ENVIRONMENTAL JUSTICE AND PROCEDURAL SAFEGUARDS: THE ETHICS OF ENVIRONMENTAL RESTORATION

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I. INTRODUCTION

Several decades ago, Nathan Hare, editor of *The Black Scholar* and author of *The Black Anglo-Saxons*, wrote that the interests of environmentalists and blacks "stand in contradiction to each other."[1] He accused those interested in environmental restoration of being focused only on physical and chemical pollution and aesthetic conditions, when they ought to address restoration of the total environment. That total environment, according to Hare, is fundamentally different in the ghetto than it is in the suburbs.[2]

In focusing on environmental justice as an element of environmental restoration, this Article first reviews the emergence of environmental justice problems and the executive order designed to address them. Next, using the environmental impact study prepared for continued operations of the Los Alamos

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1. Nathan Hare, *Black Ecology*, *in* ENVIRONMENTAL ETHICS 229, 229 (Kristin Shrader-Frechette ed., 1991).

2. *See id.*

National Laboratory as a case study, this Article argues that the executive order has not succeeded in focusing the needed attention on environmental justice issues. As a consequence, although the United States has legal prohibitions against environmental injustice, these prohibitions have had little practical effect. Moreover, this Article argues that the Los Alamos case is typical. Because there is no one to watch the watchers, federal regulatory agencies have not acted to ensure environmental justice. Finally, this Article argues that, to solve the problem caused by a lack of meaningful oversight, the United States needs a system of adversary assessment and procedural safeguards.

Because there is growing national recognition that disparities in environmental health risks are related to race and socioeconomic status, environmental justice is now a priority on the nation's public health agenda.[3] Environmental justice, which accords all people equal environmental protection regardless of their race, ethnicity, class, age, or gender, should be an explicit goal of U.S. environmental policy. The problems that face disadvantaged, non-white communities became prominent national issues during the 1990s, based on a widespread, grassroots environmental justice movement.[4] As a result, members of Congress have introduced legislation dealing with issues of environmental justice.[5] On Earth Day 1993, President Clinton announced a commitment to achieve environmental justice for all Americans.[6] On February 11, 1994, he issued an Executive Order directing federal agencies to consider issues of environmental justice in connection with federal activities.[7] The Order states, in relevant part:

> To the greatest extent practicable and permitted by law...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States....[8]

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3. *See generally* Exec. Order No. 12,898, 59 Fed. Reg. 7629 (1994); Paul Cotton, *Pollution and Poverty Overlap Becomes Issue, Administration Promises Action*, 271 JAMA 967, 967–69 (1994); Bud Ward, *Environmental Racism Becomes Key Clinton EPA Focus*, SAFETY & HEALTH, March 1994, at 183, 183–86.

4. *See* Robert D. Bullard, *Anatomy of Environmental Racism and the Environmental Justice Movement*, *in* CONFRONTING ENVIRONMENTAL RACISM: VOICES FROM THE GRASSROOTS 15, 24–26 (Robert D. Bullard ed., 1993).

5. *See e.g.* H.R. 1510, 106th Cong. (1999) ("Environmental Justice Act of 1999"); 144 CONG. REC. H7914-03, *H7914 (1998) (discussing the introduction of H.R. 4585, "a bill to promote environmental justice").

6. *See* Carol M. Browner, *Clinton Clearly Leads the Way on Environment*, HOUSTON CHRON., Dec. 29, 1993, at 21.

7. 59 Fed. Reg. at 7629.

8. *Id.*

II. *DE JURE* AND *DE FACTO* ENVIRONMENTAL JUSTICE: LOS ALAMOS

Environmental justice appears to be a priority in theory, while in practice it is not. Although federal agencies now specifically address environmental justice issues in their impact assessments, regulations, and rules, they do so only in the most pro-forma way.[9] Here, we consider a typical case in which the discussion of environmental justice was little more than a parody of what the executive order requires. This case is contained in the U.S. Department of Energy's ("DOE") Site-Wide Environmental Impact Statement ("SWEIS") for Continued Operation of the Los Alamos National Laboratory ("LANL").[10]

At several thousand pages, this multi-volume document represents the DOE's analysis of various alternatives for operating its research facility in northern New Mexico. Once the site of the Manhattan Project,[11] LANL remains a base for nuclear research and development, and it regularly handles and disposes of plutonium and other hazardous substances.[12] Contamination at the facility has prompted the need for an environmental restoration program to remediate contaminated sites under LANL control.[13] The environmental and health-related impacts from activities at LANL arise primarily from wastewater discharges and radioactive air emissions.[14]

In this context, the SWEIS claims to have studied the potential environmental impacts of continued operations with an eye toward ensuring that no disproportionate impacts would be borne by local minority and low-income communities.[15] Having recited the appropriate language, the DOE simply concluded that there would be no high and adverse disproportionate risk to minority or low-income persons under any of the proposed alternatives, including its preferred Expanded Operations Alternative.[16] In the sections that follow, we contend that this conclusion is incorrect, that the DOE's methodology is questionable, and that the rosy statements belying any environmental injustice conflict even with the agency's own conclusions contained in the SWEIS.

A. Residential Risks Near LANL

In order to determine whether radiological impacts from the expanded LANL operations would put minority or low-income populations at a

9. *See infra* Part III.

10. U.S. DEP'T OF ENERGY, SITE-WIDE ENVIRONMENTAL IMPACT STATEMENT FOR CONTINUED OPERATION OF THE LOS ALAMOS NATIONAL LABORATORY, ALBUQUERQUE, NEW MEXICO (1999) [hereinafter SITE-WIDE EIS].

11. *See* 1 SITE-WIDE EIS, at 2-1.

12. *See id.* 2-2 to 2-32.

13. *See id.* 2-9 to 2-13.

14. *See id.* 3-53.

15. *See id.* 3-56 to 3-57.

16. *See id.* at 3-57, 5-69, 5-120.

disproportionate risk for negative health effects, the SWEIS divides the area within a fifty-mile radius of LANL into sectors.[17] These sectors are defined by sixteen pie-wedge-shaped sections divided by four concentric circles drawn at ten-mile intervals.[18] Demographic information for each of the sectors was then gathered to determine if an area had a minority or low-income population in excess of twenty-five percent of the total population of that sector.[19] Of the sixteen pie-wedge-shaped sections within the first ten miles of LANL, the SWEIS points out that "only" two sections have populations consisting of more than twenty-five percent minority or low-income persons.[20] The SWEIS states:

> In order to determine whether impacts [concerning environmental justice] are disproportionate, the impacts in sectors with a substantial presence of minority or low-income populations are compared to the sectors that do not have a substantial presence of these populations. In this case, sectors 1-3 and 6-16, all within a 10-mile (16 kilometer) radius of LANL, do not have a substantial presence of minority or low-income populations and are used for this comparison.[21]

The SWEIS uses the fact that only two of the sixteen pie-wedge-shaped sectors within ten miles of LANL contain relatively high numbers of minority and low-income people to support its conclusion that the proposed waste facilities would not have a disproportionate effect on minority or low-income persons.[22] However, the basis for this conclusion is not sound. For one thing, it does not consider the population dynamics within the first ten-mile radius. Since the segments within ten miles of LANL are not broken down into smaller sections, the DOE fails to take into account that minority and low-income populations are concentrated immediately adjacent to nuclear and waste facilities at LANL, while the non-minority, wealthier population is located farther away, toward the outside edge of the first ten-mile segments.[23] This is particularly problematic given the

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17. *See id.* 4-147 to 4-154.
18. *See id.* 4-151 fig.4.7.1-2.
19. *See id.* 4-152 to 4-154.
20. *See id.* at 4-147 to 4-151.
21. *Id.* at 5-14.
22. *See id.* at 3-57, 5-69, 5-120.
23. *See, e.g., id.* at 4-13 (acknowledging, for example, that most inhabitants of the Pueblo of San Ildefonoso live approximately 2.75 miles northeast of LANL). These concerns were raised in letters commenting on shortcomings in the draft SWEIS. *See* Letter from Ann Berkley Rodgers, Attorney for the San Ildefonso Pueblo, to Corey Cruz, U.S. Dep't of Energy (July 15, 1998), *reprinted in* 4 SITE-WIDE EIS, *supra* note 10, at 3-70. In her letter on behalf of the Pueblo, Rodgers notes that "practical reality clear from any map" shows a proposed hazardous waste dump to be located immediately adjacent to a sacred area of the Pueblo community. *Id.* at 3-84. Rodgers also notes that nuclear materials are sited immediately adjacent to the community, which could lead to localized groundwater contamination affecting community members. *See id.* at 3-86. *Accord* Letter from J. Gilbert Sanchez, Executive Director, Tribal Environmental Watch Alliance, to Bruce G. Twining

DOE's recognition that "[c]ontaminants in air emissions decrease in concentration (and thus in impact) with distance from LANL."[24] In fact, it is difficult to square this statement with the agency's conclusion that it "expects the impact to affect all populations in the area equally."[25]

The often-repeated conclusion to the effect that "all people will be affected equally" strongly conflicts with the SWEIS where it discusses impacts to nearby Pajarito Native American towns and the White Rock trailer park. The SWEIS states that the nuclear facilities would not pose a disproportionate risk for minority or low-income populations, while at the same time admitting that a "potential environmental justice issue" exists for Area G, which borders sectors containing low-income and minority populations.[26] This denial of the disproportionate risk is inapposite. Area G is only 3.6 miles from homes and only thirty meters from a public-access road in the Pajarito Reservation.[27] The SWEIS says that only eleven areas would receive more than one millirem per year under the Expanded Operations Alternative, but that the population at Pajarito, consisting of many low-income and minority persons, is at disproportionate risk for a maximally exposed individual to receive a dose of 4.39 millirem per year for seventy-two years.[28] This maximum dose is the third highest for any population within a fifty-mile radius of LANL.[29] The SWEIS does not explain how, given this exposure, it can be said that no disproportionate risk exists for these low-income and minority populations.

Of course, those who support the DOE's analysis might claim that the higher-income, non-minority populations in those two areas that have over twenty-five percent minorities within the first ten-mile radius of LANL shoulder enough risk so that the poor and minority populations in those areas do not bear disproportionate risk. The SWEIS, however, does not address this issue, perhaps because the poor populations are closest to LANL's hazardous materials.[30] As a result, the poor likely shoulder disproportionate risk, which would be evident if one superimposed concentric circles *within* the first ten-mile radius, nearest to farthest, around LANL. Then, the sectors nearest to LANL would actually reflect a

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and Corey Cruz, U.S. Dep't of Energy (July 15, 1998), *reprinted in id.* at 3-348, 3-373 (noting the environmental justice concern raised by the location of a waste dump adjacent to Pueblo sacred lands).

24. 1 SITE-WIDE EIS, *supra* note 10, at 5-69.

25. *See id.* at 3-56.

26. 2 SITE-WIDE EIS, *supra* note 10 at 1-23, 1-26.

27. *See id.* at 1-23; 3 SITE-WIDE EIS, *supra* note 10, at G-167.

28. *See* 1 SITE-WIDE EIS, *supra* note 10, at 5-115. Millirem are units of radiation exposure. *See id.* at 4-127.

29. *See id.* at 5-115.

30. *See supra* notes 23–25 and accompanying text.

concentration of minorities, which decreases farther away from the facility, and then increases again when more than ten miles away from the facility.[31]

Further questions may be raised as to whether the segmentation of the area around LANL, as divided by the DOE, provides a true reflection of the minority population. For instance, writing that the DOE "artfully uses statistics and data mischaracterizations," one commentator noted that the Pueblo of San Ildefonso, directly adjacent to LANL, is split into six separate sectors in such a manner that none of the sectors meets the criteria for low-income status, and two of the six are not considered minority.[32]

In addition, the SWEIS fails to adequately consider whether sections with a larger radius from LANL would be more appropriate for the environmental justice risk comparison. The SWEIS claims to have used the area within a fifty-mile radius of LANL for its environmental justice study,[33] but then explains that it used a much smaller area for comparative purposes.[34] Since the assessors concentrated on the smaller area for comparative analysis, they did not adequately consider disparities in the entire fifty-mile radius. This failure further discredits the agency's conclusions.

Yet another flaw in the SWEIS, perhaps even more troubling than those already described, is that it does not comprehend that it is disproportionate to have a greater percentage of minorities at risk than non-minorities. That is, the SWEIS asserts that no disproportionate risk for minorities exists under the Expanded Operations Alternative,[35] yet, by its own calculations, a disproportionate risk to minorities *does* exist if a fifty-mile radius is used to assess environmental justice.[36] As the SWEIS states, "Nearly 54 percent of the population within the 50-mile (80-kilometer) radius area is minority."[37] After recognizing this disparity, the SWEIS fails to explain how the DOE would "address as appropriate" this disproportionate risk to minorities in the fifty-mile radius.[38]

A comparison of figures helps to show the flaw in the DOE's analysis. Discussing the No Action Alternative, the SWEIS states that the maximally exposed individual within the fifty-mile radius would receive 13.59 person-rem per year of exposure to contaminants and that 0.0068 excess Latent Cancer Fatalities ("LCFs") would occur each year.[39] Under the preferred Expanded

31. For a break-down of demographic data by sector, see 1 SITE-WIDE EIS, *supra* note 10, at 4-152 to 4-154.

32. Letter from Ann Berkley Rodgers to Corey Cruz, *supra* note 23, at 3-84.

33. *See* 1 SITE-WIDE EIS, *supra* note 10, at 4-147.

34. *See supra* note 21 and accompanying text.

35. *See* 1 SITE-WIDE EIS, *supra* note 10, at 5-120.

36. *See id.* at 4-148 to 4-150.

37. *Id.* at 4-148.

38. *Id.* at 4-147. Clinton's executive order requires federal agencies to "address as appropriate," disproportionate impacts of federal programs. *See* Exec. Order No. 12,898, 59 Fed. Reg. 7629 (1994).

39. *See* 1 SITE-WIDE EIS, *supra* note 10, at 5-58.

Operations Alternative, the SWEIS found that the maximally exposed individual within the fifty-mile radius would receive 33.09 person-rem per year and that 0.017 excess LCFs would occur each year.[40] From these figures, one can easily calculate that 2.5 times the LCFs are estimated to occur for the population in the fifty-mile radius under the Expanded Operations Alternative than under the No Action Alternative (0.017 LCFs/year versus 0.0068). Assuming that any one of the minorities that make up the fifty-four percent of the population in the fifty-mile radius is equally at risk from radiation exposure as anyone else in the population—as the SWEIS repeatedly insists—then minorities are per se at a disproportionate risk under the preferred Expanded Operations Alternative. This contradicts the SWEIS's statement that minorities would not shoulder disproportionate risk.[41]

Of course, one might object that a fifty-mile radius is not appropriate or that the forty-six percent of the population that is non-minority carries enough risk so that there is no disproportionate risk to minorities. However, for the following reasons, such objections lack merit. First, if the fifty-mile area has significant risk associated with the expanded operation of the LANL facilities (2.5 times the risk by two types of measurements), then the fifty-mile radius is appropriate. Second, the SWEIS does not attempt to argue that the non-minorities comprising forty-six percent of the population shoulder more risk than the minorities comprising fifty-four percent of the population. Finally, because President Clinton's executive order states that disproportionate risks to minorities should be "address[ed] as appropriate,"[42] the DOE should address the disproportionate risk at the fifty-mile radius instead of simply waving it off. After all, more minorities are shouldering an increased risk under the Expanded Operations Alternative than are non-minorities.

B. Transportation Risks Near LANL

In addition to the many ways in which the SWEIS methodology masks the environmental justice issues for minorities living near LANL, it also masks these issues for those bearing transportation risks in connection with the operation of the facility. The SWEIS states:

> Accident risk[s] associated with waste disposal operations for all alternatives are essentially the same. This is because the accident frequencies are relatively insensitive to the differences in waste volumes across the alternatives and because the consequences of an accident are dependent on the amount of material involved in the accident (which changes very little across the alternatives), not the total amount of generated or disposed waste.[43]

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40. *See id.* at 5-115.
41. *See id.* at 5-120.
42. 59 Fed. Reg. at 7629.
43. 1 SITE-WIDE EIS, *supra* note 10, at 3-65.

However, the SWEIS is incomplete in this respect because it ignores the possibility that, although the accident *frequencies* (rates) may remain the same across alternatives, the DOE preferred alternative may increase the *number* of shipments, and a higher number of shipments would result in a higher number of accidents, given the same rate of accidents. According to the SWEIS, the preferred Expanded Operations Alternative "would increase onsite shipments substantially—to almost double the approximate 1,300 shipments per year under the No Action Alternative (due to greater waste generation under the Expanded Operations Alternative...)."[44]

Not only would there be an overall increased risk associated with expanding LANL operations, but the increase in transportation risk under the Expanded Operations Alternative likely would result in a disproportionate risk to low-income populations. The SWEIS notes that sixty-two percent of the Hispanic population in the fifty miles surrounding LANL resides within the transportation corridor of Highway 84/285.[45] Furthermore, much of the increased transportation (under the preferred Expanded Operations Alternative) would be on Highway 84/285. As the SWEIS states:

> [I]mpacts to [general] public health from transportation [of radiological and toxic materials] on the site and from LANL to U.S. 84/285 are estimated to be 0.0016 excess LCFs per year from incident-free transportation and 0.040 deaths or injuries per year from transportation accidents. Impacts from transportation on route segments that pass through minority or low-income communities (particularly the segment on U.S. 84/285 to I-25) are estimated to be 0.0016 excess LCFs per year from incident free transportation.... Therefore, no high and adverse impact is expected to a member of the general public or to a member of a minority or low-income population due to transportation in the vicinity of LANL.[46]

Thus, the SWEIS recognizes that impacts from transportation through minority or low-income communities will result in higher risks to those communities, but, by asserting that the risk is low overall, it fails to acknowledge that this higher risk is disproportionate.[47] In addition, the assertion that there are no environmental justice issues for the Expanded Operations Alternative is questionable; after all, the rate of 0.18 minority/low-income deaths or injuries per year is nearly double that of the general public's 0.082 deaths or injuries per year.[48]

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44. *Id.* at 3-64.
45. *See id.* at 4-148.
46. *Id.* at 5-71.
47. *See id.*
48. *See id.* at 5-120. The difference for the No Action Alternative is 0.090 minority deaths or injuries versus 0.040 for the general population. *See id.* at 5-71.

Some might claim that minority deaths would be greater than general public deaths simply because minorities comprise the greatest percentage of the population in the area, and that each minority individual shoulders the same risk as each non-minority. This objection is misguided, however, because disproportionate risk not only occurs when each individual of the low-income or minority populations shoulders more risk than each individual in the general public, but also when greater numbers of minority or low-income persons carry that risk. Moreover, as argued earlier, minority persons within a fifty-mile radius of LANL are at an overall disproportionate risk given two measurements of risk, LCFs/year and deaths or injuries for a population.[49] The SWEIS should have addressed whether non-minorities shoulder more risk overall than minorities in order to address whether that compensates for the potentially disproportionate transportation-related risk.

III. WHO WATCHES THE WATCHERS

What the LANL study reveals is that, although agencies may acknowledge percentages of minority populations that suffer increased mortality rates, discussions of environmental justice are meaningless if the authors simply assert, by fiat, that there are no problems with disproportionate impacts despite data that suggest the opposite. In fact, the LANL study discusses environmental justice, admits that minorities faced two to three times the risk of non-minorities in some areas, and then claims, without evidence, that there are no disproportionate impacts.[50] Unfortunately, the LANL analysis appears to be typical, in our experience, of the way in which assessors pay lip service to environmental justice issues. For example, the same type of analysis was used in the DOE environmental impact statement ("EIS") for the Hanford nuclear-waste site.[51] This EIS noted the adverse impacts faced by Native American reservations bordering the facility, then simply asserted, by fiat, that there were no disproportionate risks to the Native Americans.[52] The same analysis was used in the Nuclear Regulatory Commission's EIS for the proposed Homer, Louisiana, nuclear enrichment facility.[53] There, the authors noted that the surrounding, at-risk community was almost totally black, but then simply asserted that there was no disproportionate risk for the black community.[54] In short, federal government has mandated that agencies take environmental justice into account in their analyses, but it has not devised a way to

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49. *See supra* notes 35–39, 45–46 and accompanying text.

50. *See supra* notes 22–49 and accompanying text.

51. *See* U.S. DEP'T OF ENERGY, DRAFT HANFORD REMEDIAL ACTION ENVIRONMENTAL IMPACT STATEMENT AND COMPREHENSIVE LAND USE PLAN 5-219 to 5-224 (1996).

52. *See id.* at 5-222 to 5-224.

53. *See* U.S. NUCLEAR REGULATORY COMM'N, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CONSTRUCTION AND OPERATION OF CLAIBORNE ENRICHMENT CENTER, HOMER, LOUISIANA 4-34 to 4-35 (1994).

54. *See id.*

guarantee that the assessments do anything more than pay lip service to the goals of environmental justice.

How can government guarantee that environmental diagnosis and restoration will be responsive to actual problems—like environmental justice—that need to be remedied? Passing an executive order about environmental justice is not sufficient to ensure positive action. Missing is some sort of check or review of the impact statement or restoration plan itself. Missing also is someone to watch the government watchers engaged in environmental diagnosis and restoration.

IV. PROCEDURAL SAFEGUARDS AND ADVERSARY ASSESSMENT

What might such "watching" entail? In the case of guarding against environmental injustice, perhaps those in the best position to guard their own rights are the stakeholders themselves. And guarding their own rights seems to include at least three distinct elements: recognizing stakeholders' *equal status* with scientists in assessing environmental risks; recognizing stakeholders' *equal standing* with representatives of government regulatory agencies in using adversary decisionmaking; and recognizing that this equal assessment status and equal decisionmaking status requires *equal funding*.

Without ways to ensure good assessments of environmental justice and compliance with applicable orders and regulations, talking about environmental justice or environmental restoration is not productive. To neglect this practical side of the problem is like mandating free elections and then allowing vested interests to make virtually untrammeled campaign contributions. We as a nation have mandated consideration of environmental injustices,[55] but by ignoring stakeholders' equal status, equal standing, and need for equal funding, we have allowed vested interests untrammeled access to define environmental justice in any way they desire.

Consider the way in which money appears to be corrupting politics. As Senator John McCain of Arizona put it, "[W]e are the defenders of a campaign finance system that is nothing less than an elaborate influence peddling scheme in which both parties conspire to stay in office by selling the country to the highest bidder."[56] Speaking about the 1996 Telecommunications Act,[57] McCain said that every company affected by the legislation purchased a seat at the table with soft money, while consumers had no seat at the table.[58] In the 1997–1998 election cycle, managed-care providers gave "$1.49 million in soft money to national Republican Party committees."[59] Soon thereafter, Senate Republicans developed a

55. *See supra* notes 3–7 and accompanying text.

56. *See* Joan Claybrooke, *McCain's Campaign Finance Candor*, PUB. CITIZEN NEWS, Sept.-Oct. 1999, at 2. This publication is available at <www.citizen.org>.

57. 47 U.S.C. §§ 251–61 (Supp. III 1997).

58. *See* Claybrooke, *supra* note 56, at 2.

59. Steve Weissman, *How "Soft Money" Corrupts Public Policy*, PUB. CITIZEN NEWS Sept.-Oct. 1999, at 7.

bill that prevented patients from holding HMOs legally accountable for denial of necessary care.[60] In the 1997–1998 election cycle, oil and gas producers gave "$6.1 million in soft money to the Republican Party and $1.56 million to the Democratic Party."[61] Soon after, Congress voted to delay federal regulations forcing the oil producers to pay higher royalty fees to the government.[62] In 1997–1998, the tobacco industry contributed $4.6 million in soft money to Republican Party committees.[63] In June 1998, Senate Republicans killed proposed legislation to control the use of tobacco.[64] Also in 1998, the nuclear industry doled out $15.5 million to members of Congress who, in turn, supported relaxation of safety standards and transportation of nuclear waste to an unproven, risky "interim" dump in Nevada.[65] Since 1995, managed health care, casino gambling, and tobacco interests donated three times as much to the Republican Party as to the Democratic Party ($30 million versus $11 million), and in October 1999, for the fourth time in two years, Senate Republican leaders defeated campaign finance reform.[66]

Consider how the proposals of equal status, equal standing, and equal funding would help to level the playing field that is currently tilted by the money of large, vested interests. The equal status proposal is one that was advanced recently by the U.S. National Academy of Sciences ("NAS") in its 1996 report, *Understanding Risk: Informing Decisions in a Democratic Society*.[67] In its analysis, the NAS committee argued that sound assessment of environmental and public-health risks requires not only analysis by scientists but also deliberation by stakeholders, in part because of the unavoidable ethical dimensions of environmental problems.[68] However, giving stakeholders equal status in environmental assessment is not possible unless stakeholders also have equal funding to represent themselves and their interests. Even the academy report recognized the necessity of funding stakeholders if they are to represent themselves and hire others to represent them on issues of environmental risk.[69] It seems unrealistic to issue an executive order mandating environmental justice without providing financing to stakeholders to protect themselves against environmental injustices promoted by "deep pockets" of corporate money.

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60. *See id.*

61. *Id.*

62. *See id.*

63. *See id.*

64. *See id.*

65. *See Nuclear Industry Gave Congress $15 Million*, PUB. CITIZEN NEWS, May-June 1999, at 9.

66. *See* Steve Weissman & Bob Mentzinger, *Who is Corrupted? GOP Leaders Again Stop Campaign Finance Reform*, PUB. CITIZEN NEWS, Nov.-Dec. 1999, at 7.

67. NATIONAL RESEARCH COUNCIL, UNDERSTANDING RISK: INFORMING DECISIONS IN A DEMOCRATIC SOCIETY 23 (1996). The National Research Council is the institutional operating agency of the National Academy of Sciences. *See id.* at iv.

68. *See id.* at 139–40.

69. *See id.* at 140.

Recognizing stakeholders' equal status as assessors, and providing them with equal funding, will be effective only if there is, in addition to the regulatory-agency decisionmaking, some sort of adversary assessment and decisionmaking, such that stakeholders have equal standing in this process. Otherwise, the same vested interests that have protected big tobacco[70] and avoided campaign finance reform[71] will avoid environmental justice and environmental restoration.

The reason that additional legal mechanisms are needed to help ensure environmental justice and genuine restoration becomes clear when one considers the costs that environmental hazards force on citizens. Public risks typically impose at least three burdens on society: *costs of harm* (e.g., medical bills, pain); *costs of avoiding harm* (e.g., pollution-control mechanisms); and *transaction costs* incurred in allocating harm (e.g., litigation, negotiation, and regulation). If there were no transaction costs, then society could allocate resources so as to minimize the sum of the costs of harm and of avoiding harm altogether. In such a situation, the party imposing risk or damage would have to strike a bargain with the (potential) victims that would lead to an economically efficient outcome.[72] Since our society has transaction costs, however, our laws often lead to economically inefficient outcomes, favoring those who impose risks, rather than those who are the victims of those risks. This is because risk and harm are not penalized until the damage to individuals exceeds the transaction costs, e.g., exceeds the costs of the victims initiating litigation. The net effect is that high transaction costs (often caused by scientific uncertainty) beset attempts to ensure compliance with environmental justice and with requirements of restoration. The result is an inefficient and unethical allocation of resources.[73]

Another difficulty is that regulation by administrative agencies, such as the Environmental Protection Agency or the Nuclear Regulatory Commission, often fails to protect victims of environmental injustice or victims of restoration noncompliance. This is what happened, for example, in the case of the Atomic Energy Commission ("AEC"); the agency was so embroiled in lawsuits as a result

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70. *See* Lynn Mather, *Theorizing About Trial Court: Lawyers, Policymaking, and Tobacco Litigation*, 23 LAW & SOC. INQUIRY 897, 898 (1998) ("Cigarette makers retain significant financial and political clout, and they may have succeeded in pushing tobacco issues to the back burner...."). *See also* Weissman, *supra* note 59, at 7 (noting that Senator McCain has, in part, attributed the defeat of legislation that would control the use of tobacco "to the [tobacco] industry's use of contributions as 'protection money'").

71. *See* Editorial, *Vermont's Bid for Better Politics*, BOSTON GLOBE, Apr. 6, 1997, at D6 (noting that "members of Congress and the President look for ways to avoid action on campaign finance reform..."). *See also* Claybrooke, *supra* note 56, at 2.

72. *See* JUDITH J. THOMSON, RIGHTS, RESTITUTION, AND RISK 157–59 (1986); Jeffrey Trauberman, *Statutory Reform of "Toxic Torts": Relieving Legal, Scientific, and Economic Burdens on the Chemical Victim*, 7 HARV. ENVTL. L. REV. 177, 177–249 (1983).

73. *See* Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and "Fine-Tuning" Regulatory Reforms*, 37 STANFORD L. REV. 1267, 1309, 1329–30 (1985); Trauberman, *supra* note 72, at 187.

of catering to vested interests that it had to be abolished in 1975.[74] An additional problem with regulatory agencies is that control is often fragmented among several different commissions. In the case of federal authority over toxic chemicals, the number of agencies responsible for regulation is certain to create confusion, inefficiency, and inconsistency.[75] Further, regulatory agencies typically have insufficient funds to bring lawsuits in more than a few of the cases that ought to be tried.[76] Since current regulations do not encourage private-sector research on avoiding unknown environmental dangers, only the government is able to determine the responsibilities of those who impose risks on the public. Given the problems associated with private damage actions and administrative regulations, it is safe to conclude that government and law have not been as effective as they might have been in reducing the societal costs of environmental injustice and environmental restoration.

What are some ways to avoid high transaction costs? One proposal is that anyone suffering from a particular environmentally-induced disease who was exposed to a certain substance (e.g., asbestos) at a specified level and for a particular duration should be presumed to have established that the substance caused the disease.[77] Such a presumption, already used in settling black-lung cases, would help reduce both the plaintiff's burden of proof and the current problem, for example, of having over 10,000 plaintiffs all filing suit for asbestos-related injuries.[78] It would avoid a situation in which courts and litigants spend time and money dealing with identical issues.[79] An analogous system might work for cases of environmental injustice.

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74. *See* KRISTIN SHRADER-FRECHETTE, NUCLEAR POWER AND PUBLIC POLICY: THE SOCIAL AND ETHICAL PROBLEMS OF FISSION TECHNOLOGY 11–12 (1983). *See also* Louis A. Cox, Jr. & Paolo F. Ricci, *Legal and Philosophical Aspects of Risk Analysis*, *in* THE RISK ASSESSMENT OF ENVIRONMENTAL AND HUMAN HEALTH HAZARDS: A TEXTBOOK OF CASE STUDIES 1017, 1017–46 (Dennis J. Paustenbach ed., 1989).

75. *See e.g.*, Protection of Environment, 40 C.F.R. § 256.50 (2000) (requiring that a minimum of eight federal agencies work together to implement various legislative acts that deal with environmental issues, including the Toxic Substance Control Act, 15 U.S.C. §§ 2601–92 (1994 & Supp. IV 1998)).

76. *See* Elizabeth Rae Potts, Comment, *A Proposal for an Alternative to the Private Enforcement of Environmental Regulations and Statutes Through Citizen Suits: Transferable Property Rights in Common Resources*, 36 SAN DIEGO L. REV. 547, 553 (1999) ("[A]gency enforcement [of environmental statutes]...is under-utilized because of budget considerations....[Congress] do[es] not appropriate enough funds to regulate and enforce these statutes.").

77. *See* Trauberman, *supra* note 72, at 234–36.

78. *See id.*

79. *See* THOMSON, *supra* note 72, at 194, 211–12; Trauberman, *supra* note 72, at 235–36.

V. INFORMED CONSENT AND CITIZEN NEGOTIATION

To some extent, protecting those who are most vulnerable to environmental risks, such as those who work with toxic chemicals or who live near facilities that produce them, is a matter of guaranteeing free, informed consent to public and occupational hazards. To achieve *explicit* consent, however, we need actual citizen participation in *negotiating* solutions for problems of environmental injustice and environmental restoration.

If the purpose of negotiation is to defuse highly politicized risk situations, so as to insure citizens' *free* informed consent, then negotiation will need to presuppose that several conditions have been met. First, ideally, the bargaining parties ought to be roughly equal in political and economic power, in order to ensure free, procedurally just transactions. This means that both citizens and industry groups need equal funding to obtain access to experts, attorneys, and staff assistance. In particular, citizens need to have access to taxpayer monies to fund their negotiations so that they will not be disadvantaged in bargaining with industry. Second, negotiation ought to involve consideration of alternative points of view, different evaluative assumptions, and a variety of risk methodologies. Such considerations would be facilitated by the fact that government would fund the completion of alternative assessments and hazard-management plans. This would help to ensure that all sides to a controversy were represented and well informed. Third, the negotiation process should not be controlled by a regulatory agency with discretionary powers, but by a group of citizens and experts with no conflict of interest with respect to the risk issues under consideration. Hence, unlike regulatory and administrative decision-making, the negotiation would be less likely to be co-opted by unrealistic environmentalists or by unscrupulous industry representatives.

Since there are a number of different models of risk participation and negotiation within local communities,[80] we shall not attempt to defend a particular one here. Nor shall we answer various questions that might arise in a given model, e.g., who should negotiate and how they should be chosen. Those tasks are better left to policymakers, arbitrators, and sociologists.[81]

VI. ADVERSARY ASSESSMENT

Perhaps one of the most disturbing objections to negotiation is that it presupposes a benign and cooperative regulatory climate. Yet, if those who disagree about, or will not comply with, environmental restoration will not cooperate, then negotiation will not work. As one legal expert put it, "As long as

80. *See* A. Dan Tarlock, *State Versus Local Control of Hazardous Waste Facility Siting: Who Decides in Whose Backyard?*, *in* RESOLVING LOCATIONAL CONFLICT 137, 151–53 (Robert W. Lake ed., 1987).

81. *See, e.g.*, Sam Gusman, *Selecting Participants for a Regulatory Negotiation*, 4 ENVTL. IMPACT ASSESSMENT REV. 195, 195–202 (1983).

great interests are at stake and the goals of the major actors are incompatible, which are common characteristics of environmental disputes, there is no reason to doubt that participants would manipulate negotiations and would pursue post-negotiation remedies whenever that behavior is privately advantageous."[82]

If either party to a negotiation sees that more is to be gained from formal legal proceedings or obstructionist tactics than from negotiation, then that party will abandon negotiation. If so, then the only alternative is to use some sort of adversary proceeding. The precedent for adversary assessment of societal risks has been set by a number of citizen panels throughout the country. These are composed almost entirely of lay people, not scientists, and many of them are responsible, for example, for the formulation and enforcement of scientific research guidelines.[83] City councils in Cambridge, Massachusetts, San Diego, and Ann Arbor, for instance, have taken a number of initiatives in forming such citizen boards.[84] In Cambridge, the City Council gave its City Manager the power to appoint a citizen review board to evaluate the safety procedures required by the National Institute of Health for recombinant DNA research.[85] Both the City Council and the City Commissioner unanimously approved the recommendations of the citizen review board.[86]

Even from this brief account of adversary proceedings, it is reasonable to believe that they would provide several benefits over the current system of decisionmaking regarding societal risk. First, an adversary system would require that funding be given to all sides involved in a controversy. Second, the adversary proceedings would make consideration of alternative positions a requirement of democratic decisionmaking, rather than a luxury accessible only to those financially able to participate in administrative hearings or legal appeals. Third, unlike administrative and regulatory hearings, as well as negotiations, adversary procedures would be decisive. They would also be less likely to be co-opted by environmentalists or developers with vested interests, since they would not be dominated by a regulatory agency capable of exercising discretionary powers.

VII. CONCLUSION

There are no federal statutes requiring negotiation with, and compensation for, potential victims of all forms of environmental injustice. Currently, negotiation and compensation are not *rights* guaranteed by due process, but *privileges* accessible only to the wealthy. In practice, these privileges often are

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82. Latin, *supra* note 73, at 1295.

83. *See* K. GUILD NICHOLS, ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, TECHNOLOGY ON TRIAL: PUBLIC PARTICIPATION IN DECISION-MAKING RELATED TO SCIENCE AND TECHNOLOGY 99 (1979). The OECD was organized in Paris in 1960. *See id.* at 2.

84. *See id.* at 99.

85. *See id.*

86. *See id.* at 100.

limited to those who are able to bear the transaction costs associated with adjudication through tort law. The whole point is that public consent to and control over environmental injustice and environmental restoration are not the prerogatives of the rich, but the rights of all.