115, at 2723.

118. 40 C.F.R. § 372.38(a) (1992).

119. *Id.* § 372.38(b).

120. *Id.* § 372.3.

121. *Proposal to Exempt*, *supra* note 115, at 2723. This would not solve the problem of requiring the recordation of insignificant releases.

122. *Id.* "A small business exemption would 'complicate reporting and enforcement and would reduce public and government access to information . . .'" *Id.* (quoting the NRDC).

c. Scope - Chemicals: EPCRA's Abbreviated Hazardous Chemical List Ignores Many Industrial Chemicals

The effectiveness of EPCRA is limited by the short list of chemicals defined as toxic.<sup>123</sup> EPCRA is further limited by the exemption of those toxic chemicals regulated by other federal statutes and many other substances such as pesticides that are known or suspected human carcinogens.<sup>124</sup> Several bills now in Congress (i.e., "Community Right-To-Know More," HB 2880) propose expansion of the list to include RCRA hazardous chemicals, FIFRA chemicals under special review or canceled, Clean Water Act priority pollutants, carcinogens recognized by international agencies, and chemicals with special reportable quantities under SARA.<sup>125</sup> In response to the problems posed by EPCRA's limited scope, the EPA has announced plans for the addition of nearly 200 chemicals to the list of toxic chemicals by early 1994 (reportable on 1995 Form R reports).<sup>126</sup>

Information available through the TRI indicates that the top twenty-five TRI chemicals were responsible for 83.48% of the total toxic chemical releases.<sup>127</sup> It is uncertain whether many of the potential additions to the TRI list will make a significant impact on total reported releases. There is also uncertainty as to whether many of those chemicals not already included in the TRI toxic list will ultimately satisfy the minimal requirements to gain admission. Each proposed chemical addition would have to satisfy the requirements of section 313(d)(2).<sup>128</sup> This section not only requires a finding of sufficient toxicity, but also a finding that it is "reasonably likely to exist beyond facility site boundaries as a result of continuous, or frequently recurring, releases."<sup>129</sup> Therefore, if a chemical is not released in sufficient amounts, it will not gain admission to the TRI list.

EPCRA's criteria for admission contemplates a list that reflects the most widely used and released chemicals. It also seems to observe a balancing of the burden on industry with the absolute value of the information reported. When considering the value of the data collected nationally, the addition of chemicals not continuously or frequently released does little to aid the development of the EPA's National Pollution Prevention Strategies.<sup>130</sup> The value of an expanded list of reportable toxics is speculative, while the burden on industry is more certain. Expansion of the toxic list should only include

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123. *Emergency Planning*, *supra* note 52, at 1318.

124. *Id.* The 322 chemicals and chemical categories are only a small part of the 60,000 substances used in industry. Arnett, *supra* note 80, at 10,440 (citing Mary L. Lyndon, *Information Economics and Chemical Toxicity: Designing Laws to Produce and Use Data*, 87 MICH. L. REV. 1795, 1841-49 (1989)).

125. Hanson, *supra* note 82, at 24.

126. *Browner Announces Plan to Expand TRI to Cover More Chemicals, Industries*, 24 Env't Rep. (BNA) No. 4, at 180 (May 28, 1993) (announcement by Carol N. Browner, Administrator of the EPA); *Firms Should Plan to Include More Chemicals in TRI Emissions Reporting by 1994, EPA Says*, 24 Env't Rep. (BNA) No. 8, at 358 (June 25, 1993).

127. 1989 TRI NATIONAL REPORT, *supra* note 47, at 53.

128. EPCRA § 313(d)(2), 42 U.S.C. § 11,023(d)(2).

129. EPCRA § 313(d)(2)(A), 42 U.S.C. § 11,023(d)(2)(A).

130. See *infra* notes 197-222 and accompanying text.



chemicals that pose significant health or environmental hazards and that are released in substantial quantities. Any benefit realized from list expansion will likely be eclipsed by increased enforcement efforts.

d. Lack of Hazard Assessment Complicates the Analysis of Health Effects of Local Toxic Releases

The lack of health and environmental risk information presents another disability of the TRI. Presently, section 313 does not require the inclusion of health or environmental hazard data. As a result, the TRI does not explore the nature of the aggregate risk faced by a community. Facing only raw numbers, the citizen must digest the data and make sophisticated health hazard assessments.

Without specific information on the health and environmental effects of each chemical, EPCRA would do little to aid communities in emergency planning. Therefore, each chemical's potential toxicity, potential effects, potential nature and degree of toxicity, route of release and exposure, and degradation information, as well as other factors, must be analyzed.<sup>131</sup>

The TRI National Report illuminates this problem: "[T]his report contains aggregate information . . . [which] alone does not indicate the risk these chemicals pose to human health or to the environment. . . . [S]mall releases of highly toxic chemicals may pose greater risks than very large releases of less toxic materials."<sup>132</sup>

The risk posed by an individual release is a function of several factors, including the particular toxicity of the chemical, routes of exposure, type and frequency of the release, environmental conditions at the time of the release, and the extent of public exposure.<sup>133</sup> The TRI National Report notes that "readers should bear in mind the highly variable nature of TRI chemicals, and the fact that large amounts of TRI releases do not necessarily translate into a large potential for toxic effects."<sup>134</sup> The nature of EPCRA reporting does not allow for assessment of public exposure to toxic chemicals. Transfers to underground injection wells and regulated landfills are designed to prevent public exposure. Releases to surface water and air does not inherently result in public exposure, but does greatly increase the health and environmental risks. The toxicity of a given chemical can be highly variable depending on the particular release and the concomitant environmental conditions (i.e., high winds, rain, population density, etc.). Therefore, unique site-specific information (i.e., toxicity and environmental conditions) is required to determine a reliable hazard assessment for particular releases of toxic substances.

The TRI functions as an "indicator of toxic chemical releases and transfers that may warrant additional examination."<sup>135</sup> One possible method that

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131. Christiansen & Urquhart, *supra* note 5, at 250-51.

132. 1989 TRI NATIONAL REPORT, *supra* note 47, at 19-20.

133. *Id.* at 20.

134. *Id.*

135. *Id.* at 54.

helps put the data in perspective in relation to the individual reporting facility is to have the facility also report total outflow and to estimate the concentration of each toxin in the effluent. Since toxicity data based on concentration is widely available, this information would provide a number that has real meaning to the private citizen. It would also help the facility identify specific areas for improvement.

In the absence of risk assessments, who has the responsibility for evaluating the data for health and environmental hazards? The EPA already assembles and distributes relevant toxicity information through other federal programs. The Toxic Substances Control Act (TSCA),<sup>136</sup> Federal Insecticide, Fungicide and Rodenticide Act (FIFRA),<sup>137</sup> and the National Toxicological Program (NTP) all provide hazard and toxicological information of TRI chemicals.<sup>138</sup> These sources provide the toxicity of each chemical based on concentration levels. Taking the role as data interpreter for the public is consistent with the EPA's role as data collector and toxic "town crier" under EPCRA and its core responsibility as environmental protector.<sup>139</sup> The availability of risk and hazard assessments would ease efforts to measure true reductions in toxicity and the effectiveness of pollution prevention programs.

The lack of risk and hazard assessments may lead to increased toxic-for-toxic substitutions. If the goal is to reduce the aggregate toxicity of releases, then some comparison must be made between what facilities have released in the past and what is being released today. Toxic use reduction may not be achievable without some risk comparison between the chemical to be substituted (A) and the substituting chemical (B). Encouraging substitution of targeted chemicals (such as benzene) may result in the use of a replacement chemical possessing other risks cumulatively more hazardous than the original chemical.<sup>140</sup>

This problem has been observed in industry. In an effort to eliminate ozone-depleting CFC emissions, an EPCRA facility substituted ethylene glycol derivatives for chlorofluorocarbons used in its plant. What the plant failed to recognize was that glycol ethers have been strongly associated with causing reproductive problems in exposed workers.<sup>141</sup> Without proper guidance, this mistake will be repeated. Risk assessments are vital to the goal of reducing pollution and minimizing public exposure to risks.

Interestingly, a survey conducted by the CMA has revealed that many companies are developing their own "risk communication plans" in an effort to better inform the public and to ensure that TRI data is not misinter-

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136. Pub. L. No. 99-519, § 3(c)(1), 100 Stat. 2989 (codified at 15 U.S.C. §§ 2601-2671 (1988)).

137. Pub. L. No. 92-516, § 2, 86 Stat. 998 (codified at 7 U.S.C. §§ 136-136Y (1988)).

138. EPA, TOXICS IN THE COMMUNITY, NATIONAL AND LOCAL PERSPECTIVES 325 (1991).

139. Arnett, *supra* note 80, at 10,440.

140. *Pollution Prevention: Researcher Says Toxic Use Reduction Plans Need Risk Assessments to Achieve Stated Goals*, 16 Chem. Reg. Rep. (BNA) No. 37, at 1553 (Dec. 11, 1992).

141. *Id.*

puted.<sup>142</sup> TRI facilities themselves are attempting to respond to the lack of health hazard and environmental risk information. If this indicates a future trend, it is questionable whether the individual TRI facility is in the best position to provide the public with accurate community health hazard and environmental risk assessments. At the very minimum, a TRI facility would be able to put its releases in context by processing the raw TRI data into a report that communicates the concentration of a toxic (e.g., concentration in water or air) instead of total releases and considers the facility's particular environmental surrounding (e.g., distance from neighborhoods). Certainly, the neighboring citizen would be quick to question the credibility of such an assessment of risks and hazards. In the absence of health hazard reporting, however, any interpretation of raw TRI data makes EPCRA a better pollution reduction tool.

#### IV. ENFORCEMENT OF SECTION 313 REPORTING REQUIREMENTS

EPCRA section 325 provides the EPA with the authority to order a facility's compliance with the reporting requirements of section 313.<sup>143</sup> The EPA sets the penalty amounts high to ensure that reporting releases and transfers will always be in a facility's best economic interest.<sup>144</sup> The EPA published an Enforcement Response Policy to ensure that enforcement actions "are arrived at in a fair, uniform and consistent manner; that the enforcement response is appropriate for the violation committed; and that persons will be deterred from committing section 313 violations."<sup>145</sup>

Section 326 allows citizens to sue for failure to comply with the requirements of EPCRA.<sup>146</sup> A citizen may commence a civil action on his or her own behalf against the owner or operator of a facility for failure to do any of the following:

- 1) Submit a follow-up emergency notice under section 304;
- 2) Submit MSDS's or a list of on-site chemicals under section 311(a);
- 3) File an inventory form containing Tier I or Tier II information under section 312(a) and 312(d)(1); or
- 4) File a Form R under section 313(a).<sup>147</sup>Section 326(c) provides that "[a]ny person (other than a governmental entity) who violates any requirement of section 11,022 [312] or 11,023 [313] of this title, shall be liable to the United States for a civil penalty in an amount not to exceed \$25,000 for each such violation."<sup>148</sup>

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142. *Chemical Industry Foresees Problems in New Data Requirement of Toxics Inventory*, 23 *Env't Rep. (BNA) No. 52*, at 3207 (Apr. 23, 1993).

143. EPCRA § 325, 42 U.S.C. § 11,045.

144. *Id.*

145. *Environmental Protection Agency: Enforcement Response Policy for Section 313 of the Emergency Planning and Community Right-To-Know Act*, 20 *Env'tl. L. Rep. (Env'tl. L. Inst.)* 35,199 (Dec. 2, 1988).

146. EPCRA § 326, 42 U.S.C. § 11,046.

147. EPCRA §§ 304, 311(a), 312(a), 312(d)(1), 313(a), 42 U.S.C. §§ 11,004, 11,021(a), 11,022(a), 11,022(d)(1), 11,023(a).

148. EPCRA § 326(c), 42 U.S.C. § 11,045 (1988).

Theoretically intimidating, a lack of funding has slowed the EPA's enforcement activities.<sup>149</sup> Fortunately, concerned citizen-activists have filled some of the enforcement gaps left by the EPA through EPCRA's citizen suit provision. Since 1988, citizens have filed over 202 notices of intent to sue.<sup>150</sup> The EPCRA citizen suit is unique from others in environmental regulations as the citizen litigant is not hampered by the decision in *Gwaltney v. Chesapeake Bay Foundation, Inc.*<sup>151</sup> The United States Supreme Court in *Gwaltney* essentially prevented citizens from maintaining actions for past violations of the Clean Water Act.<sup>152</sup>

By contrast, it appears that citizens may maintain a suit under EPCRA for past violations that are not continuing.<sup>153</sup> The district court in *Atlantic States Legal Foundation, Inc. v. Whiting Roll-up Door Manufacturing Corp.* distinguished *Gwaltney* by finding that "plaintiffs may bring a citizen enforcement action pursuant to § 326(a) to seek civil penalties for failure to comply with EPCRA's reporting provisions even though the plaintiff alleges no continuing violation."<sup>154</sup> The court examined the differences in the statutory language of EPCRA, allowing citizen suits for the "failure to" comply,<sup>155</sup> and the Clean Water Act, authorizing citizen suits against a person "who is alleged to *be in violation*" of the Clean Water Act.<sup>156</sup> The court noted that, unlike the Clean Water Act, EPCRA allows for relief of past violations.<sup>157</sup> Civil penalties are available against "[a]ny person who violates any requirement" of EPCRA.<sup>158</sup> This includes violations based on the failure to file Form Rs by the annual deadline.<sup>159</sup> Considering EPA's estimate that thirty percent of all facilities that are required to report releases under section 313 have failed to file Form R reports, the citizen-activist has numerous opportunities to become involved in the enforcement of EPCRA reporting requirements.<sup>160</sup>

#### A. LIABILITY UNDER SECTION 313

The EPA possesses the statutory authority to assess penalties of up to \$25,000 per violation per day for the failure to file a Form R report.<sup>161</sup> A facility faces strict liability for any violation of section 313. The strict liability enforcement policy, therefore, prevents a facility from escaping section

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149. Finto, *supra* note 44, at 47.

150. *Enforcement: 202 EPCRA Citizens' Suit Notices Filed Since 1988 by 17 Groups, Individuals, EPA Says*, 16 Chem. Reg. Rep. (BNA) No. 22, at 938 (Aug. 28, 1992).

151. 484 U.S. 49 (1987).

152. *Id.*

153. See *Atlantic States Legal Found., Inc. v. Whiting Roll-Up Door Mfg. Corp.*, 772 F. Supp. 745, 752 (W.D.N.Y. 1991).

154. *Id.* at 753.

155. EPCRA § 32, 42 U.S.C. § 11,046 (1988).

156. Clean Water Act, FWPCA § 505(A)(1), 33 U.S.C. § 1365(A)(1) (1988) (emphasis added).

157. *Atlantic States*, 772 F. Supp. at 752.

158. EPCRA § 325, 42 U.S.C. § 11,045(c) (1988).

159. *Atlantic States*, 772 F. Supp. at 747-48.

160. Lorang, *supra* note 99, at 2736.

161. EPCRA § 325(c)(1), 42 U.S.C. § 11,045(c)(1).

313 reporting requirements by pleading ignorance.<sup>162</sup> Realistically, ignorance of EPCRA reporting requirements is the main reason facilities fail to file Form Rs.<sup>163</sup> Regulators have made strong efforts to inform the public, but have only been partially successful. This primarily results from the potential size of the regulated community. It has been difficult for the EPA to reach such a diverse group.<sup>164</sup> Even the facilities that do file Form R reports are not entirely certain that they are in compliance. Many facility representatives have expressed incredulity that, after four years of EPCRA compliance, they are still uncertain if they are facing violations.<sup>165</sup>

Usually it is the small company — typically lacking the professional regulatory department or the resources to comply — that is adversely affected.<sup>166</sup> Although many view EPCRA liability as strict, the lack of enforcement has led to uncertainty as to whether a facility may be penalized for the non-negligent failure to report a release.<sup>167</sup> The strict liability issue is becoming increasingly important since the advancement of trace-concentration detection technology makes it possible to discover a facility's past non-negligent reporting violations. Although not entirely resolved, it is unlikely that a facility would be fined after reporting releases of a listed TRI chemical that was previously undetectable.<sup>168</sup>

#### B. EPA'S REVISED ENFORCEMENT POLICY

On August 10, 1992 the EPA issued a Revised Enforcement Policy. The nature of EPA's enforcement policy has changed slightly. In the past, the EPA directed nearly all of the section 313 actions at facilities that failed to file Form R only after inspection and discovery by the EPA.<sup>169</sup> The new policy directs enforcement activity to other section 313 violations and refines the process involved in developing an appropriate penalty for a particular violation.<sup>170</sup>

The new policy uses a matrix to define appropriate penalties. The matrix is divided by "extent" of the violation (duration, amount of chemical, total number of employees, amount of sales) and by "circumstances" surrounding the violation (degree of lateness: Form R files late in excess of one year, inaccurate records, grossly inaccurate data estimations, etc.).<sup>171</sup> Depending on the violator's cooperation, the new policy allows for adjustments to the proposed fine during the settlement negotiations. Factors involved in determining the extent of "cooperation" include level of access to records, respon-

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162. Lorang, *supra* note 99, at 2736; *see also* Riverside Furniture Corp., EPCRA-88-H-VI-406S (Mar. 27, 1989) (claiming ignorance of the reporting requirements is no defense to a failure to comply with them).

163. Lorang, *supra* note 99, at 2736.

164. Finto, *supra* note 44, at 47.

165. Hanson, *supra* note 82, at 24.

166. *Id.*

167. *See id.*

168. *Id.*

169. *Id.*

170. Lorang, *supra* note 99, at 2736.

171. *Id.*

siveness to document production requests, and preparedness and cooperation during the settlement process.<sup>172</sup> The EPA has continued its policy of allowing penalty offsets for supplemental environmental projects that are not otherwise required by law.<sup>173</sup> The new policy allows for a maximum fifty percent reduction in the penalty. Those who cooperate by turning themselves in (i.e., filing a Form R after four years of non-reporting) will still be penalized.<sup>174</sup> The policy behind fining those who turn themselves in is that there would otherwise be an easy escape from liability.<sup>175</sup>

The EPA noted that it would intensify EPCRA enforcement activity in an effort "to address data quality and documentation problems."<sup>176</sup> The "EPA will be looking principally for data quality errors that are the result of a failure to comply with the explicit requirements of EPCRA."<sup>177</sup> Fines appear likely for acts of negligence in data compilation, estimations, and reporting.<sup>178</sup> Recent events indicate that the EPA is stepping up its efforts to enforce EPCRA reporting requirements. Upon announcing the filing of multi-state enforcement actions, the EPA's Assistant Administrator said, "[t]oday's enforcement actions emphasize the EPA's commitment to vigorously prosecute our nation's environmental laws."<sup>179</sup> In the first four years of EPCRA, the EPA filed over 250 enforcement actions. The average penalty sought by the EPA was \$36,000,<sup>180</sup> and the largest section 313 settlement was \$142,800.<sup>181</sup>

The concerted enforcement actions by citizens through the citizen suit provision and EPA's revised enforcement strategy, in addition to the potentially enormous liability, should encourage non-reporters to file and those in compliance to scrutinize the data and estimations they provide on the Form R. The key to prescribing a penalty is assessing the economic benefit that the violator has derived from noncompliance. The GAO conducted a study that indicated the EPA failed to document the economic benefit to the violator in sixty-six percent of all regulatory actions in 1990.<sup>182</sup> The EPA should enhance the policy of high fines to discourage non-reporting and extinguish the violator's economic benefit in its final penalty. The new enforcement policy indicates a desire to promote consistency in penalties and a renewed focus on data quality and documentation violations.

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172. *Id.*

173. *Id.*

174. *Id.*

175. *Id.*

176. *Id.* at 2740.

177. *Id.*

178. *Id.*

179. *Enforcement Actions Filed in 16 States Against Pollution Law Violators*, ENVTL. NEWS (News Release), 1992 WL 237,122 (EPA) (Sept. 10, 1992).

180. Christiansen & Urquhart, *supra* note 5, at 255.

181. *Id.* at 265. The violator was a chemical manufacturer.

182. RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE, ENVIRONMENTAL ENFORCEMENT: PENALTIES MAY NOT RECOVER ECONOMIC BENEFITS GAINED BY VIOLATORS 1 (1991).

## V. POLLUTION PREVENTION ACT OF 1990: THE NEWEST ADDITION TO FORM R REPORTING REQUIREMENTS

"Pollution Prevention" represents a fundamental change in the foundation of environmental regulation. It may also prove to be the most important and influential product of EPCRA reporting. The focus on prevention represents a departure from traditional command-and-control regulatory schemes. Pollution prevention attempts to supplement the traditional regulatory network (the programs focusing on independent areas—air, water, waste) by encouraging reduction in the generation of waste.

Changing production and manufacturing processes to minimize waste obviates expensive and regulatory intensive end-of-pipe activities. In 1990, Congress passed the Pollution Prevention Act (PPA or the Act),<sup>183</sup> designed specifically to encourage and promote waste prevention strategies. Congress passed this brief legislation based on a number of findings supporting the policy that pollution should be prevented or reduced at its source whenever possible.<sup>184</sup> Congress found that the United States spends billions of dollars every year controlling pollution and recognized that opportunities to reduce or prevent are available through cost-effective changes in production, operation, and raw materials use.<sup>185</sup> Congress also found that source reduction opportunities are not realized by industry because traditional forms of environmental regulation focus on treatment and disposal.<sup>186</sup> Congress realized that source reduction is the essential step in pollution prevention,<sup>187</sup> and in response it required the EPA to establish a pollution prevention program to collect and disseminate information and provide financial support for the development of prevention techniques.<sup>188</sup>

The PPA imposes mandatory reporting requirements on all facilities required to file Form Rs under section 313 of EPCRA. The PPA expands the Form R by requiring facilities to describe the steps they are taking to reduce waste generation.<sup>189</sup> For each TRI chemical, the facility must report the following information: (1) the quantity of the chemical entering the waste stream or released into the environment prior to recycling, treatment, or disposal, and an estimate of the amount projected to be released in the next two years; (2) the quantity recycled or treated; (3) the source reduction practices (equipment modifications, process changes, or reformulations) used by the facility with respect to that chemical; (4) an activity index or production

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183. Pub. L. No. 101-508, 104 Stat. 1388 (codified at 42 U.S.C. §§ 13,101-13,109 (Supp. III 1991)).

184. PPA § 6602(b), 42 U.S.C. § 13,101(b). It is the national policy of the United States that pollution prevention be the method of pollution control whenever feasible; pollution that cannot be prevented should then undergo recycling; pollution not suitable for recycling should then be treated in an environmentally safe manner; if treatment is not feasible, then the waste should be disposed or released in an environmentally safe manner and should only be done as a last resort. *Id.*

185. PPA § 6602(a), 42 U.S.C. § 13,101(a).

186. PPA § 6602(a)(3), 42 U.S.C. § 13,101(a)(3).

187. PPA § 6602(a)(4), 42 U.S.C. § 13,101(a)(4).

188. *Id.*

189. PPA § 6607, 42 U.S.C. § 13,106.

ratio for the previous year that allows for real historical comparisons by correcting for changes in the level of production (thus preventing facilities from claiming pollution reductions actually caused by a drop in production); and (5) techniques used to identify source reduction opportunities.<sup>190</sup> These reporting requirements are enforceable.<sup>191</sup> A facility may face fines of up to \$25,000 per day if in violation.<sup>192</sup>

The PPA does not impose requirements for waste reduction. It only attempts to direct the facility's attention toward pollution prevention by requiring industries to re-evaluate raw materials, processes, and products. In addition, the PPA directs the EPA to document the implementation of waste management programs at each facility.<sup>193</sup> Prior to the PPA, waste reduction reporting was voluntary. In 1989 only eleven percent of reporting TRI facilities indicated making attempts to minimize TRI chemical wastes.<sup>194</sup> The only direct impact that the PPA will have on industry is the expansion of the Form R reporting requirements. The most important aspect (and the true focus) of the PPA is its mandate to the EPA to promote source reduction.<sup>195</sup>

The PPA defines several new functions and provides new authority to the EPA. Under the Act, the EPA is required to establish a new interagency office to carry out the functions of the Act.<sup>196</sup> The EPA is charged with developing a strategy to promote source reduction.<sup>197</sup> Through the Office of Pollution Prevention, the EPA coordinates source reduction activities, collects<sup>198</sup> and disseminates pollution prevention information, and acts to facilitate the adoption of source reduction techniques.<sup>199</sup> Much of this is accomplished through the use of the Source Reduction Clearinghouse<sup>200</sup> (basically a source for industry specific information regarding process changes to reduce waste generation) and state matching research grants.<sup>201</sup>

In 1991, the EPA responded to the Congressional mandate by introducing its Pollution Prevention Strategy. The strategy focuses on providing incentives in regulations and encouraging pollution prevention through the development of voluntary programs and identification of measurable goals.<sup>202</sup> On February 7, 1991 the EPA announced the creation of the thirty-three/fifty

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190. PPA § 6607(b), 42 U.S.C. § 13,106(b).

191. PPA § 6604, 42 U.S.C. § 13,103.

192. PPA § 6501, 42 U.S.C. § 4370(c) (1988).

193. 1989 TRI NATIONAL REPORT, *supra* note 47, at 252.

194. *Id.* at 228.

195. Bert Black & David H. Hollander, Jr., *Forced Volunteerism: The New Regulatory Push to Prevent Pollution*, 16 Chem. Reg. Rep. (BNA) No. 42, at 1996 (Jan. 22, 1993).

196. PPA § 6604(a), 42 U.S.C. § 13,103(a) (Supp. III 1991). The EPA has established the Office of Pollution Prevention and Toxics.

197. PPA § 6604(b), 42 U.S.C. § 13,103(b). The EPA has published the Pollution Prevention Strategy in response.

198. PPA § 6607, 42 U.S.C. § 13,106.

199. PPA § 6604, 42 U.S.C. § 13,103.

200. PPA § 6606, 42 U.S.C. § 13,105.

201. PPA § 6605, 42 U.S.C. § 13,104. The Act provides for 50-50 matching funds (totaling \$16 million) to encourage source reduction programs. States that receive grant money must make the information collected available to the administrator. PPA § 6605(e), 42 U.S.C. § 13,104(e).

202. PPA § 6604(b)(6), 42 U.S.C. § 13,103(b)(6).



program. This voluntary program focuses on the reduction of seventeen high-priority toxic chemicals. The goal of the program is to reduce the release and transfer of the seventeen target chemicals by thirty-three percent before 1992 and by fifty percent before 1995. The reductions will be measured against the levels released and transferred in 1988.<sup>203</sup> The EPA has announced that over 1000 facilities have volunteered to participate in the project. The EPA notes that over half of the largest 500 TRI facilities have joined the thirty-three/fifty program.<sup>204</sup>

The EPA has actively researched opportunities for pollution prevention.<sup>205</sup> As part of its 1992 Pollution Prevention Incentive Program, the EPA's Office of Pollution Prevention recently awarded \$3 million to sixteen state organizations for projects that address pollution reduction.<sup>206</sup> The EPA has issued industry specific pollution prevention guides to help industries recognize and incorporate proven methods of pollution reduction.<sup>207</sup>

Several coordinated research programs have been established in response to the focus on pollution prevention. The Waste Reduction Innovative Technology Evaluation Program is a joint effort between state and local governments charged with the evaluation of source reduction and on-site recycling technologies.<sup>208</sup> "Green Lights" is a voluntary program that encourages the use of high efficiency lighting. Over 425 corporations have joined the program resulting in the equivalent of taking 1.6 million cars off the road, according to the EPA.<sup>209</sup> The Innovative Clean Technologies Project publicizes successful innovations in pollution reduction with a focus on small businesses.<sup>210</sup>

Probably the most effective way to convince companies to adopt pollution prevention techniques is to publish case studies that document real cost savings and are specifically adaptable to common production processes. One of the most promising EPA efforts is the distribution of the Pollution Prevention Case Studies Compendium.<sup>211</sup> The Case Compendium includes process

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203. 1989 TRI NATIONAL REPORT, *supra* note 47, at 255.

204. *Pollution Prevention: More Than 1,000 Firms Said to Have Signed Up to Participate in EPA Program to Cut Toxics*, 16 Chem. Reg. Rep. (BNA) No. 40, at 1877 (Jan. 8, 1993).

205. See *EPA Awards University Research Grants to Design Chemical Methods that Prevent Pollution*, EPA (News Release 92-R-181), Sept. 11, 1992, available in WESTLAW, 1992 WL 237,123; *Note to Correspondents*, EPA (News Release 92-R-207), Oct. 15, 1992, available in WESTLAW, 1992 WL 302,049 (announcing grant recipients).

206. *Note to Correspondents*, EPA (News Release 92-R-203), Oct. 13, 1992, available in WESTLAW, 1992 WL 302,046.

207. Some industries targeted include mechanical equipment repair, metals, printed circuit board, pesticide formulating, paint manufacturing, commercial printing, hospital, research and educational institutions, automotive repair, glass reinforcing and plastic composites, marine maintenance and repair, and pharmaceuticals. See EPA OFFICE OF RESEARCH & DEVELOPMENT, FACILITY POLLUTION PREVENTION GUIDE, EPA/600/R-92/088, at 135 (May 1992); EPA OFFICE OF RESEARCH & DEVELOPMENT, INDUSTRIAL POLLUTION PREVENTION OPPORTUNITIES FOR THE 1990s, EPA/600/8-91/052 (Aug. 1991).

208. Black & Hollander, *supra* note 195, at 1996.

209. *Id.*

210. *Id.* at 1998.

211. EPA OFFICE OF RESEARCH & DEVELOPMENT, POLLUTION PREVENTION CASE STUDIES COMPENDIUM, EPA/600/R-92/046 (Apr. 1992).

changes that significantly reduce waste and save money. Some examples include the use of a plastic bead-blast paint stripper in place of the most widely used paint stripper, dichloromethane (the number one released carcinogen in 1989).<sup>212</sup> General Dynamics reported a 10,000 pounds per year reduction in dichloromethane release with the use of the new stripper.<sup>213</sup> General Dynamics realized a cost savings of \$5000 per year through the use of this technology.<sup>214</sup>

A separate case study focused on the chemical substitution of 1,1,1-trichloroethane. Trichloroethane is a major industrial toxic pollutant ranking ninth on the TRI national report for total releases with approximately 185 million pounds.<sup>215</sup> This chemical is a highly volatile solvent used primarily for grease removal from electronic components. ASP Materials replaced 1,1,1-trichloroethane with an orange terpene based cleaner (a naturally derived solvent) used in a heated ultrasonic bath. ASP reported a capital cost of \$1793 and a net annual cost savings of \$4800, making the payback period four and one-half months. Trichloroethane is typically used by small businesses involved in equipment repair and electronics. These are cost sensitive companies. One advantage of trichloroethane is its high volatility, which enables the user to avoid disposal costs by allowing the chemical to completely evaporate. Case studies are important educational tools to show the cost savings and effectiveness of various prevention techniques.<sup>216</sup> Only after a showing of effectiveness and a significant return on capital investment will a company be willing to purchase equipment or risk changing processes and/or make chemical substitutions. Case studies provide information that small businesses desire most.

The EPA recently announced the results of a two-year pilot project with Amoco Oil Co. that focused on making risk-based decisions to reduce multimedia pollution at its Yorktown, Virginia refinery.<sup>217</sup> The project resulted in significant reductions at a cost that was less than complying with mandatory pollution control regulations under other environmental statutes.<sup>218</sup> Instead of using technology mandated by other statutes, Amoco and the EPA identified specific steps in Amoco's refining process that would result in pollution reduction.<sup>219</sup> Some of the steps taken by Amoco included controlling barge loading emissions, improving seals on its storage tanks, establishing a leak detection and repair program, and upgrading its vents.<sup>220</sup> As a result, Amoco reduced VOC emissions by 7000 tons at a cost of \$500

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212. *Id.* at 13.

213. *Id.* at 14.

214. *Id.*

215. 1989 TRI NATIONAL REPORT, *supra* note 47, at 53.

216. The cost savings data is probably the most important part of the EPA's effort to promote and facilitate adoption of pollution prevention techniques.

217. *Pilot Project Cut Pollution at Less Cost Than Mandated Rules, Amoco Official Says*, 24 Env't Rep. (BNA) No. 21, at 903 (Sept. 24, 1993).

218. *Id.*

219. *Id.*

220. *Id.*

per ton.<sup>221</sup> Amoco's success is impressive, considering that the cost of controlling VOC emissions under current regulations is \$2100 per ton.<sup>222</sup>

## VI. CONCLUSION

EPCRA will continue to expand in scope as the EPA steps up its enforcement of the reporting requirements. Recognizing this trend, some view EPCRA as a future business opportunity for defense attorneys.<sup>223</sup> Liability can be avoided simply by filing an annual Form R and Toxic Chemical Inventory. The scope of EPCRA is not likely to be reduced in the near future as the successes of the Toxic Release Inventory will fuel the desire to collect and analyze transfer and release data. Especially important is the Pollution Prevention Strategy recently adopted by the EPA. The use of technical assistance and research grants for the development of cost effective methods of source reduction will certainly lead to the adoption of more pollution prevention technologies. Although presently a purely voluntary initiative, pollution prevention requirements will probably become part of other federal environmental regulations.<sup>224</sup> The critical element to a successful, voluntary source-reduction program is to make it clear to industry that pollution prevention is not only environmentally desirable, but also is in its economic best interests.

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221. *Id.*

222. *Id.*

223. *Enforcement: EPCRA Business Potential Substantial for Defense Attorneys, EPA Official Says*, 16 Chem. Reg. Rep. (BNA) No. 25, at 1122 (Sept. 18, 1992).

224. Black & Hollander, *supra* note 195, at 2000. TSCA is one that has already been identified as a prime candidate.