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Nuclear Waste in Indian Country: A Paradoxical Trade¹

Nancy B. Collins* & Andrea Hall**

In the colonial and neocolonial alchemy, gold changes to scrap metal and food into poison . . . [We] have become painfully aware of the mortality of wealth which nature bestows and imperialism appropriates.²

Introduction

A radiological revolution occurred in the United States a half century ago, marking the beginning of nuclear production on this planet. Nuclear energy begins with the mining of uranium and

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^{**} B.A. Trinity University, 1988; J.D. University of Richmond, 1993.

^{1.} The dialogue which inspired this article began in Professor Collins' seminar "Toxic Waste in Indian Country" at the University of Richmond Law School in the Spring of 1992. Funded by the law firm of Allen, Allen and Allen in Richmond, Virginia, the Allen Chair Seminar brought four outstanding Native American scholars, writers, and activists to co-teach the course with Professor Collins. We were honored to have W. Richard West, Jr., Cheyenne-Arapho, and Founding Director of the National Museum of the American Indian at the Smithsonian Institution; Robert A. Williams, Jr., Lumbee, and Professor of Law and American Indian Studies, University of Arizona; Paula Gunn Allen, Laguna Pueblo and Sioux, author, poet, critic, and Professor of English at University of California - Los Angeles; and David Harrison, Osage, former Associate Director of the Council of Energy Resource Tribes. Our ideas have been influenced by these caring scholars and teachers and by the seminar students. Professor Collins also thanks Professors Jonathan Stubbs, Mary Churchill, and Okianer Christian Dark, and Muriel Pascal, Randy Janey, and members of the Black Law Student Association and the Multi-Ethnic Law Student Association who cherish with her the dream that the law will begin to speak to (not about) people of color and listen to and serve their values and needs.

^{2.} EDUARDO GALEANO, THE OPEN VEINS OF LATIN AMERICA: FIVE CENTURIES OF THE PILLAGE OF A CONTINENT 12-13 (1973), quoted in Ward Churchill & Winona La-Duke, Radioactive Colonization and the Native American, 15 Socialist Rev., Mar./June 1985, at 95. In this article we have italicized the words of Native Americans involved in the nuclear debate in order to highlight individuals speaking in their own voices.

ends with the disposal of radioactive waste.³ For over fifty years the United States has mined, milled, and used radioactive material, creating and stockpiling waste at every step in the process.⁴ Yet until the 1980s, neither the United States government nor private utilities had a strategy for the long-term storage or permanent disposal of nuclear waste.⁵

Now, the nation's 111 operating commercial nuclear reactors are running out of storage space for high-level nuclear waste, 6 while permanent nuclear storage facilities are still a generation away from completion. 7 Consequently, the federal government is frantically searching for temporary high-level nuclear waste storage facilities. Indian nations are among the primary candidates.

Indian nations have been and continue to be inextricably bound up with the United States' nuclear development. The United States, like other nations, exploits the uranium resources found on lands retained by aboriginal communities.⁸ The path of nuclear mining and milling in the United States has led repeatedly across Indian country,⁹ leaving a legacy of nuclear waste and contamination.¹⁰ Today, in its quest to rid the nation of stockpiles of highly

^{3.} Peter C. Monson, Comment, Radioactive Air Pollution from Uranium Mining: Regulatory Abdication in the Face of Scientific Uncertainty, 13 ENVTL. L. 545, 548 (1983) (chart illustrating the stages in the nuclear fuel cycle).

^{4.} The first atomic reactor was built in 1942. See Energy Future: Report of the Energy Project at the Harvard Business School 140 (R. Stobaugh & D. Yergin eds., 1983) [hereinafter Energy Future.].

^{5.} See, e.g., Eric Charles Woychik, California's Nuclear Disposal Law Confronts the Nuclear Waste Management Dilemma: State Power to Regulate Reactors, 14 Envil L. 359, 361 n.2 (1984) ("After more than twenty years of commercial nuclear power, the Federal Government has yet to develop a broadly supported policy for fulfilling its legal responsibility for the final isolation of high-level radioactive waste." (quoting Office of Technology Assessment, U.S. Congress, Managing Commercial High-Level Radioactive Waste: Summary 9 (1982))).

^{6.} Bob von Sternberg, NSP Nuclear Waste Needs Called Typical, STAR TRIB. (MINNEAPOLIS), June 17, 1992, at 1B.

^{7.} Dunstan McNichol, Doubts on Permanent Nuclear Dump Worry NSP, STAR TRIB. (MINNEAPOLIS), Apr. 1, 1992, at 11A.

^{8.} Wm. Paul Robinson, Uranium Production and Its Effects on Navajo Communities Along the Rio Puerco in Western New Mexico, in Race and the Incidence of Environmental Hazards: A Time for Discourse 153, 154 (Bunyan Bryant & Paul Mohai eds., 1992) [hereinafter Race]. Radiological colonization of the lands of indigenous peoples is not limited to the United States. A significant proportion of the world's uranium resources is exploited on land still retained by aboriginal or other land-based communities. Id.

^{9.} Robinson, in RACE, supra note 8, at 154.

^{10.} See, e.g., Mill Tailings Dam Break at Church Rock, New Mexico: Hearings Before the Subcomm. on Energy and the Environment of the House Comm. on Interior and Insular Affairs, 96th Cong., 1st Sess. 1 (1979) (statement of Rep. Udall, Subcommittee Chairman).

radioactive waste from civilian nuclear power plants, the federal government once again turns to Indian country.¹¹

In 1980, Congress decreed that the federal government would take title to all the nation's high-level civilian nuclear waste. In the Nuclear Waste Policy Act (NWPA), 12 Congress developed a strategy for the ultimate disposal of high-level civilian nuclear waste in one or more primary repositories. 13 Over a decade later, Congress has been unable to select sites, stalling plans for the transportation of nuclear waste from a multitude of current unsafe resting places. The Nuclear Waste Negotiator has conducted negotiations to put the temporary storage site, or Monitored Retrievable Storage (MRS) facility, 14 on the sovereign homelands of Native Americans.

One potential result of the government's policies is that people of color, having little political power, may bear the burden of an environmental problem that belongs to the entire nation. While justice requires an equitable distribution of both the benefits and the burdens of nuclear power, such distribution is arguably not part of the current nuclear waste disposal proposals. By removing waste and its burdens to remote Indian land, benefits will accrue to the entire nation, relieving other communities of the dangers of nuclear waste.

^{11.} Bob von Sternberg, U.S. Has Deals for States, Tribes that Will Store Waste, Star Trib. (Minneapolis), Sept. 15, 1991, at A14. A similar phenomenon is documented in developing countries. Since 1986, the United States and Europe have exported waste to at least eleven developing countries. Grant L. Krantz, Implementing the Basel Convention into U.S. Law: Will it Help or Hinder Recycling Efforts?, 6 B.Y.U. J. Pub. L. 323 (1992). Most developing countries lack regulatory and technical measures to deal with hazardous waste. Stephen Johnson, The Basel Convention: The Shape of Things to Come for United States Waste Exports?, 21 Envil. L. 299, 300 (1991). Waste exporters may not adequately inform developing countries of the potential risks associated with the waste. Id. For example, in 1988, a Norwegian shipping company dumped 15,000 tons of waste on an island in Guinea. West Africa in Toxic Waste Dumping Furor: Foreign Deals Protested. Facts on File, World News Digest, Aug. 12, 1988, at 584. The waste was fraudulently termed "raw material for bricks," and was later identified as incinerator ash from Philadelphia. Id.

^{12.} Nuclear Waste Policy Act of 1982, Pub. L. No. 97-425, 96 Stat. 2201 (1982) (codified as amended at 42 U.S.C. §§ 10101-10226 (1988 & Supp. IV (1992)) [hereinafter NWPA]. The NWPA includes three additional types of limited, specialized facilities for high-level civilian nuclear waste: test and evaluation facilities, interim storage facilities, and demonstration facilities. All are limited-purpose facilities with narrowly defined functions and have limited durations. They are not intended as an alternative for long-term storage. Nicholas Kirkpatrick Brown, Monitored Retrievable Storage Within the Context of the Nuclear Waste Policy Act of 1982, 52 Tenn. L. Rev. 739, 745 n.48 (1985).

^{13. 42} U.S.C. §§ 10131-10145 (1988 & Supp. IV 1992).

^{14. 42} U.S.C. §§ 10161-10169 (1988); Notice, 50 Fed. Reg. 16,536-37 (1985) (announcement of proposed candidate sites). For a discussion of the MRS facility, see infra notes 123-24 and accompanying text.

^{15.} See generally RACE, supra note 8.

Native American nations must balance the potential economic benefits of the waste trade against the potential environmental harm of nuclear waste storage. This balancing requires that they have accurate information concerning the risks and benefits of accepting the waste. It also requires that the Indian nations have viable economic alternatives to participation in the nuclear waste trade.

It may be to the advantage of the United States to have an Indian nation take control of its nuclear waste, as some in the process have argued. Indians could use their wisdom and knowledge, and principles of "planning for the seventh generation" to assure safe control of the waste. However, no proposal would give Indians the right to exercise actual control over nuclear waste. Under the current nuclear waste siting law, the federal government retains control over nuclear waste in Indian country, not Indian nations. The government would essentially use Indian lands as its long-term parking lot for the nation's nuclear waste on its trip to a permanent disposal site. 19

The essence of the proposed waste agreement is land for money. Since most tribes are land-rich and money-poor, some tribes may decide to exercise its right to accept the bargain. The exchange of Indian land for the federal government's money or promises has defined tribal - U.S. relations since the founding of this nation.²⁰

Because of the Indians' great care and regard for Nature's resources, Indians are the logical people to care for the nuclear waste. Radioactive materials have half-lives of thousands of years [and] it is the Native American culture and perspective that is best designed to correctly consider and balance the benefits and burdens.

Elmer Savilla, The Nuclear Negotiator: Mr. Deep Pockets, News From Indian Country, Mid-March 1992, at 8.

^{16.} David Leroy, the former U.S. Nuclear Waste Negotiator, was quoted as saying:

^{17. &}quot;Planning for the seventh generation" is one of the principles shared by many Indian nations. The belief is that a people must act not solely for its own present interests but also in the interests of its future generations. See I HAVE SPOKEN: AMERICAN HISTORY THROUGH THE VOICES OF THE INDIANS (Virginia Irving Armstrong ed., 1971).

^{18.} James L. Huffman, An Exploratory Essay on Native Americans and Environmentalism, 63 U. Colo. L. Rev. 901, 912-13 (1992).

^{19.} Rudy Abramson, Seeking a Foster Home for Nuclear Waste, L.A. TIMES, June 9, 1992, at A5.

^{20.} See Worcester v. Georgia, 31 U.S. (6 Pet.) 515 (1832); Cherokee Nation v. Georgia, 30 U.S. (5 Pet.) 1 (1831); Johnson v. M'Intosh, 21 U.S. (8 Wheat) 543 (1823); ROBERT A. WILLIAMS, JR., THE AMERICAN INDIAN IN WESTERN LEGAL THOUGHT: THE DISCOURSES OF CONQUEST (1990) [hereinafter Williams, Discourses of Conquest]; Robert A. Williams, Jr., The Algebra of Federal Indian Law: The Hard Trail of Decolonizing and Americanizing the White Man's Indian Jurisprudence [hereinafter Williams, Algebra], 1986 Wis. L. Rev. 219.

A. Objectives and Organization

In negotiating nuclear waste siting, knowledge can be a tool or a weapon.²¹ This article attempts to clarify the law and its history of enforcement in order to shed light on the hard decisions facing Indian peoples considering the nuclear waste trade.²² The history of nuclear waste buildup and disposal law, as well as the history of enforcement of treaties and current environmental statutes in Indian country, are both relevant. This analysis stresses the crucial differences between Indian peoples and other communities where this waste may be disposed of—differences of history, genocide, sovereignty, and law.

This article focuses on the potential siting of the MRS on tribal lands, the article first considering the paradoxes inherent in this siting debate. It then briefly describes the development of nuclear power in the United States and outlines the statutory scheme for nuclear waste disposal under the Nuclear Waste Policy Act. The second part of the article focuses on the history of radioactive colonization of Indian lands. It discusses principles of environmental equity and tribal sovereignty and how the two areas influence the siting of nuclear waste. Finally, the article examines whether Indian nations will be treated as the equals of states in the nuclear waste siting process. This question of equal treatment requires exploring the question of federal and Indian preemption in order to ascertain whether a tribe will have an enforceable right to host the MRS over the objections of a contiguous state.

^{21. &}quot;Thorough knowledge was what was always required to live by for Indian people; . . . [it] has been kept in some hidden place and has been used as controlling power." Simon Ortiz, Fight Back: For the Sake of the People for the Sake of the Land, 1 INAD LITERARY J. 61, 63-64 (1980) (referring to the U.S. government's dissemination of information concerning the hazards of nuclear testing). Knowledge is essential if sovereign nations are to make informed environmental decisions. Gerald Torres, Introduction: Understanding Environmental Racism, 63 U. Colo. L. Rev. 839, 844 (1992). See generally Kevin Gover & Jana L. Walker, Escaping Environmental Paternalism: One Tribe's Approach to Developing a Commercial Waste Disposal Project in Indian Country, 63 U. Colo. L. Rev. 933 (1992) [hereinafter Gover & Walker, Escaping Environmental Paternalism].

^{22.} It is the rights of indigenous peoples, not indigenous people, which demand our concerns. As Indian educator, activist, and Director of the Morningstar Foundation, Susan Harjo, points out "peoples are entitled to group or national rights, such as sovereignty. People, on the other hand, are entitled to individual and human rights... Dropping the 's' is not simply a grammatical matter." Roberto Rodriguez, Is U.N. Year of Indigenous People' a Missed Opportunity?, BLACK ISSUES IN HIGHER EDUC., Mar. 11, 1993, at 22.

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B. Paradoxes of Nuclear Waste Disposal in Indian Country

Three interrelated paradoxes embody the legal, political, and ethical dilemmas of nuclear waste disposal in Indian country. First, the paradox of good and evil infuses most discussions of nuclear power. Few topics generate as much angry political debate as nuclear energy. Proponents and opponents of military and civilian atomic energy are both entrenched and vociferous. Nuclear energy provides a source of power of indescribable proportions, whether harnessed for civilian use or unleashed for military deterrence.23 Fear of a nuclear accident dominates the thinking of nuclear opponents, who argue strongly that both use and disposal of nuclear materials are fraught with danger.24 Proponents of nuclear energy, on the other hand, consider these views alarmist. They argue that nuclear energy is safe and that nuclear waste disposal will soon be among the nation's safest industries.²⁵ However, the potential for disaster from a nuclear waste accident or long-term release is inestimable.²⁶ Nuclear power at its best is positive and transformative. On the other hand, its production is one of the most dangerous processes on earth. There are hazards involved in mining, milling, power production, and waste disposal.²⁷ The paradox of nuclear energy is heightened by the absence of any permanent means of disposing of massive amounts of nuclear waste.28 Perhaps the one

^{23.} The spill of one load of nuclear waste would contain many times the radioactivity released by the bomb at Hiroshima. Safe Energy Communication Council, Myth Busters #2: Nuclear Waste Disposal (Winter 1988) [hereinafter Myth Busters] (citing Marvin Resnikoff, Council on Economic Priorities, The Next Nuclear Gamble: Transportation and Storage of Nuclear Waste 19 (1983)). Proponents of nuclear power assert that the nuclear power industry is safe. See Office of the Nuclear Waste Negotiator, An Invitation for Dialogue and Participation (1991) [hereinafter Invitation for Dialogue]. Information can be obtained from the Office by writing or calling: P.O. Box 777, Boise, Idaho 83777; (208) 334-9876; FAX (208) 334-9880.

^{24.} See, e.g., Jorge Contreras, In the Village Square: Risk Misperception and Decisionmaking in the Regulation of Low-Level Radioactive Waste, 19 Ecol. L.Q. 481, 507 (1992) (discussing the perception that radioactive waste is "somehow unique, more dreadful than other industrial dangers"). Moreover, the incident at the Three Mile Island nuclear power reactor located near Harrisburg, Pennsylvania, which resulted in a partial meltdown of the reactor core, generated substantial public concern. See Energy Future, supra note 4, at 135.

^{25.} See Invitation for Dialogue, supra note 23.

^{26.} See Myth Busters, supra note 23.

^{27. &}quot;Mine waste remains the largest category [of nuclear waste] as well as potentially the greatest problem, but it is essentially unaddressed by federal regulatory programs." Charles H. Montange, Federal Nuclear Waste Disposal Policy, 27 Nat. Resources J. 309, 310 (1987). See id. at 313-57 (discussing mine waste and uranium mill tailings).

^{28.} See infra notes 68-69 and accompanying text.

thing nuclear opponents and proponents can agree on is that we need a safe, permanent storage space for the waste. Despite the consensus, after over a decade of searching, the federal government still has not found anyone willing to accept this civilian nuclear waste.

The second paradox involves the complex status of Indian tribes as sovereign nations within the United States. Native American nations are both sovereign²⁹ and dependent,³⁰ both governors and governed, and both free of state control³¹ and subject to it.³² Recognized as sovereigns under Article I of the Constitution, tribes today retain their sovereignty. Indian nations, however, are considered "dependant sovereigns" and wards of the United States.³³ Congress has plenary power to limit tribal sovereignty and treaties made pursuant to it.³⁴ Congress also has the right to grant states power over aspects of Indian life.³⁵ When considering political deci-

^{29.} Indian tribes are sovereigns predating the U.S. Constitution so they retain common-law sovereign immunity from suit absent a clear waiver by the tribe or express congressional abrogation. Santa Clara Pueblo v. Martinez, 436 U.S. 49, 58 (1978) ("[tribes are] long recognized as possessing the common-law immunity from suit traditionally enjoyed by sovereign powers").

^{30.} Worcester v. Georgia, 31 U.S. (6 Pet.) 515, 541 (1832) (referring to Native American nations as "domestic dependant" nations); Walter E. Stern, Environmental Compliance Considerations for Developers of Indian Land, 27 Land & Water L. Rev. 77, 87 (1993).

^{31.} Generally, there exist "two independent but related barriers to the assertion of state regulatory authority over tribal reservations and members": preemption by operation of federal law, and impermissible infringement "on the right of reservation Indians to make their own laws and be ruled by them." White Mountain Apache Tribe v. Bracker, 448 U.S. 136, 142 (1980) (quoting Williams v. Lee, 358 U.S. 217, 220 (1959)).

^{32.} For example, in 1953 Congress enacted Public Law 280 which transferred criminal jurisdiction and certain civil jurisdiction over Indian country to the state government in five states. Act of Aug. 15, 1953, ch. 505, Pub. L. No. 83-280, 67 Stat. 588. Later, states were authorized to assume jurisdiction over Indian territories at their option. See 25 U.S.C. §§ 1321-1325 (1988 & Supp IV 1992). In 1988, Alaska also received jurisdiction over the Indian territories located within its boundaries. See 18 U.S.C. § 1162 (1988 & Supp. IV 1992) and 28 U.S.C. § 1360 (1988). Section 4 of the Act provides "those civil laws of such State that are of general application to private persons or private property shall have the same force and effect within such Indian country as they have elsewhere within the State." 28 U.S.C. § 1360(a) (1988).

^{33.} Cherokee Nation v. Georgia, 30 U.S. (5 Pet.) 1, 17 (1831); Worcester, 31 U.S. at 541.

^{34.} See, e.g., Cotton Petroleum Corp. v. New Mexico, 490 U.S. 163, 192 (1989) ("the central function of the Indian Commerce Clause is to provide Congress with Plenary power to legislate in the field of Indian affairs"); Irene Harvey, Note, Constitutional Law: Congressional Plenary Power Over Indian Affairs—a Doctrine Rooted in Prejudice?, 10 Am. Indian L. Rev. 117 (1982); Milner S. Ball, Constitution, Court, Indian Tribes, Am. B. Found. Res. J. 1, 46-57; Williams, Algebra, supra note 20, at 260-65

^{35.} Carole E. Goldberg, Public Law 280: The Limits of State Jurisdiction Over Reservation Indians, 22 UCLA L. Rev. 535 (1975); see infra notes 449-72 (discussing state/tribal sovereignty issues); Johnson v. M'Intosh, 21 U.S. (8 Wheat.) 543 (1823);

sions on Indian land, one must look at the complex relations of three separate sovereigns: federal, tribal, and state.³⁶

Third, the nuclear waste trade presents a pivotal paradox for Native American peoples: the clash between the nuclear waste trade's potential for economic development and self-determination, and its antithetical potential for destruction of Indian land, harmony, values, and even tribal existence. The essence of a tribe's sovereignty is land-based.³⁷ By contrast, dominant American society is essentially nomadic. If land is destroyed or devalued, or if the economy of an area is weakened, other Americans simply move to greener pastures. For non-Indians, legal rights are not dependant upon the existence of a homeland. For a tribe to survive, many of its members must remain on the reservation and the tribe must maintain enough jobs to employ the next generation on the reservation.38 If Indian land is rendered uninhabitable or economically unproductive, the tribe becomes homeless.³⁹ The land-based sovereignty of Indian nations is the key to both the need for economic development from the waste trade and the countervailing potential for the destruction of sovereign lands and peoples.

Compensation for accepting nuclear waste could provide an Indian nation with economic strength, income for education and health-care, and jobs for the next generation.⁴⁰ These are tools for

Cherokee Nation v. Georgia, 30 U.S. (5 Pet.) 1 (1831); Worcester v. Georgia, 31 U.S. (6 Pet.) 515 (1832).

^{36.} On the issue of intergovernmental sovereignty issues, see Frank Pommersheim, *Tribal-State Relations: Hope for the Future?* 36 S.D. L. Rev. 239 (1991) [hereinafter Pommersheim, *Tribal-State Relations*].

^{37.} A. Dan Tarlock, Environmental Protection: The Potential Misfit Between Equity and Efficiency, 63 U. Colo. L. Rev. 871, 871-83 (1992); see, e.g., Improvement of the American Indian Religious Freedom Act: Hearings on S 2250 before the United States Senate Select Comm. on Indian Affairs, 100th Cong., 2d Sess. 231 (1988) (affidavit of Kee Shay, member of Navajo tribe of Arizona, testifying as to the spiritual ties Navajo (Dineh) have to their land) ("We cannot make prayers at any spring or rock, only the ones where we know the spiritual beings. These places are sacred to us. We cannot practice our religion anywhere else.").

^{38.} Miller Hudson, Mescalero MRS Project Information Director, The Mescalero Apache Tribe's Approach to MRS Benefits Negotiation, Address before the National Conference of State Legislatures' Legislative Working Group on Monitored Retrievable Storage, in Williamsburg, Virginia 3-4 (Nov. 19, 1992) (press release available from Mescalero Apache Tribe, Mescalero, NM 88340); Personal Communication with Robert Williams, Allen Chair Professor, T.C. Williams School of Law (Apr. 10, 1992).

^{39.} Nancy Hovis, Tribal Involvement Under The Nuclear Waste Policy Act of 1982: Education by Participation, 3 J. Envil. L. & Lit. 45, 49, 55 (1988) (recognizing that "a major release of nuclear materials on the reservation would leave them homeless").

^{40.} See generally Gover & Walker, Escaping Environmental Paternalism, supra note 21 (discussing potential benefits for Indian reservations of waste disposal on Indian lands).

self-determination and are necessary for tribes to escape economic domination by the U.S. government, to regain tribal power, and to preserve the tribe for future generations. Many see the nuclear waste trade as a basis for attracting industry and for strengthening the tribal infrastructure.⁴¹ Moreover, the government promises that the waste will be safe;⁴² and promises that it will be removed in 40 years.⁴³

Yet locating a nuclear storage facility on or near an Indian reservation can have grave potential consequences to the viability of its culture.⁴⁴ Accidents, releases, or sabotage could turn the reservation into a vast wasteland and could threaten tribal destruction or genocide.⁴⁵ Ultimately, the issue turns on economic development: without income and jobs, the survival of the tribe is at risk. However, the economically rich crop of nuclear waste carries with it a remote but real risk of annihilation of the tribe. In the end, some believe that even the economic benefits will prove to be illusory. Many Native Americans are extremely skeptical that accepting waste in Indian country will actually result in real economic advantage.

Many projects come and go, all accompanied by big promises, but few Indians have gotten richer from them. That history is a powerful argument for Indian environmentalists. The reasoning goes like this: not only is the project in question ecologically disastrous, but everyone knows we won't ever see a dime from it. 46

The paradoxical nature of the debate divides Native Americans. Within Indian country there are voices, like those of some Mescalero Apache leaders, calling out to the nation to send waste trade onto their lands.⁴⁷ At the same time other voices within the

^{41.} Gover & Walker, Escaping Environmental Paternalism, supra note 21, at 935-36.

^{42.} See Office of Civilian Radioactive Waste Management, U.S. Dep't of Energy, A Monitored Retrievable Storage Facility: Technical Background Information 11 (1991), in Invitation for Dialogue, supra note 23.

^{43.} See infra § 3b (discussing MRS).

^{44.} See Hovis, supra note 39, at 49.

^{45.} See Williamson B.C. Chang, The "Wasteland" in the Western Exploitation of "Race" and the Environment, 63 U. Colo. L. Rev. 849 (1992) (discussing the potential of slow genocide resulting from environmental decisions).

^{46.} Margaret L. Knox, Their Mother's Keepers, Sierra, Mar./Apr. 1993, at 57.

^{47.} In a letter to the members of the Mescalero Apache tribe, Wendell Chino, tribal president for the past three decades, said the tribal council believed that income from the repository "could provide an opportunity for long-term independence and prosperity for our tribe that we would be negligent to ignore or reject." Matthew L. Wald, Tribe on Path to Nuclear Waste Site, N.Y. Times, Aug. 6, 1993, at A12. See also Richard A. Du Bey et al., Protection of the Reservation Environment: Hazardous Waste Management on Indian Lands, 18 Envil. L. 449 (1988); Keith Schneider, Grants Open Doors for Nuclear Waste, N.Y. Times, Jan. 9, 1992, at A14.

Mescalero—traditionalists, environmentalists, and nuclear skeptics—denounce these efforts as an affront to Indian values, religion, and self-interest.⁴⁸

C. History of Nuclear Power in Two Nations: Euro-American and Native American

The possibility of storing high-level nuclear waste on Indian land can only be understood by looking at the history of nuclear power and nuclear waste within two very different yet interdependent sovereigns: the United States as a whole and Indian nations within its borders. The questions raised by waste-siting in Indian country are legal, political, and ethical. As with all issues in Indian country, these questions require an examination of the historical roots of the controversy.

History of Regulation of Nuclear Energy in the United States

Until 1954, the federal government had exclusive use, control, and ownership of all nuclear technology.⁴⁹ The Atomic Energy Act of 1946 (1946 Act),⁵⁰ gave control to the newly created civilian Atomic Energy Commission (AEC, the forerunner of today's Nuclear Regulatory Commission (NRC)), but this was merely a formality.⁵¹ The federal government in fact retained actual ownership of all nuclear material and facilities; civilian participation was limited to contract work performed for the government.⁵²

^{48. &}quot;[W]e are once again . . . put in that position of being guinea pigs for the U.S. government and I don't like it. . . . If it was so safe, why don't they put it in their backyard instead of trying to shove it off on us?" said one Mescalero tribal member in a recent interview. All Things Considered: New Mexico Considers Nuclear Waste Site Nearby (NAT'L Pub. Radio broadcast, Aug. 29, 1993) (quoting tribal member Donna Lynn Torres). Among those against the project is Harlan Geronimo, great grandson of the last great warrior to surrender to the U.S. Cavalry in the Southwest. Opposition to the proposed MRS is not looked upon favorably within the tribe. Id. People are afraid of opposing a decision by the tribal council due to its reputation for violent threats and scare tactics. "I feel the pressure," says Harlan. "They shot my horse and my dog. And someone left a pile of dead rattlesnakes in my driveway." Id. Tribal leaders agreed to hold a referendum within the tribe before signing any agreement with the government, something that has not been done in the two years since the Mescalero Apaches began to negotiate the waste siting. Id.

^{49.} Nevada v. Watkins, 914 F.2d 1545, 1549 (9th Cir. 1990), cert. denied 499 U.S. 906 (1991).

^{50.} Atomic Energy Act of 1946, Pub. L. No. 79-585, 60 Stat. 755 (1946) (current version at 42 U.S.C. §§ 2011-2296 (1988 & Supp. IV 1992)).

^{51.} David P. Crocker, Federal Nuclear Policy and the 1987 Maine Nuclear Referendum: Viable Initiative or Legal Cul-De-Sac?, 41 Maine L. Rev. 65, 67 (1989).

^{52.} Id.

After 1946, the federal government began to promote more "positive" (nonmilitary) aspects of nuclear technology.⁵³ Eight years later, Congress enacted the Atomic Energy Act of 1954 (1954 Act),⁵⁴ which laid out the structure through which the nuclear industry operates today.⁵⁵ The 1954 Act encouraged civilian ownership of "both energy production and utilization facilities."⁵⁶ The goal of the Act was to "promote world peace, improve the general welfare, increase the standard of living, and strengthen free competition in private enterprise."⁵⁷ The AEC initially planned to reprocess waste⁵⁸ and promised utilities that nuclear waste would be transferred from utilities shortly after its removal from reactors.⁵⁹ In response to this federal initiative, many utilities built nuclear power plants.⁶⁰

^{53.} See In re Northern States Power Co., No. E-002/CN-91-19, 1992 WL 348063 (Minn. P.U.C., Aug. 10, 1992) (order granting NSP temporary certificate to build nuclear waste storage facility near Prairie Island Mdewakanton Sioux Community in Southeastern Minnesota).

^{54.} The Atomic Energy Act of 1954, Pub. L. No. 83-703, 68 Stat. 919 (1954) (codified as amended at 42 U.S.C. §§ 2011-2296 (1988 & Supp. IV 1992)).

^{55.} See Crocker, supra note 51, at 68.

^{56.} See Crocker, supra note 51, at 68. In 1954, the government allowed the private ownership of nuclear reactors, but Congress continued the mandatory government ownership of special nuclear materials. Jeanne A. Russell, Atomic Energy Statutory Construction—Political Concerns Blanket the Supreme Court from Using its Traditional Tools of Statutory Construction, Huffman v. Western Nuclear, Inc., 108 S.Ct. 2087 (1988), 13 Suffolk Transnat'l L.J. 317, 319 (1989). There was no shift in the government's position until 1964, when it was speculated that private ownership of special nuclear materials would be vital to commerce and the United States' increasing energy demands. Id. The Private Ownership of Special Nuclear Materials Act of 1964, Pub. L. No. 88-489, 78 Stat. 602 (as codified in scattered sections of 42 U.S.C.), gave owners of nuclear facilities the right to own the fuel for the first time. Id.

^{57. 42} U.S.C. § 2011(b) (1988). See also Crocker, supra note 51, at 68.

^{58.} Spent fuel rods are containers of nuclear fuel that have been used by nuclear reactors to generate energy. See Woychik, supra note 5, at 361. In nuclear reactors, light water fission reactors use uranium fuel rods to provide most of the atomically generated energy in the United States. Id. at 405. The rods are composed of Uranium-235, which is processed from mined uranium ore and then enriched to sustain a nuclear reaction. Id. Within the reactor core, the enriched Uranium-235 undergoes a controlled atomic chain reaction, producing heat, Uranium-238, plutonium and other radioactive by-products. Id. at 406. The core is immersed in water which acts as a coolant. Id.

Reprocessing is a chemical process originally developed to obtain plutonium for nuclear weapons. *Id.* at 361. Uranium-238, residual U-235, and plutonium in spent fuel rods can be extracted by reprocessing and reused in light water fission and breeder reactors. *Id.* However, reprocessing strategy proved unworkable for economic, health, and security reasons. Reprocessed wastes have high concentrations of radioactive transuranic elements. *Id.* The liquid residue must be resolidified before safe disposal is possible. *Id.* Reprocessing also exposes workers to high radiation levels. *Id.*

^{59.} In re Northern States Power Co., E-002/CN-91-19, 1992 WL 348063, at *8 (Minn. P.U.C., Aug. 10, 1992).

^{60.} Id.

In 1974, Congress enacted the Energy Reorganization Act of 1974.⁶¹ This Act, which dealt with all areas of energy production, abolished the AEC and transferred research and development responsibilities to the Energy Research and Development Administration (ERDA),⁶² with regulatory and licensing functions delegated to the Nuclear Regulatory Commission (NRC).⁶³

Congress first delegated some control of nuclear environmental issues to the Environmental Protection Agency in the Clean Air Act Amendments in 1977.⁶⁴ Under the amendments, the EPA is required to assign responsibility for commercial nuclear facilities to states which have established guidelines approved by the EPA.⁶⁵ Once this is done, states can assume regulatory responsibility over nuclear facilities and materials.⁶⁶

A. History of the U.S. Nuclear Waste Build Up

We have to have reverence for its nature and learn to live in harmony with it. 67

The fifty-year period of nuclear energy processing has left us with a staggering amount of nuclear waste.⁶⁸ As it entered the nuclear age, the United States cavalierly mined, milled, and used uranium with no pre-planning for the safe disposal of the inevitable waste.⁶⁹ The government's emphasis was on the production of power, both civilian and military. The buildup of uncontrolled nu-

^{61.} Pub. L. No. 93-438, 88 Stat. 1233 (1974) (codified as amended at 42 U.S.C. §§ 5801-5851 (1988 & Supp. IV 1992)).

^{62. 42} U.S.C. §§ 5811-5821 (1988 & Supp. IV 1992).

^{63. 42} U.S.C. §§ 5841-5851 (1988 & Supp. IV 1992).

^{64.} Clean Air Act of 1977, Pub. L. No. 95-95, 91 Stat. 685 (1977) (codified as amended at 42 U.S.C. §§ 7401-7642 (1988 & Supp. IV 1992)).

^{65. 42} U.S.C. §§ 7412(d)(1), 7422 (1988 & Supp. IV 1992). The states must implement regulations which are at least as strict as those of the EPA. 42 U.S.C. § 7416 (1988 & Supp. IV 1992).

^{66. 42} U.S.C. § 7412(d)(1) (1988 & Supp. IV 1992).

^{67.} In these words Native American author Marilou Awiakta described an Indian perspective on the relationship between humans and nuclear power. Marilou Awiakta, *Baring the Atom's Mother Heart, in Homewords: A Book of Tennessee Writers* 182, 184 (Douglas Paschall & Alice Swanson eds., 1986).

^{68.} In 1990, the DOE calculated that between the years 1990 and 2040, power utilities will need to store 25,036 metric tons of civilian generated nuclear waste. Bob von Sternberg, Activists Fight Plan to Store Nuclear Fuel, STAR TRIB. (MINNEAPOLIS), Apr. 18, 1991, at A1, A8. A national study on power utilities companies concluded that by the year 2003, 78 of the nation's 111 nuclear reactors will have no space to store nuclear waste. Id.

^{69.} See generally Richard W. England & Eric P. Mitchell, Federal Regulation and Environmental Impact of the U.S. Nuclear Power Industry, 1974-1984, 30 Nat. Resources J. 537, 537-43 (1990). The Energy Reorganization Act of 1974 mandated that the NRC was to actively promote nuclear development. Pub. L. No. 93-438, 88 Stat. 1233 (1974) (codified as amended at 42 U.S.C. §§ 5801-5851 (1988 & Supp. IV 1992)). See also Crocker, supra note 51, at 78.

clear waste resulted from a deliberate policy of the United States government, until the late 1970s, of emphasizing rapid expansion of nuclear power and de-emphasizing nuclear safety and health.⁷⁰ Scholars conclude that politicians and administrative agencies sought very minimal control of safety and health in order to provide an impetus for the developing nuclear industry.⁷¹

The radioactive waste which has accumulated at facilities across the country has been characterized as "the most potentially serious environmental hazard . . . fac[ing] the health and safety of the people of this planet . . . for the next 10,000 years."⁷² A government study concluded that even without any new nuclear plant approvals "by the year 2000, there will be an estimated 41,000 metric tons [of high level nuclear waste] awaiting permanent storage."⁷³ Much of this accumulated nuclear waste is highly radioactive spent fuel. A study by the National Academy of Sciences determined that "it would take three million years for this spent fuel to decay to the point of posing the same level of risk as the uranium ore from which it came."⁷⁴

In the late 1970s, attitudes among the American electorate began to change with respect to nuclear power. Although the dangers of nuclear materials had been known for decades, it was not until Congress began to confront the nuclear waste problem in this new atmosphere of public hostility and skepticism that the government articulated the dangers. Congressional hearings began in 1977, and the legislative history is laden with tales of the instability of on-site storage. The storage of the instability of on-site storage.

^{70.} England & Mitchell, supra note 69, at 539-40.

^{71.} England & Mitchell, *supra* note 69, at 539-40. "[E]ncouragement of a new industrial technology, and not regulation of its environmental impact, seems to have been the primary concern of the AEC during the infancy of nuclear power in the United States." *Id.* at 540.

^{72.} Hovis, *supra* note 39, at 55-56 n.62 (quoting 128 Cong. Rec. 26,302 (1982) (statement of Rep. Markey)).

^{73.} MYTH BUSTERS, *supra* note 23 (citing U.S. Dep't of Energy, Oak Ridge National Laboratories, Spent Fuel and Radioactive Waste Inventories, Projections and Characteristics 29 (1986)).

^{74.} MYTH BUSTERS, *supra* note 23 (citing National Academy of Sciences, A Study of the Isolation System for Geologic Disposal of Radioactive Wastes (1983)).

^{75.} After the Three Mile Island accident, public opinion shifted from nearly two-to-one in favor of nuclear power to approximately half opposing its use. Even after the federal government began stricter control of nuclear hazards, opposition has increased and by the mid-1980s was about two-to-one against. England & Mitchell, supra note 69, at 543 n.23 (citing Freudenburg & Baxter, Nuclear Reactions: Public Attitudes and Policies Toward Nuclear Power, 5 Pol'y Stud. Rev. 97-98 (1985)).

^{76.} Bob Carr, a representative from Michigan, stated that,

Nuclear wastes are the inevitable byproduct of the generation of electricity from nuclear fuel. Nuclear wastes represent a long-term po-

At the time of these hearings, the accumulation of spent fuel at power plants was already massive.⁷⁷ Congress, beginning to grapple with the inadequacy of its knowledge of the subject,⁷⁸ frequently expressed frustration with the lack of progress.⁷⁹

Finally, in 1982, Congress passed the Nuclear Waste Policy Act of 1982 (NWPA) to "establish a federal program for the development of disposal sites for high-level nuclear waste and spent fuel assemblies." The Act authorizes "permanent geologic repositories

tential danger to human health and the environment. Our techniques for management and storage must be certain to isolate these wastes for time periods longer than man's total experience on this planet. Hence the nuclear waste problem presents unique institutional and technical challenges.

Nuclear Waste Management: Oversight Hearings before the Subcomm. on Energy and the Environment of the House Comm. on Interior and Insular Affairs, 95th Cong., 1st Sess. 1 (1977).

Senators and Congressmembers agreed that this waste could "not be put just anywhere. It is highly radioactive and must be kept isolated from the human environment in carefully constructed and maintained facilities." Nuclear Waste Management and Disposal: Hearings before the Subcomm. on Oversight and Investigations of the House Comm. on Interstate and Foreign Commerce, 95th Cong., 1st Sess. 1 (1977) [hereinafter Hearings] (statement of Rep. Santini).

77. "One of this Nation's 65 [then] operating commercial reactors, the H.B. Robinson No. 2 facility in South Carolina, [had] already exhausted its spent fuel storage capacity. Its manager [stated] that he [would] be required to shut down early [the following] year if he [had] no place to put the spent fuel." Hearings, supra note 76, at 1.

78. "An additional factor which is becoming a source of grave concern and contributing to the uncertainties . . . is the growing awareness that there are serious gaps in our knowledge with respect to the permanent disposal of nuclear wastes." Hearings before the Subcomm. on Energy, Nuclear Proliferation and Federal Services of the Comm. on Governmental Affairs, 95th Cong., 2d Sess. (1978) (statement of Sen. Glenn).

"Our failure thus far to develop a clear, comprehensible, and convincing program for dealing with nuclear wastes has so badly eroded public confidence in our ability to cope with this problem that the continued use of nuclear power in this country may well be threatened." Hearings before the Subcomm. on Energy, Nuclear Proliferation and Federal Services of the Comm. on Governmental Affairs, 96th Cong., 1st Sess. (1979) (statement of Sen. Glenn).

79. "I think the Government has got to bear the responsibility for seeing to it that this problem is under control and the things that aren't done are credibly underway." Hearings before the Subcomm. on Oversight and Investigations of the Comm. on Interstate and Foreign Commerce, 95th Cong., 1st Sess. (1977) (statement of Rep. Santini).

"With each passing year, the storage becomes greater in magnitude because of the continued delays in the startup of spent fuel reprocessing facilities." *Id.* at 118 (Statement of Mr. John Cagnetta, Ph.D., Chairman, Subcommittee on Spent Fuel Storage, Nuclear Fuel Cycle Services Committee, Atomic Industrial Forum, Inc.).

80. Crocker, supra note 51, at 83. Section 10131(a) of the NWPA states:

Congress finds that - (1) radioactive waste creates potential risks and requires safe and environmentally acceptable methods of disposal; (2) a national problem has been created by the accumulation of (A) spent nuclear fuel from nuclear reactors; and (B) radioactive waste from (i) reprocessing of spent nuclear fuel; (ii) activities related to medical research, diagnosis, and treatment; and (iii)other sources; (3) fed-

for disposal of such materials, provides for licensing and expansion of interim storage, authorizes research and development, and provides a new scheme for financing."81 This was the first proposal ever made for a comprehensive solution to the mounting civilian nuclear waste problem.82

\boldsymbol{B} . Statutory Scheme for Nuclear Waste Disposal

Congress mandated a disposal scheme under which all nuclear waste is divided into two very broad categories: military and civilian.83 The Waste Isolation Pilot Plant (WIPP) in southeastern New Mexico will be the single permanent repository for all military transuranic waste.84 Civilian waste is further classified into two different types of waste: low-level and high-level waste, each regulated under different legal criteria and disposed of differently.85

Low-Level Nuclear Waste

Low-level nuclear waste is defined as all radioactive waste which is not high-level radioactive waste, spent nuclear fuel, or byproduct material.86 The Low-Level Radioactive Waste Policy Act87

eral attempts during the past 30 years to devise a permanent solution to the problems of civilian radioactive waste disposal have not been adequate.

42 U.S.C. § 10131(a) (1988).

81. Crocker, supra note 51, at 83. 42 U.S.C. §§ 10131-10145 (repositories), 10151-10157 (interim storage), 10191-10203 (research regarding disposal), 10222-10223 (other provisions) (1988 & Supp. IV 1992).

82. While this article focuses on civilian nuclear waste, the enormity of the waste crisis is not reflected in civilian waste alone. Production of nuclear weapons accounts for at least 340,000 cubic meters of high-level defense waste currently stored at the Savannah River Plant in South Carolina, the Idaho National Engineering Laboratory, and the Hanford Reservation in Washington state. See U.S. Dep't of ENERGY, OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT, CHARACTERISTICS AND INVENTORIES OF NUCLEAR WASTE 2 (1987), cited in MYTH BUSTERS, supra note 23.

83. Montange, supra note 27, at 105.

84. Tony Davis, Trucking and Testing WIPP Waste, ALBUQUERQUE TRIB., Oct. 18, 1991, at 1D. Transuranic (TRU) waste, nuclear waste that contains radioactive elements heavier than uranium, is a byproduct of nuclear military facilities. Id.

85. See, e.g., Contreras, supra note 24 (discussing regulation of low-level nuclear waste).

86. 42 U.S.C. § 2021b(9) (1988 & Supp. IV 1992).

Typically, low-level waste is generated by secondary, nonradioactive materials coming in close contact with more radioactive materials. This includes water from the primary loop of the reactor, tools, clothing or machinery used to handle nuclear products. Such items are either contaminated by the products they contact, or become radioactive through neutron bombardment.

Crocker, supra note 51, at 82 n.84.

87. Pub. L. No. 96-573, 94 Stat. 3347 (1980) (codified as amended at 42 U.S.C. § 2021b-2021j (1988 & Supp. IV 1992)).

gives primary responsibility for the management of low-level nuclear waste to the states.⁸⁸ Much of the low-level waste will actually be stored at a number of commercially operated multi-state regional disposal facilities.⁸⁹ Many scholars and scientists argue that low-level nuclear waste is actually very dangerous and that the current act seriously underestimates and underregulates these hazards.⁹⁰

2. High-Level Nuclear Waste

Pursuant to the NWPA, the federal government is responsible for housing all of the nation's high-level waste in a single permanent repository. The most likely site for ultimate disposal of civilian high-level waste is Yucca Mountain in Nevada. However, under the provisions of the NWPA the waste will first be shipped to a single Monitored Retrievable Storage (MRS) facility, where it will be monitored and temporarily stored for forty years or more. The site for the MRS and even the need for such a temporary storage site are currently the subject of heated debate on a national scale.

^{88. &}quot;Each state is now responsible for developing repositories for all low-level wastes [except those from military or federal research] produced within the state." Crocker, supra note 51, at 82. See also 42 U.S.C. § 2021d(a)(1) (1988 & Supp. IV 1992).

^{89.} See Low-Level Radioactive Waste Policy Amendments Act of 1985, Pub. L. No. 99-240, 99 Stat. 1842 (codified at 42 U.S.C. § 2021b-2021j (1988)), especially Title II of this Act, known as the Omnibus Low-Level Radioactive Waste Interstate Compact Consent Act, Pub. L. No. 99-240, 99 Stat. 1859, which creates seven interstate regional radioactive disposal compacts, each with a "host" state. This scheme has decentralized the low-level siting process, leaving the waste scattered throughout the country.

[&]quot;[While] the United States needs only a few low-level radioactive waste repository" sites, under this disposal scheme "it is likely to end up with eight to ten sites." See Montange, supra note 27, at 373. Whether or not a state chooses to enter into an interstate compact is a separate issue from whether it is an Agreement state or a non-Agreement state. States which have not entered into approved compacts will have to build their own waste depositories. Id. at 370-75.

^{90.} See Montange, supra note 27, at 357-76 (thoroughly describing low-level waste disposal). See id. at 360-63, which shows the less stringent controls for low-level civilian waste. For example, low-level wastes are regulated for only 100 years, while comparable classes of mill tailings under EPA regulations are controlled for 1,000 years. 40 C.F.R. § 192.32(b)(1)(i) (1993). In the years preceding the adoption of the Low Level Radioactive Waste Policy Act, most facilities for the disposal of low-level radioactive waste had closed due to accidents or other problems. Montange, supra note 27, at 367-68.

[&]quot;The only general statement which can be made concerning low-level radioactive waste is that it is composed of many different kinds of waste material presenting fundamentally different kinds and degrees of hazards." *Id.* at 358-59.

^{91. 42} U.S.C. §§ 10133-10136.

^{92.} See infra notes 103-22 and accompanying text.

^{93.} Invitation for Dialogue, supra note 23.

The main goal of the NWPA today is the selection of a site for the MRS, with most eyes turned to Indian country. While the focus of this article is on the MRS, it is necessary to understand the fate of the permanent repository siting in order to evaluate the manner in which the MRS is being sited.

a. Permanent Repository

The NWPA creates a timetable for construction of a permanent facility for the disposal of nuclear waste. This facility was scheduled to be in operation by the year 2000, although many now believe that this is an unrealistic goal.94 Moreover, "[n]o . . . operational high-level nuclear waste disposal facility exists anywhere in the world."95 Not only must engineers design a facility that will ensure the utmost safety, but a suitable location must also be found. The Act originally provided that the Department of Energy (DOE) nominate five possible repository sites. From these five sites, the Secretary of Energy was to recommend three to the President for site characterization.96 After the completion of these three characterizations, the Secretary was to recommend a single site to the President for development as a national high-level nuclear waste repository.97 Before any site was recommended to the President, open hearings in the community were to be held and public comments solicited. The right of the host state to refuse to permit

^{94.} An earthquake near Yucca Mountain in June of 1992 raised new questions about the feasibility of the site. James Coates, Quake Jars Nuclear Dump Plan, Chi. Trib., July 12, 1992, § 1 at 12. The earthquake registered 5.6 on the Richter scale. Id. It "caused \$1 million in damage to a [DOE] office building [located] six miles from where the [DOE] plans to bury . . . radioactive waste from civilian nuclear power plants." Id. See also 138 Cong. Rec. S17,566 (daily ed. Oct. 8, 1992)

Over the past decade, the projected cost of site characterization has climbed from \$60 million in 1982, to over \$1 billion in 1987 . . . to approximately \$2 billion in 1991, to approximately \$6 billion in 1992. . . . Over \$1 billion has been spent on studying Yucca Mountain. There is almost nothing to show for this.

Id. at S17,569 (statement of Rep. Graham).

^{95.} Woychik, supra note 5, at 362.

^{96.} See 42 U.S.C. § 10132(b)(1)(B) (1988). Site characterization is a comprehensive study of "potential host rock formations and other geologic and hydrologic characteristics." See Invitation for Dialogue, supra note 23, at no. 7. The packet of information explains that a study of the rock formation also includes "examination of surface features as well as the study of groundwater movement and the potential for earthquake and volcanic activity. Other factors used in site characterization include geologic history and formation, public safety and health, environmental considerations, local socioeconomic impacts, and the feasibility and cost of facility construction and operation." Id.

Section 10132(b)(1)(D) of the NWPA states that each site nomination must be accompanied by an environmental assessment. 42 U.S.C. § 10132(b)(1)(D) (1988).

^{97.} Nevada v. Watkins, 914 F.2d 1545, 1549 (9th Cir. 1990).

the site within its boundaries was integral to the Act.⁹⁸ Pursuant to these regulations, the Secretary issued draft environmental assessments for nine potential sites in six states.⁹⁹

As the selection process narrowed the potential site, political upheaval, anger, and a myriad of lawsuits over nuclear siting ensued. To circumvent this growing opposition, the 1987 NWPA amendments made sweeping changes in the siting of civilian nuclear waste facilities. 100 As the amendment process began, two very different proposals to end the repository impasse were offered by Representative Morris Udall of Arizona and Senator Bennett Johnston of Louisiana. Representative Udall's approach sought to base the site selection on scientific rather than political grounds by appointing a scientific panel to search for a new site. 101 In order to overcome political objections to the scientifically selected sites, Udall proposed appointing a special negotiator charged with convincing some state to accept the repository voluntarily, providing financial incentives to any state willing to do so. 102

Senator Johnston's proposal, which was later enacted in the 1987 NWPA amendments, limited DOE site characterization to a

^{98. &}quot;Though the Act assumes ultimate federal responsibility for a comprehensive solution to a complex problem, it also contemplates a state veto that can only be overridden by explicit Congressional action." Crocker, supra note 51, at 84 (referring to a state veto of site selection) (footnotes omitted). Section 10136(b)(1) of the Act states: "Unless otherwise provided by State law, the Governor or legislature of each State shall have authority to submit a notice of disapproval to the Congress under paragraph (2)." 42 U.S.C. § 10136(b)(1) (1988).

Paragraph (2) states "Such Governor or legislature may submit such a notice of disapproval to the Congress not later than the 60 days after the date that the President recommends such site to the Congress." 42 U.S.C. § 10136(b)(2) (1988).

The legislative history of the Act states: "A state or tribal rejection can only be overridden by a joint resolution of the Congress." H.R. Rep. No. 491, Part 1, 97th Cong., 2d Sess. 47, reprinted in 1982 U.S.C.C.A.N. 3792, 3813.

^{99.} The DOE initially recommended three sites in the western United States for a permanent repository. A Nuclear Burial Ground, Newsweek, June 16, 1986, at 31. Those sites were in Hanford, Washington, Deaf Smith, Texas, and Yucca Mountain, Nevada. Id. The DOE also considered twelve sites located in the central and eastern United States for a possible second repository. Id. These included three possible sites in Minnesota, one in Wisconsin, two in North Carolina, one in Georgia, two in Virginia, two in Maine, and one in New Hampshire. Maynard, The Story of a Town, N.Y. Times, May 11, 1986, § 6 (Magazine), at 20. In May of 1986, only four months later, the DOE abandoned its plans to evaluate the eastern and central sites. Montange, supra note 27, at 398.

^{100.} David H. Topol, Rethinking Who is Left Holding the Nation's Nuclear Garbage Bag: The Legal and Policy Implications of Nevada v. Watkins, 1991 UTAH L. Rev. 791, 793 (discussing siting opposition); Nuclear Waste Policy Amendments Act of 1987, Pub. L. No. 100-203, 101 Stat. 1330-257 (1987) (codified in scattered sections of 42 U.S.C.).

^{101.} Rochelle L. Stanfield, How Nevada Was Dealt a Losing Hand, NAT'L L. J., Jan. 16, 1988, at 146.

^{102.} Id.

single potential repository site, Yucca Mountain, Nevada. 103 Johnston's original proposal would have paid Nevada \$100 million to accept the repository. 104 Instead, Congress authorized only \$20 million for DOE payments, and then only on the condition that Nevada waive its right to disapprove the recommendation of a site for a repository. 105 The decision to limit the search to Yucca Mountain was neither scientific nor economic. It was in the very clearest terms a politically expedient solution. 106 Congress acted strongly and decisively to deprive Nevada of its right under the 1982 Act to veto the siting of the repository within its borders, in part because Yucca Mountain is federal land. 107 Nevada was also deprived of any meaningful participation in the site selection process since Congress provided only that Nevada could submit comments, but failed to require DOE to consider and act upon those comments. 108

Site characterization was scheduled to begin at Yucca Mountain in 1991.¹⁰⁹ Pursuant to Nevada law, the Secretary of Energy applied for the necessary environmental permits from the state of Nevada to study Yucca Mountain.¹¹⁰ The Nevada legislature in turn enacted a law stating that "[i]t is unlawful for any person or governmental entity to store high-level radioactive waste in Nevada."¹¹¹ The Secretary ignored the Nevada statute and stated that plans would continue at the site.¹¹² The state of Nevada filed suit, challenging the Secretary's decision.¹¹³

Neither the state of Nevada nor the Secretary of Energy contended that Congress expressly preempted the field of nuclear waste disposal,¹¹⁴ and the Ninth Circuit stated that the Supreme Court "has not yet confronted the issue whether the NWPA 'occupies the field' of nuclear waste disposal."¹¹⁵ But, according to the Ninth Circuit, "any state legislation which frustrates the full effectiveness of federal law is rendered invalid by the Supremacy

^{103.} Id. at 149.

^{104.} Topol, supra note 100, at 801 n.55.

^{105.} See 42 U.S.C. § 10173a(b)(2) (1988).

^{106.} See Topol, supra note 100, at 799-801. Washington state and Texas congressional delegations, far more powerful than Nevada, foreclosed any consideration of the sites in their states unless Yucca Mountain somehow failed to meet DOE site characterization standards. Id. at 799.

^{107.} Topol, *supra* note 100, at 791 (citing Nevada v. Watkins, 914 F.2d 1549, 1553 (9th Cir. 1990)).

^{108. 42} U.S.C. § 10136 (1988).

^{109.} Nevada, 914 F.2d at 1553.

^{110 77}

^{111.} NEV. REV. STAT. § 459.910 (1989).

^{112.} Nevada, 914 F.2d at 1551.

^{113.} Id.

^{114.} Id. at 1560.

^{115.} Id. at 1561.

Clause."116 The Ninth Circuit thus held that "Nevada's attempted legislative veto of the Secretary's site characterization activities is preempted by the NWPA."117

This exercise in congressional power, which withstood years of litigation, demonstrates the limits of state sovereignty in the face of concerted congressional action by sister states. It also signaled the illusory nature of congressional promises to recognize rights of host jurisdictions to veto federal nuclear waste siting. The 1987 amendments dramatically undercut the voluntary nature of nuclear waste siting which had been hallmark of the 1982 NWPA:

I think the first step we have to take here is to acknowledge that we will not construct waste management repositories anywhere in this country unless the citizens of the area feel the repository will be safe and that the risks and benefits of waste management are balanced, and distributed among the different regions of the country.¹¹⁸

In 1987, seventy-five percent of Nevada residents opposed the location of the repository in Nevada. ¹¹⁹ The 1987 amendments also removed any pretense of balancing risks and benefits when it eliminated all other regions of the nation as possible repositories. ¹²⁰

The fate of the 1982 "voluntary" solution, and the 1987 NWPA amendments which changed it, may foreshadow great problems for Indian tribes attempting to exercise sovereign decisionmaking powers in the nuclear site selection arena. The MRS plan for compensated siting is clearly patterned after Representative Udall's failed solution for repository siting: scientific consideration of potential sites, promised financial rewards to the MRS host government, and appointment of a nuclear negotiator to induce the tribe or state to accept the site voluntarily. Nevada's reliance upon these congressional promises was, however, misplaced. 122

^{116.} Id. (citing Perez v. Campbell, 402 U.S. 637, 652 (1971)).

^{117.} Nevada, 914 F.2d at 1561.

^{118.} Public Participation and Equity in Nuclear Waste Facility Siting: Oversight Hearing before the Subcomm. on Energy and the Environment of the House Comm. on Interior and Insular Affairs, 96th Cong., 1st Sess. 1 (1979) (statement of Rep. Udall).

^{119.} Topol, supra note 100, at 800.

^{120.} This problem is exacerbated by the fact that the WIPP, the military nuclear waste storage site, is located in the same region. See Davis, supra note 84; see also infra notes 283-84 and accompanying text.

^{121.} Stanfield, supra note 101, at 146.

^{122.} See Stanfield, supra note 101, at 146. Although the litigation is over, it does not appear that Nevada's battles to defeat siting are over. The efforts to defeat this siting continue and questions remain whether the repository will ever come to rest in Nevada. Conversation with Brad Hoaglun, Office of the Nuclear Waste Negotiator, Washington, D.C. (Oct. 27, 1993) [hereinafter Oct. 27 Conversation with Brad Hoaglun].

b. Monitored Retrievable Storage Facility

An MRS facility is an operation in which spent nuclear fuel and high-level waste is consolidated, packaged, handled, and temporarily stored prior to disposal in deep geological repositories. 123 It is intended to accommodate spent nuclear fuel and high-level radioactive waste resulting from civilian nuclear activities for renewable periods of forty years. 124

The facility must meet two important requirements: (1) "to permit continuous monitoring, management and maintenance" of the stored material 125 and (2) to "provide for the ready retrieval of such spent fuel and waste."126 The risk of release or accident is inherent in the very idea of monitored retrievable storage. 127 Monitoring also serves dual purposes of detecting a failure and of providing information on status and degradation of the waste.

The requirements for siting the MRS also reflect the danger inherent in nuclear waste. In 1982, Representative Udall explained that a site would be disqualified if located in any metropolitan statistical area, county, urbanized area, or place, having both (1) a population of not less than 2,500 individuals; and (2) a population density of not less than 1,000 individuals per square mile. 128

Monitored retrievable storage has dramatically reduced procedural and substantive protections when compared with permanent repository storage.

^{123. 50} Fed. Reg. 16536-37 (1985). See also 42 U.S.C. § 10161 (1988); Richard Mauro, Note, Tennessee v. Herrington: An End Run Around State Participation in Nuclear Waste Siting Decisions, 9 J. Energy L. & Pol'y 113 (1988). A Monitored Retrievable Storage Facility (MRS) is a temporary facility for nuclear waste eventually destined for Yucca Mountain. It is "an above-ground storage facility for spent nuclear fuel. The spent nuclear fuel from commercial reactors will be shipped to the MRS by truck or train in specially designed and tested casks, where it will be monitored and stored." Invitation for Dialogue, supra note 23, at no. 6. An MRS would cover about 450 acres and would resemble a low-rise industrial park. While at the MRS, the casks would be monitored to ensure that they remain sealed. The MRS will be licensed to operate for renewable periods of 40 years. Id.

^{124. 42} U.S.C. § 10161(a)(1) (1988). Critics of the MRS argue that policymakers have now proposed to address the storage crisis "by gathering the industry's most lethal waste at a single 450-acre parking lot." Paul Salopek, Descendants of Famed Apaches Split Over Nuke Waste Project, EL PASO TIMES, May 8, 1992, available in LEXIS, Nexis library, CURNWS file (also appearing as Mescalero Apaches Wrestle with Notion of Nuclear Reservation, EL PASO TIMES, Apr. 26, 1992, at A1).

^{125. 42} U.S.C. § 10161(b)(1)(B) (1988).

^{126. 42} U.S.C. § 10161(b)(1)(C) (1988).

^{127. &}quot;Retrievability of high-level nuclear waste might be desired for one or both of two reasons. It might be desired for purposes of reprocessing the waste or it might be required to remedy a failure of either an engineered or natural means of containment." Brown, supra note 12, at 744.

128. Report by Morris Udall, Nuclear Waste Policy Act of 1982, [SuDoc-Y1.1/8:97-

^{491/}PT.1] 82-H443-10.

In contrast to the Nuclear Waste Policy Act procedural provisions for siting and construction of repositories, the provisions for monitored retrievable storage are streamlined in several respects: The site characterization process required for a repository is not required for a[n] [MRS] facility. Neither presidential review nor recommendation is required for a[n] [MRS] facility. While the general provisions for congressional review of repository site selection after consultation with the affected state or Indian tribes apply to the site selection process for a[n] [MRS] facility, the provisions for financial assistance do not. There are no specific provisions in the [NWPA] for judicial review of actions concerning a[n] [MRS] facility as there are for repositories. The Administrator of the [EPA] is not empowered . . . to promulgate specific regulations concerning monitored retrievable storage facilities. The Administrator has that power over repositories. The [NRC] is not to promulgate specific regulations and standards prior to the construction of a[n] [MRS] facility. 129

The anticipated cost of the MRS compared to the permanent repository further suggests that the MRS, which is far less costly, lacks the safety protection required for the permanent facility. ¹³⁰ In 1985, the DOE estimated that the MRS would cost \$1 billion to build, while the permanent repository would cost in excess of \$32 billion. ¹³¹

The MRS facility is commonly described as a temporary facility, in contrast with the permanent character of the repository. Yet nothing in the brief, vague MRS provisions in NWPA limit the duration of waste storage in the MRS facility. Nothing in the statute forbids the use of the MRS as a permanent storage facility, and the statute itself implies that MRS storage may be either very long

^{129.} Brown, supra note 12, at 744-45 (footnotes omitted). See 42 U.S.C. §§ 10131-10145, 10161 (1988 § Supp. IV 1992).

^{130.} Brown, supra note 12, at 745. These are construction costs and do not include costs of compensated siting. See infra notes 327-30 and accompanying text. Since the Yucca Mountain site is on federal land, compensated siting costs may not be incurred. Since MRS siting contemplates economic incentives to overcome local objections and speed siting, those costs will need to be added to the construction costs mentioned above. It is difficult to imagine, however, that the Congress would ever authorize compensation that would even approach the geologic depository costs. The costs of construction and operation of the MRS facility are to be "borne by the generators and owners of the high-level radioactive waste and spent nuclear fuel to be stored" at the facility. 42 U.S.C. § 10161(b)(2)(B) (1988).

^{131.} U.S. DEP'T OF ENERGY, MISSION PLAN FOR THE OFFICE OF CIVILIAN RADIOACTIVE WASTE MANAGEMENT (1985).

^{132.} The current regulations specify that the MRS will house waste for a period of 40 years, after which the license must be renewed. See Invitation for Dialogue, supra note 23, at no. 6; see also Brown, supra note 12, at 746 (citing 128 Cong. Rec. S15,639-42 (daily ed. Dec. 20, 1982)). Brown hypothesizes that the sketchy nature of MRS provisions is due to disagreement between the houses of Congress with respect to MRS facilities. Id.

term or permanent. Congress specifically found that "long-term storage of high-level radioactive waste or spent nuclear fuel in monitored retrievable storage facilities is an option for providing safe and reliable management of such waste or spent fuel."133 And scientists, including the National Academy of Science study group on spent nuclear fuel, consider monitored retrievable storage a possible alternative to long-term storage of high-level nuclear waste. 134 The Act requires that the MRS be designed "to safely store such spent fuel and waste as long as may be necessary by maintaining such facility through appropriate means, including any required replacement of such facility."135 Further, there is no requirement that waste be removed from the MRS at a certain date, as is required with respect to interim storage facilities under the Act. 136 By 1987 there was growing public belief that the lax requirements for siting the MRS, coupled with lower construction costs, would result in the MRS becoming the de facto permanent repository.137

In an attempt to allay fears that the MRS site would, in effect, become the permanent repository, the 1987 amendments to the Act adopted what is referred to as the "MRS-repository linkage." This provision prohibits siting the MRS until the Nuclear Regulatory Commission has authorized the construction of the permanent repository. Seven after the NRC has authorized the construction of the repository, thereby clearing the way for the construction for the MRS, Nevada may still prevent the construction of the permanent repository at Yucca Mountain. In addition, at any time in the future, Congress may rescind the linkage provision to the Act and make MRS storage permanent.

Under the NWPA, the locations of both the repository and the MRS sites have been determined by a series of political, rather than

^{133.} Brown, supra note 12, at 741 (citing 42 U.S.C. § 10161(a)(1) (1982)).

^{134.} Brown, supra note 12, at 748.

^{135. 42} U.S.C. § 10161(b)(1)(D) (1988) (emphasis added).

^{136. 42} U.S.C. § 10155(e) (1988). Interim storage is limited to three years after either a repository or a monitored retrievable storage facility is constructed. *Id.*

^{137.} Brown, supra note 12, at 748.

^{138.} Melinda Kassen, Siting the MRS—A Lesson in How Even Bribes Don't Work, 7 Nat. Resources & Env't 16, 17 (1993).

^{139.} See discussion of Nevada v. Watkins, infra text accompanying note 426. "[A]lthough the Act clearly states that construction of a repository should proceed regardless of construction of a monitored retrievable storage facility, monitored retrievable storage is clearly an alternative for managing high-level waste." Brown, supra note 12, at 746.

^{140.} DOE regulations can likewise be amended to use the MRS for long-term or permanent storage. Oct. 27 Conversation with Brad Hoaglun, supra note 122.

scientific, decisions.¹⁴¹ While the political process has built-in scientific considerations, science has been largely limited to eliminating geographically inappropriate sites, rather than used as a basis to choose the best and safest land for nuclear disposal. "Indeed, it arguably does not require the selection of even an obviously superior site. It is aimed solely at the selection of an adequate site—one that meets applicable standards and does not present insurmountable political or legal obstacles."¹⁴²

3. Nuclear Waste Negotiator

It is ironic. The American Indians, who for so long have been maligned, mistreated and overlooked are emerging as the single largest private owners of energy resources (uranium, coal, oil, gas and geothermal) in this country. Certainly, when white men put Indians on reservations, they could not, in their wildest dreams have foreseen what this would mean to the Indian Nations. 143

With the 1987 amendments, Congress created a new office, separate from the Department of Energy, to undertake a new search for a permanent repository and MRS sites: the Office of the Nuclear Waste Negotiator.¹⁴⁴ The Negotiator was charged with

141. Montange, supra note 27, at 311-12.

Congress' solution to the problem of nuclear waste has taken the form of searching for political accommodation through the diffusion of decisionmaking authority rather than of the selection of objective rules of decision. As a result, the nuclear waste disposal program, although largely federal in its inception and controlled by a single agency (the AEC), has become increasingly de-centralized and de-federalized. Moreover, Congress has supplied no significant additional guidance with respect to standards either for disposal or for siting repositories. Because the approach which Congress has evolved is more political than scientific, the regime for siting facilities for the various categories of nuclear waste differs dramatically, and in a fashion which has only a limited relationship to the hazards involved.

Id. at 311

142. Montagne, supra note 27, at 396 (footnote omitted).

143. Robert S. Siegal, from Ray A. Young Bear, A Drive to Lone Ranger, Mesquakie (excerpt from materials submitted by Paula Gunn Allen for use in Prof. Collins' seminar, "Toxic Waste in Indian Country," at the University of Richmond Law School).

144. David Leroy was appointed the first Negotiator in June 1990 and was confirmed by the Senate on August 4, 1990. 136 Cong. Rec. S12,339 (daily ed. Aug. 3, 1990). Ten months later the Office of the Nuclear Waste Negotiator published its first operating procedures in the Federal Register. Notice, 56 Fed. Reg. 25,703 (1991). Under the regulations the Negotiator sought only an MRS site and took no action under its congressional delegation to seek a voluntary host for the permanent repository. *Id.* This notice made feasibility grants available to potential MRS hosts. *Id.* During the summer of 1993, the Clinton Administration accepted David Leroy's resignation and appointed Energy Secretary Hazel O'Leary as interim negotiator. Carol Bradley, *Former Congressman is New Nuclear Waste Negotiator*, Gannett News Service, June 4, 1993 (available in LEXIS, Nexis Library, CURNWS file). On

finding an Indian tribe or state willing to voluntarily accept either the permanent repository or the MRS and to negotiate an agreement for siting the facilities. Leonomic incentives were provided for states or tribes which would accept the waste voluntarily. After an agreement is negotiated, it must be approved by Congress and the President before it becomes effective.

The Negotiator's Office was initially established for a period of five years. 148 The 1987 amendments authorized payments of \$10 million dollars to any state or tribe which accepted the permanent repository and \$5 million dollars to any state or tribe which accepted the MRS, but all payments are specifically premised upon the waiver of objections to the siting. 149 The Negotiator created a three-tiered structure of grant applications for the MRS negotiation process. Phase I grants pay a potential host community up to \$100,000 for initial consideration of the waste facility. Phase II-A awards grant up to \$200,000 to conduct public information hearings and to reach agreement that the local government is willing to negotiate. 150 Phase II-B authorizes grants up to \$2.8 million to study the feasibility of accepting the MRS site, and allows a tribe or state to discontinue the process at any time throughout Phase II. 151 Only when Congress has approved the MRS agreement and it is signed by the President is the host committed to permitting the MRS in its community. 152 Although the Negotiator is still actively promoting the benefits of nuclear waste repository acceptance, even David Leroy himself admitted that the prospects of finding a host are constantly growing dimmer, and, prior to resigning, had given

November 11, 1993 the Senate confirmed Richard Stallings, a former representative from Idaho, the Administration's choice for Leroy's permanent replacement. 139 Cong. Rec. S15,654 (daily ed. Nov. 10, 1993).

^{145.} Rudy Abramson, Seeking a Foster Home for Nuclear Waste, L.A. Times, June 9, 1992, at 5.

^{146.} See id.

^{147. 42} U.S.C. § 10132(c) (1988) (Presidential review); 42 U.S.C. § 10135(c) (1988) (Congressional review).

^{148.} See 42 U.S.C. §§ 10241-10251 (1988 & Supp. IV 1992). Section 10250 states that the Office of the Nuclear Waste Negotiator "shall cease to exist not later than 30 days after the date 5 years after December 22, 1987." 42 U.S.C. § 10250 (referring to January 22, 1993). The Office was later extended for two years until January 1995. Pub. L. No. 102-486, 42 U.S.C.A. § 10250 (West Supp. 1994). See generally Stanfield, supra note 101.

^{149. 42} U.S.C. § 10173a(b)(2). See also David H. Leroy, Office of the United States Nuclear Waste Negotiator 1992 Ann. Rep. to Congress (Jan. 1993) [hereinafter 1992 Ann. Rep.].

^{150. 1992} Ann. Rep., supra note 149, at 5.

^{151. 1992} ANN. REP., supra note 149, at 6-7.

^{152.} See 1992 Ann. Rep., supra note 149, at 7. See also Kassen, supra note 138, at 18.

himself until the end of 1993 to show tangible progress.¹⁵³ In December 1992, DOE announced that it no longer believes that the Negotiator's process will lead to the construction of an MRS by 1998.¹⁵⁴ Furthermore, it now appears that all Phase II-B funding will be cut. In the fall of 1993, a three-line amendment was added to an energy appropriations bill. It stated that no Phase II-B funds will be made available to study the feasibility of an MRS.¹⁵⁵

In 1994, twelve years after the passage of the NWPA, the nation is no closer to having a permanent repository or an MRS facility than it was in 1977 when the hearings on civilian nuclear waste stockpiling began, 156 The federal government has spent well over \$1 billion in site selection and characterization, to no avail. 157 By law, the DOE is obligated to take title to all spent fuel "after the commencement of the facility (the repository or MRS) operations. not later than January 31, 1998."158 However, it does not seem possible that Yucca Mountain will be open by then, since the Nevada litigation and technical problems have delayed site characterization, 159 The current DOE date for the opening of a repository at Yucca Mountain is 2010, and "[m]ost groups interested in DOE's nuclear waste disposal efforts characterize this projection as wildly optimistic."160 In the meantime, the nuclear waste remains scattered throughout the country in dangerous and deteriorating condition.

II. History of Radioactive Colonization of Indian Lands¹⁶¹

They will have to be willing to identify capitalism for what it is, that it is destructive and uncompassionate and deceptive. They will have to be willing to do so or they will never understand why the Four Corners power plants in northwestern New Mexico continue to spew poisons into the air, destroying plant, animal, and human life in the area. . . . Only when this understanding is attained and decisions are reached and actions started to

^{153.} Elaine Hiruo, Nuclear Waste Reality Could Open Door for Alternatives to 1998 Contract Date, 17 NuclearFuel, Dec. 7, 1992, at 8.

^{154.} Lira Behrens, Leroy Chides DOE on Waste Disposal, INSIDE ENERGY, Jan. 4, 1993, at 1.

^{155.} See infra text accompanying note 396 (discussing amendment added in Energy and Water Development Appropriations Act of 1994, Pub. L. No. 103-126, 107 Stat. 1327 (1993)).

^{156.} See supra note 76 and accompanying text.

^{157.} See Civilian Nuclear Waste Program: Hearings Before the Senate Comm. on Energy and Natural Resources, 101st Cong., 2d. Sess. 1 (1990).

^{158.} Kassen, supra note 138, at 19.

^{159.} See supra notes 109-17 and accompanying text. See also Coates, supra note 94 (discussing earthquake at Yucca Mountain).

^{160.} Kassen, supra note 138, at 19.

^{161.} This term is derived from Churchill & LaDuke, supra note 2, at 95.

overcome economic and political oppression imposed upon all of us will there be no longer a national sacrifice area in the Southwest 162

The nuclear history of the United States imprinted a parallel course of nuclear history upon Indian country. 163 This occurred for several reasons. A combination of treaties, congressional actions. and court decisions over a two hundred year period removed Native Americans from their ancestral lands to lands considered wastelands by the American government. 164 Native Americans were never given sole control over "Indian Country." 165 Rather, it was

This article focuses primarily on the proposals for disposal of high-level civilian nuclear waste on Indian lands. The history of mining and milling uranium, and of military testing, are beyond the scope of this article. It is, however, crucial to understand the role Indian lands and Indian peoples have played in the nation's nuclear revolution in order to fully comprehend the legal significance of today's disposal schemes and the potential for cross-media contamination. See infra notes 166-85 and accompanying text.

164. See Amanda K. Wilson, Note, Hazardous and Solid Waste Dumping Grounds Under RCRA's Indian Law Loophole, 30 SANTA CLARA L. REV. 1043 (1990). Federal Policy toward Native Americans has fluctuated considerably through U.S. history. Id. at 1046. As described in this Note, those fluctuations can be characterized as six distinct periods of federal policy toward Native Americans:

1) 1820-1850; tribes removed from populated to unpopulated, usually undesirable, areas:

2) 1850-1880: tribes removed to permanent reservations, a process accompanied by extensive treaty-making;

3) 1871-1928: a period of allotment and assimilation when reservation land was converted from communally owned land into land allotments for individual Indian ownership plus "surplus land" for non-Indian homesteaders. The goal of allotment and assimilation was to "mainstream" Native Americans. Tribal land holdings diminished from 138 million acres to 48 million acres during this period;

4) 1928-1943: Indian Reorganization Act implemented with the

goal of preserving remaining tribal entities;

5) 1943-1961: tribal termination pursued, a policy which ended federal recognition and the federal relationship between the U.S. and 109 tribes and bands;

6) 1961-present: a policy of tribal self-determination, encouraging tribal self-government and establishing government-to-government relations between the U.S. and federally recognized tribes.

Id. at 1047 n.23 (citation omitted).

165. See Robert N. Clinton et al., American Indian Law: Cases and Materials 109 (3rd ed. 1991). Indian country is a term of art defined in 18 U.S.C.A. § 1151 (1984).

The term "Indian country" means (a) all lands within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether

^{162.} Ortiz, supra note 21, at 71-72.

^{163. &}quot;As with many other extractive operations on native lands, resource extraction for raw materials export—a 'raw materials colony' relationship—has a devastating effect on the health, economic conditions, and cultural viability of the native community." Robinson, in RACE, supra note 8, at 154.

held in trust for them by the federal government, which exercised extensive domain over the use and development of Indian land and resources. 166 Manuel Pino, a Pueblo Indian, perhaps summarized it best: "The government was very careful to set aside the land for Indians that held little value. Little did they know that because of uranium . . . they would have to come back for it." 167 While Americans are extremely afraid of nuclear reactor accidents, most fail to realize that uranium mining and milling have an equal, if not more detrimental, effect on the environment and on the people who mine it. 168

In order to gain nuclear superiority in the world, the federal government needed a domestic source of uranium. It found that uranium in the wastelands to which Native Americans were banished. 169 Just as the federal government had little difficulty justifying removal of Native Americans from their lands and into the wasteland in the nineteenth century, 170 it found little difficulty in "plundering" their natural resources in the interest of national security.

Virtually all uranium mining occurred on Indian lands.¹⁷¹ Native American uranium miners were subjected to high levels of radiation during the mining process, yet they were given almost no

within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights of way running through the same.

The term "Indian reservation" describes territory reserved for Indian occupancy by treaty, statute, or executive order. "Reservation" does not include Indian communities located outside reservation boundaries.

Id.

166. Alex Tallchief Skibine, Applicability of Federal Laws of General Application to Indian Tribes and Reservation Indians, 25 U.C. Davis L. Rev. 85, 87-93 (1991). The "trust obligation" the federal government owes to tribes is based on dicta found in early U.S. Supreme Court opinions. See Cherokee Nation v. Georgia, 30 U.S. (5 Pet.) 1, 17 (1831) ("Indian tribes are domestic dependant nations" whose relation to the federal government "resembles that of a ward to its guardian"). Only Congress can terminate the trust relationship. Joint Tribal Council of Passamaquoddy Tribe v. Morton, 528 F.2d 370, 380 (1st Cir. 1975).

167. Bill Lambrecht, Broken Trust: Poisoned Land, St. Louis Post-Dispatch, Nov. 19, 1991, at 6A (part 3 of a 5-part series, Nov. 17-21, discussing disposal of waste, including nuclear mining and spent-fuel, on Indian land).

168. See generally Robinson, in RACE, supra note 8.

169. Tribes within the United States have large mineral holdings: 10% of the nation's coal, 10% of its oil, and a minimum of 16% of the nation's uranium. Charles Wilkinson, Shall the Islands be Preserved?, 16 Am. West 32-34 (May-June 1979), quoted in Rennard Strickland, Indian Law and the Miner's Canary: the Signs of Poison Gas. The Fiftieth Cleveland-Marshall Lecture, 39 CL. St. L. Rev. 483, 489 (1991).

170. Richard Delgado, Derrick Bell and the Ideology of Racial Reform: Will We Ever Be Saved? The Elusive Quest for Racial Justice, 97 YALE L.J. 923, 939 (1988). 171. See Churchill & LaDuke, supra note 2, at 96.

protection against the known health hazards of radiation.¹⁷² Numerous studies demonstrate that Indian uranium miners suffered from cancer and other uranium-related illnesses.¹⁷³

Uranium milling, the processing of uranium ore, extracts usable uranium concentrate called yellowcake.¹⁷⁴ Since usable uranium ore represents only 0.10 to 1.0 percent of the mined material, waste tailings 100 to 1,000 times the amount of ore are generated.¹⁷⁵ The federal government allowed these highly radioactive mill tailings, which retain 85 percent of the original radioactivity of the ore, to accumulate in piles at the mines.¹⁷⁶ Radiological devastation is felt throughout Indian country in the southwest where uranium was mined and milled. It is estimated that there are over one thousand old mines and waste piles located on Navajo (Dineh) land alone, yet the federal government allotted only \$750,000 over a three year period to clean up all these sites—less than one percent of the actual estimated cost of an effective cleanup.¹⁷⁷

Hazards were not limited to the miners and millers, however. Uranium mine waste pollutes groundwater, streams, and air.¹⁷⁸ Massive amounts of water used in the mining process also became contaminated with high levels of waste.¹⁷⁹ Indian lands show the devastation of nuclear mining and milling in the form of air and water pollution and in excessive cancer deaths.¹⁸⁰

^{172.} See House Passes Compensation Bill For Victims of Radiation Exposure, BNA DAILY REP. FOR EXECUTIVES, Sept. 28, 1990, at A18; see also Valerie Tailman, Native Americans: U.S. Government's Guinea Pigs, Sun Sentinel, Jan. 9, 1994, at F2

^{173.} See Charlotte-Anne Lucas, 'Toxin Defense' Successful, Nat. L.J., May 1, 1989, at 9; Lung Cancer Rising Among Navajos in Uranium Areas of Ariz.—N.M., NuclearFuel, June 18, 1984, at 14.

^{174.} Monson, supra note 3, at 548 n.7.

^{175.} Robinson, in RACE, supra note 8, at 153.

^{176.} Robinson, in Race, supra note 8, at 153. One particularly egregious example of the devastation caused by mill tailing is Monument Valley mine on the Navajo reservation in northern Arizona. The pile of contaminated uranium mining waste at Monument is sixty-five feet high and covers seventeen acres. Lambrecht, supra note 167

^{177.} Lambrecht, supra note 167.

^{178.} See Churchill & LaDuke, supra note 2, at 103.

^{179.} See Churchill & LaDuke, supra note 2, at 103.

^{180.} Navajo Indians (Dineh) were the primary workforce for mining uranium ore, resulting in high lung cancer mortality rates. Pamela Duncan, Environmental Racism: Recognition, Litigation, and Alleviation, 6 Tul. Envil. L. J. 317, 383 (1993). As of October, 1993, the DOJ had rejected more than half the compensation requests filed by uranium victims under the 1990 Radiation Exposure Compensation Act. 13 DOJ ALERT 11, Oct. 18, 1993. The DOJ rejected 1,265 applications from miners and others who were exposed to high-level radiation between the 1940s and the 1960s when uranium production received high priority. Id. The DOJ approved 1,256 applications and an additional 708 applications are pending. Id. DOJ requirements often impose barriers by requiring victims to produce chest x-rays from 30 to 40

Native American literature expresses the sense of devaluation felt by many Native Americans in relation to the location of the atomic experiments and nuclear hazards. Simon Ortiz writes that "[i]t was no exceptional decision that Los Alamos Laboratories were located where they were nor where the atomic bomb would be exploded. This was the remote barren west afterall, and only a few Indians were there." 181

Because of the nuclear devastation wrought by mining, milling and testing, this section of Indian country has come to be known as the "National Sacrifice Area." In 1972, the Nixon administration sought to officially designate the Four Corners region and the impacted region of the Dakotas, Wyoming, and Montana as such. 183 The region is "literally uninhabitable through the . . . proliferation of nuclear contamination." 184 Leslie Marmon Silko, in *Ceremony*, tells the story of an Indian living in New Mexico in the 1940s, amidst nuclear testing:

From the jungles of his dreaming he recognized why the Japanese voices merged with the Laguna voices From that time on, human beings were one clan again, united by the fate the destroyers had planned for all of them, for all living things; united by a circle of death that devoured people in cities twelvethousand miles away, victims who had never known these mesas, never seen the delicate colors of the rocks that had boiled up their slaughter. 185

In considering Indian involvement in federal nuclear waste disposal programs, it is important to remember that nearly all of the nuclear devastation of Indian lands was committed either directly by the federal government, as in the case of weapons testing, or pursuant to uranium mining and milling activities which are part of the federal government's nuclear development scheme and performed pursuant to leases entered into by the Bureau of Indian Affairs. ¹⁸⁶ The affected Indian lands were under the trusteeship of the United States, which was responsible for protecting those lands

years ago. *Id.* However, Indian health services routinely purge such records after 25 years, thus impeding the large number of requests made by Native Americans. *Id.*

^{181.} Ortiz, supra note 21, at 64.

^{182.} Churchill & LaDuke, supra note 2, at 108.

^{183.} Churchill & LaDuke, supra note 2, at 108.

^{184.} Churchill & LaDuke, supra note 2, at 108.

^{185.} Churchill & LaDuke, supra note 2, at 110 (quoting Leslie Marmon Silko, Ceremony (1977)).

^{186.} See supra note 27 (discussing mine waste); supra notes 49-60 and accompanying text (discussing U.S. nuclear monopoly and subsequent relationship to private power plants); infra note 344 and accompanying text; and infra notes 426-45 and accompanying text (discussing exclusive federal control of nuclear safety).

and Indian peoples.¹⁸⁷ In exchange for the income generated by the tribe's natural resources, Native Americans received a legacy of cancer, death, and pollution.

There is another paradox hidden in this gloom. Laguna Pueblo poet Paula Gunn Allen reminds us that the Laguna Pueblo in New Mexico is among the best-educated tribes, producing doctors, lawyers, poets, writers, and intellectuals. The people of her tribe were educated from the profits of Jackpile Uranium Mine. Sunn raises the intriguing question of whether the intellectual power of the Laguna Pueblo people may not be due in part to living in proximity to the power of nuclear energy. At the very least, the mining and milling income, even if inadequate to compensate for the hazards, nonetheless provided a valuable source of income for the tribes.

A. Tribal Involvement Under NWPA

Ironically, Native Americans originally sought coverage under the Nuclear Waste Policy Act in order to protect themselves from nuclear hazards on non-Indian lands which had serious impact on reservations. 192 Native Americans lobbied hard for inclusion in the NWPA decisionmaking process, and the Act ultimately did include Indian tribes. 193

Under the provisions of the Act, Indian tribes are, in many respects, granted the same rights as states in the repository siting process. 194 States and tribes are entitled to the same rights to host a nuclear waste facility, to receive payment if they agree to host the facility, to disapprove siting in their own jurisdiction, and to consul-

^{187.} CLINTON ET AL., supra note 165.

^{188.} Personal Communication with Paula Gunn Allen, T.C. Williams School of Law (Mar. 25, 1992).

^{189.} Id.

^{190.} Id.

^{191.} Id.

^{192.} Hovis, supra note 39, at 47, 49.

^{193.} Hovis, supra note 39, at 56. Under the provisions of the Act, the term "affected Indian tribe" means any Indian tribe:

⁽A) within whose reservation boundaries a monitored retrievable storage facility, test and evaluation facility, or a repository for high-level radioactive waste or spent fuel is proposed to be located; (B) whose federally defined possessory or usage rights to other lands outside the reservation's boundaries arising out of congressionally ratified treaties may be substantially and adversely affected by the locating of such a facility: *Provided*, That the Secretary of the Interior finds, upon the petition of the appropriate governmental officials of the tribe, that such effects are both substantial and adverse to the tribe.

⁴² U.S.C. § 10101(2)(A)-(B) (1988).

^{194.} But see § IV infra notes 377-412 and accompanying text (discussing equal treatment of tribes and states).

tation and cooperation if the proposed site is in a jurisdiction that may affect them. 195

The Yakima tribe of Washington state was deeply involved in the struggle to include Native Americans in the NWPA.¹⁹⁶ The Yakima Indian nation's reservation is located near the Hanford nuclear plant.¹⁹⁷ The Hanford plant, which is also the site of one of the nation's five major military nuclear waste facilities,¹⁹⁸ still operates, causing numerous radiation problems for the Indian nations surrounding it. For example, the Hanford nuclear weapons facility has generated substantial nuclear waste soil contamination over the past forty years.¹⁹⁹

In an attempt to end further expansion of the Hanford facility, in 1979, the Tribal Council of the Yakima Nation enacted a ban on importation and transportation of nuclear waste across or within the Yakima Nation.²⁰⁰ In order to obtain standing to object to the continuing nuclear problems at Hanford, the Yakima actively lobbied Congress to include Indian tribes in the NWPA siting provisions. After receiving status as an "affected tribe," the Yakima worked to prevent siting the permanent repository at Hanford.²⁰¹

The state of Washington, which historically opposed the sovereign nations of the Yakima, Umatilla, and Nez Perce Indians, allied with the tribes in the fight against locating the NWPA repository at

^{195. 42} U.S.C. §§ 10136-10222 (1988 & Supp. IV 1992).

^{196.} See Hovis, supra note 39, at 51-52. The Yakima's story helps to make clear both the role nuclear power plays in the lives of Native Americans and the importance of considering Native American interests in nuclear legislation. Yakima tradition teaches that the Creator took the soil to make the first Yakima Indian from a location very near the Hanford Nuclear Reservation and that Yakimas walked their first steps on this land and have been there since the beginning of time. Id.

The location of the soil that created the first Yakima presents ironies that are not lost on the Yakima people. The same area that marks the creation of man also marks the development of man's potential destruction. In 1943, as part of the federal government's Manhattan Project to develop the atom bomb, the Hanford area was selected as a suitable nuclear reactor site for plutonium production. This plutonium was used in the bomb that devastated Nagasaki and helped end World War

Id. at 52 (footnotes omitted).

^{197.} Hovis, supra note 39, at 52.

^{198.} Montange, supra note 27, at 375-76.

^{199.} Topol, supra note 100, at 794-95.

^{200.} The ordinance prohibits "nuclear wastes, residues, fuels, products and by-products from nuclear material" being moved across or stored within the Yakima Indian Nation. Hovis, *supra* note 39, at 54 (quoting Yakima Tribal Council Resolution No. T-72-79 (June 6, 1979) (banning nuclear wastes from the reservation)).

^{201.} Hovis, supra note 39, at 60.

Hanford.²⁰² This tribal coalition and the state of Washington eventually defeated the siting of the permanent repository at Hanford.²⁰³

B. Indian Nations and the MRS

What good is the dump's money going to do if we're all dead of cancer. . . . We're supposed to be caretakers of the land and trees. What a joke. 204

After many years of vainly searching for a nuclear waste site, Congress and the newly created Office of the Nuclear Waste Negotiator turned to Indian nations. The response of Indian nations to the Nuclear Waste Negotiator's offer was, in many respects, overwhelming. There are 293 federally recognized tribes in the United States outside Alaska.²⁰⁵ More than two million Native Americans live in the United States.²⁰⁶ According to the Bureau of Indian Affairs, approximately half that number live on or near Indian reservations, trust land or Alaskan Native villages.²⁰⁷ Indians control just over three percent of the nation's land mass,²⁰⁸ yet Indian

204. Salopek, supra note 124 (quoting Joseph Geronimo, Apache, and grandson of the last major leader to surrender to the U.S. Cavalry in the Southwest).

^{202.} Hovis, supra note 39, at 60. Hanford was one of three sites on DOE's list of choices for the NWPA permanent repository prior to the 1987 NWPA Amendments. See supra note 99 (discussing early site selection candidates).

^{203.} See Washington Demanding "Valid" Study as Basis for Nuclear Waste Siting, INSIDE ENERGY, May 30, 1983. In an ironic turn of events, the Yakima nation applied for a Feasibility Grant pursuant to the 1987 NWPA amendments to study the possibility of hosting the MRS facility. Elouise Shumacher, Native Americans and Nuclear Waste—Yakimas Take First Step Toward Allowing Dump on Reservation, SEATTLE TIMES, Feb. 3, 1992, at D-1 (Northwest). Many tribal members argued that radiation will inevitably affect the Yakima nation, and that they would much rather have the funding associated with the MRS and the possibility of some voice in how the facility was controlled. Id. Not all Yakima Indians were supportive of the action but the Yakima Indian nation's leader argued that the MRS might have helped the tribe achieve its ultimate goal: cleaning up the Hanford site and reopening the area for traditional and religious uses. Id. The leader also stated that the Yakima have lived with the Hartford nuclear waste since World War II and could provide solutions based on their experience. Keith Schneider, Grants Open Doors for Nuclear Waste, N.Y. TIMES, Jan. 9, 1992, at A14. In the end, the tribal council withdrew its application and returned the grant funds. Tribe Complies with Government Orders, Returns Grant, SEATTLE POST INTELLIGENCER, Mar. 5, 1993, at B4.

²⁰⁵. David H. Getches et al., Cases and Material on Federal Indian Law 8-10 (3d ed. 1993).

^{206.} Dirk Johnson, Census Finds Many Claiming New Identity: Indians, N.Y. Times, Mar. 5, 1991, at A1, A16.

^{207.} Id.

^{208.} Du Bey et al., supra note 47, at 454. The 60 million acres of Indian country are not a single land mass. Kelly Michele Colquette & Elizabeth A. Henry Robertson, Environmental Racism: The Causes, Consequences, and Commendations, 5 Tulane Envil. L.J. 153, 181 (1991). The 280 reservations and approximately 220 Indian villages are scattered checkerboard style across the United States. Id.

tribes applied for sixteen of the twenty Phase I MRS grants.²⁰⁹ Every one of the Phase II applicants was an Indian tribe.²¹⁰

Tribal applications stand in stark contrast to the virtual absence of offers from states and non-Indian communities. Non-Indians, who comprise over 99 percent of the population and occupy an overwhelming percentage of non-federally owned land, accounted for only four Phase I applications and no Phase II applications.²¹¹ No state offered to host the MRS and two of the four non-Indian communities withdrew their applications after the governors of both of the affected states objected.²¹² Why would Native Americans, long overburdened with nuclear hazards, voluntarily consider siting the MRS on their lands?

In order to understand and evaluate tribal willingness to consider storing nuclear waste which the rest of the nation finds undesirable, we must examine the legal situation of Native Americans and developing concepts of environmental racism. Indian involvement in the nuclear waste trade is a direct legacy of legal policies that created a system of remote reservations, and restricted resource development. These policies rendered Indian tribes legally and economically dependent upon government programs, and swept Indians into a cycle of poverty. Indians are among the poorest persons in the nation on almost every economic and social welfare indicator, including an unemployment rate on reservations averaging sixty-five percent.²¹³ These problems, coupled with geographic isolation and systemic economic development problems, compel some tribes to consider the waste trade as one of the few realistic alternatives for economic development.

^{209.} MRS Grant Applicant List, Office of the Nuclear Waste Negotiator, (Aug. 25, 1993) [hereinafter MRS Grant Applicant List]. Two Oklahoma tribes withdrew their Phase I applications after tribal members voiced strong opposition to the tribal council's consideration of storing nuclear waste. Kassen, *supra* note 138, at 19.

^{210.} MRS Grant Applicant List, supra note 209. The Mescalero Apache of New Mexico received a Phase II-A grant and applied for II-B funding, as have the Skull Valley Band of the Goshute Tribe of Utah. Tribes Want Closer Look at MRS Possibility, 17 NuclearFuel, Nov. 9, 1992, at 7. The Mescalero Apache Tribe was the first group to receive a second stage grant. Id.; see also DOE Awards Phase II MRS Grant to Utah Tribe, Energy Daily, Nov. 3, 1992.

^{211.} MRS Grant Applicant List, supra note 209.

^{212.} Kassen, supra note 138, at 19.

^{213.} Churchill & LaDuke, supra note 2, at 99. Economics alone are not an adequate indicator of the quality of life within any community. Many Native Americans have deliberately foregone economic gain in favor of remaining active tribal members and living on the reservation. In many cases, "the material poverty of native indigenous persons is a reflection of defiance against assimilation." Chang, supra note 45, at 863.

III. Environmental Equity

While the voluntary siting program of the Nuclear Waste Negotiator was initially intended for all Americans, it has essentially become an Indian program. Consequently, it presents a unique opportunity to examine the concerns raised by siting noxious land uses in communities of color. Emerging concepts of environmental equity provide important analytical tools in this discussion. Because Indians in America are defined both by race and nation, equity concerns encompass issues of race and sovereignty. What makes this analysis particularly difficult is that racism is influenced both with the doctrine of limited Indian sovereignty and with environmental decisionmaking. These concepts affect our analysis of equitable considerations of nuclear waste storage in Indian country. In this section we examine the strands of racism, ²¹⁴ tribal sovereignty, and environmental equity in order to clarify the issues involved.

When discussions of Indian tribes arise in our nation, questions of self-determination and intergovernmental relations lurk just beneath the surface. The nuclear debate centers on the right of Indian nations, exercising their sovereign powers, to make decisions with important consequences for the citizens of contiguous states and the United States as a whole. However, the relationship of Indian nations to their sister sovereigns cannot be separated from issues of racism and stereotypical views of Native Americans. History, culture, sovereignty, equity, racism, and power sound the baffling drumbeat of the current nuclear debate.

A. Principles of Environmental Equity

In the metaphor of a rapidly sinking ship, we're all in the same boat, and people of color are closest to the hole.²¹⁶

In 1983, the General Accounting Office (GAO) reported that hazardous waste landfills are disproportionately sited in predominantly African-American communities, most of which are quite

^{214.} We use the term racism to include "those activities which support or justify the superiority of one racial group over another." Torres, supra note 21, at 840.

^{215. &}quot;On the reservations, you can't talk long about ... radiation sickness without running into the issue of sovereignty.... To Native Americans, sovereignty is ... the wellspring of their political will and the ultimate weapon of resistance..." Knox, supra note 46, at 57.

^{216.} Marianne Lavelle & Marcia Coyle, Unequal Protection: Racial Divide in Environmental Law, Nat'l. L.J., Sept. 21, 1992, at S4 (quoting Decohn Ferris of the National Wildlife Federation).

poor.²¹⁷ Soon thereafter, the United Church of Christ completed a study which found a national pattern of disproportionate siting of hazardous waste facilities in communities of people of color, and that race is the single best predictor of the location of such facilities.²¹⁸ Data generated in the study revealed that the proportion of minorities residing in communities with a commercial hazardous waste facility was about double that of communities without such facilities; where two or more such facilities were located in the same community, the proportion of residents of color was more than triple.²¹⁹ The probability that the racial biases in the location of the waste sites could have occurred as a result of chance are virtually zero.²²⁰ The predominant race of a community, apart from its social and economic status, thus has significant impact on the distribution of environmental hazards.²²¹

These two studies engendered serious questions concerning the equity of the nation's environmental programs. In January 1990, the Michigan Conference on Race and the Incidence of Environmental Hazards brought together scholars working in the area of environmental racism to advance knowledge on the issues and to raise public awareness. As a result of that meeting activists and scholars met with the EPA to demand action.²²² The EPA formed an internal workgroup to study environmental injustice and to draft a policy statement on the matter. In January 1992 the EPA issued its draft report on environmental equity which inspired heated public debate.²²³ The final EPA study found that (1) low-income and communities of color appear to have a greater than average observed and potential exposure to hazardous pollutants; (2) multiple sources of pollution can play a significant role in certain low-income and communities of colors' exposure to environmental

^{217.} Paul Mohai & Bunyan Bryant, Environmental Injustice: Weighing Race and Class As Factors in the Distribution of Environmental Hazards, 63 U. Colo. L. Rev. 921, 921 (1992) [hereinafter Mohai & Bryant, Environmental Injustice].

^{218.} UNITED CHURCH OF CHRIST, COMMISSION FOR RACIAL JUSTICE, TOXIC WASTES AND RACE IN THE UNITED STATES: A NATIONAL REPORT ON THE RACIAL AND SOCIO-ECONOMIC CHARACTERISTICS OF COMMUNITIES WITH HAZARDOUS WASTE SITES 15 (1987) [hereinafter United Church].

^{219.} UNITED CHURCH, supra note 218, at 13, 15-16.

^{220.} Mohai & Bryant, Environmental Injustice, supra note 217, at 922.

^{221.} Paul Mohai & Bunyon Bryant, Race, Poverty, and the Environment: The Disadvantaged Face Greater Risks, 18 Epa J. 8 (Mar./Apr. 1992) [hereinafter Mohai & Bryant, Race, Poverty].

^{222.} Mohai & Bryant, Environmental Injustice, supra note 217, at 923. While as far back as 1971 the Annual Report of the Council on Environmental Quality had documented racial injustices in the distribution of environmental hazards, public awareness and agency action awaited the events described herein. Mohai & Bryant, Race, Poverty, supra note 221, at 8.

^{223.} Mohai and Bryant, Environmental Injustice, supra note 217, at 923.

pollutants, and (3) the EPA does not calculate the human health risks posed by exposure to all sources of pollutants, or the cumulative and synergistic effects of such exposure.²²⁴

In the wake of these events the concept of environmental equity has become one of the fastest growing areas of legal scholarship. A virtual explosion of legal, sociological, and scientific scholarly publications occurred over the past two years on the emerging concept of environmental racism.²²⁵ Federal and state lawmakers have proposed legislation to deal with the issues, and litigation of the issue continues.²²⁶

1. Definitions of Environmental Racism and Environmental Equity

Since Dr. Benjamin F. Chavis, Jr. first called racial bias in the location of hazardous waste sites "environmental racism,"²²⁷ scholars have reached some agreement on the meaning of the term. Environmental racism includes "practices that place African-Americans, Latinos, and Native Americans at greater health and environmental risks than the rest of the society."²²⁸ The phenomenon encompasses "the disproportionate placement of toxic hazards in minority areas, the exclusion of people of color from environmen-

^{224.} Environmental Protection Agency, U.S. Dep't of State, Environmental Equity—Reducing Risk For All Communities, Volume 1: Workgroup Report to the Administrator (1992) [hereinafter Reducing Risk].

^{225.} Environmental racism is a term used to call attention to the fact that environmental hazards fall disproportionately on communities of color. The term describes both intentional and unintentional impact on communities of color. Rachel Godsil, Remedying Environmental Racism, 90 Mich. L. Rev. 394, 395 (1991). This usage is somewhat controversial as the Supreme Court requires proof of purposeful and invidious discrimination to constitute a violation of the Fourteenth Amendment. Id. Disparate impact on minorities is insufficient. Washington v. Davis, 426 U.S. 229, 242 (1976). However, Title VII of the Civil Rights Act of 1964 prohibits use of any employment criterion that disparately affects employees on the basis of race. Godsil, supra. See also Robert D. Bullard, Race and Environmental Justice in the United States, 18 Yale J. Int'l L. 319 (1993); Robert W. Collin, Environmental Equity: A Law and Planning Approach to Environmental Racism, 11 VA. ENVIL. L.J. 495 (1992); Jane Perkins, Recognizing and Attacking Environmental Racism, 26 CLEARINGHOUSE REV. 389 (1992); Peter L. Reich, Greening the Ghetto: A Theory of Environmental Race Discrimination, 41 U. Kan. L. Rev. 271 (1992); Naikang Tsao, Ameliorating Environmental Racism: A Citizen's Guide to Combatting the Discriminatory Siting of Toxic Waste Dumps, 67 N.Y.U. L. Rev. 366 (1992).

^{226.} See Collin, supra note 225, at 518-37, for an excellent summary of the litigation to date.

^{227.} Matthew S. Scott, Chavis to Lead NAACP into New Era, BLACK ENTERPRISE, July 17, 1993, at 17. Rev. Chavis, who issued the landmark report Toxic Wastes and Race in the United States in 1987 for the United Church of Christ and its Commission for Racial Justice, was appointed Executive Director of the National Association for the Advancement of Colored People (NAACP) in 1993. Id.

^{228.} Bullard, supra note 225, at 319.

tal planning, and the destruction of many traditional communities."²²⁹ As a form of institutional racism,²³⁰ it is necessary to consider both the distributional impact of environmental policies and "the substantive blindness in the production of rules that lead to racially subordinating activities."²³¹ The environmental equity movement challenges some of the fundamental precepts of existing environmental law.²³² Environmental equity has altered environmental law to require consideration of the equitable distribution of environmental benefits and burdens.²³³ Studies virtually unanimously conclude that race is the "single best predictor of the location" of hazardous waste sites.²³⁴ The finding that communities of color bear a disproportionate share of the environmental burdens is repeatedly affirmed.²³⁵

Additional underlying factors related to race also play a role in the siting of waste facilities²³⁶ including, *inter alia*: (1) the availability of cheap land in communities of color;²³⁷ (2) fewer economic and professional resources to organize, object to and to litigate siting decisions;²³⁸ (3) less resistance to siting decisions which often results from the hope for jobs or the lack of political resources, representation, and organization.²³⁹ Thus, a crucial reason for the in-

^{229.} Reich, supra note 225, at 272.

^{230.} Bullard, supra note 225, at 321.

^{231.} Torres, supra note 21, at 840. The act need not be done with intent to achieve an oppressive or discriminatory result. It is sufficient that the impact and result be achieved in the face of willful or negligent blindness to its results. Id.

^{232.} Traditionally, environmental law has focused on efficiency rather than on equity concerns affecting human communities. Tarlock, supra note 37, at 871-83. Environmentalists' twin goals have been preservation of ecosystem integrity and biodiversity. Id. at 879. Since the 1970s, these efforts expanded to include the elimination of involuntary exposure to toxic substances. Most environmental regulation is based upon determining the amount of pollution considered tolerable or achievable, then choosing the most economically efficient means of achieving that pollutant level. Hazardous waste disposal siting was determined based on economic efficiency as well. See generally id. Programatic results were measured largely in terms of bio-diversity and natural resources, with no systematic effort to insure that the costs and benefits of environmental programs were fairly distributed among differing human communities. See generally Mohai & Bryant, Environmental Injustice, supra note 217. The concern for the effects on human beings was limited to whether the total human U.S. population would benefit—without regard to the benefit/burden calculus respecting racial or economic minorities. Id.

^{233.} See generally Mohai and Bryant, Environmental Injustice, supra note 217.

^{234.} Mohai & Bryant, Race, Poverty, supra note 221, at 44.

^{235.} See, e.g., Bullard, supra note 225, at 320-27.

^{236.} Mohai & Bryant, Race, Poverty, supra note 221, at 8.

^{237.} Mohai & Bryant, Environmental Injustice, supra note 217, at 922 (citing UNITED CHURCH, supra note 218, at 23).

^{238.} United Church, supra note 218, at 16.

^{239.} See generally Robert Bullard & Beverly Hendrix Wright, Environmentalism and the Politics of Equity: Emergent Trends in the Black Community, 12 Mid-Amer. Rev. of Soc. 21 (1987).

equity in environmental benefits and burdens is the lack of political power on the part of minority communities at every level of local, state, and federal government.²⁴⁰ This factor also affects the siting of nuclear waste in Indian country.

Effective application of the principles of environmental equity to Indian nations requires considering the complex interaction of environmental racism²⁴¹—treatment based primarily upon the race of Native Americans—and environmental imperialism—treatment based upon the sovereign authority of Indian tribes.²⁴² For purposes of this article we include considerations of racism and imperialism under the language of "environmental equity."²⁴³

2. Unequal Enforcement of Environmental Laws

The problems of disproportionate siting of hazardous waste sites in minority communities are seriously compounded by a pattern of discriminatory environmental enforcement. An important study conducted by the National Law Journal in 1992 revealed that enforcement is related to race rather than to the economic status of

^{240.} Anthony R. Chase, Assessing and Addressing Problems Posed by Environmental Racism, 45 Rutgers L. Rev. 335, 346 (1993) "The resulting deficiency in political power encourages hazardous site developers and polluting industries to seek locations in minority areas, thereby avoiding the opposition and delays occurring in communities with greater political connections and power." Id. at 346 (citing Godsil, supra note 225, at 399).

^{241.} Williamson B. C. Chang suggests that using the term "environmental racism" already abandons the struggle over imperialism. See Chang, supra note 45, at 866-67.

^{242.} Williams uses the term "cultural racism" to include these two concepts. See Robert A. Williams, Jr., Columbus's Legacy: The Rehnquist Court's Perpetuation of European Cultural Racism Against American Indian Tribes, 39 Fed. B. News & J. 358 (1992) [hereinafter Williams, Columbus's Legacy]. In this article we do not adopt the phrase "cultural racism" because in some circumstances in the context of environmental law, race may predominate (as in the case of urban Indians), and in others, sovereignty may predominate (as in waste disposal on the reservation). In all cases cultural racism plays a part. In the cases where race predominates, however, the principles of environmental racism applied so effectively to African Americans and Hispanics can be applied directly. In situations dominated by sovereignty concerns, unique principles based upon nationhood are required.

^{243.} The term "environmental equity" is often used by persons who wish to raise issues of inequitable distribution of environmental benefits and burdens without answering the question of whether these inequities are based upon race. The authors' use of the term "equity" rather than "racism" is not in any way meant to avoid the issue of racism. We have chosen to use the term "equity" to reflect the dual concerns of racism and sovereignty essential to any discussion of Indian environmental issues. It is also crucial to our analysis that "equity" be defined based upon the goal of achieving a fair and just result for oppressed people relative to their actual social and political conditions, as opposed to a system which would simply treat all different groups identically. Our model of "equity" is an asymmetrical model, not the "sameness" model of equality. See Christine A. Littleton, Reconstructing Sexual Equality, 75 CAL. L. Rev. 1279 (1987) (discussing models of "equity" in relation to gender).

the community.244 White communities, rich or poor, get faster action, better results, and stiffer penalties than communities of African Americans, Hispanics, Native Americans and other people of color.245 At toxic waste sites, the treatment selected, the speed of remedy selection, frequency of site listing, fines, and decisions to pursue permanent solutions versus "containment," were all more protective of whites than of other races.246 The study found, for example, that of the 1,177 Superfund toxic waste sites with penalties assessed since 1980, penalties at sites with the greatest white population were 500 percent higher than penalties at sites with high minority populations.247 For all federal laws aimed at protecting citizens from pollution, penalties in white communities were 46 percent higher than in communities of color.248 In multi-media cases, where violations result in the contamination of more than one environmental medium, disparity was greatest. The average fine in white areas was \$335,566; it was \$55,318 in communities of color.249 Penalties in multi-media cases in high income areas were 1,650 percent higher than in low income areas.²⁵⁰

3. Environmental Degradation in Indian Country

The situation on Indian lands is consistent with findings showing that toxic waste sitings are closely tied to the race and economic standing of the community. The nation's 287 Indian reservations are among the most exploited and environmentally degraded lands anywhere in rural America.²⁵¹ Indian tribes bear the burden of hazardous waste storage and disposal sites in part "because they are far removed from populated areas."²⁵² In 1985, the Council of Energy Resource Tribes performed a survey of twenty-five reservations and found that 1,200 hazardous waste generators or other hazardous waste activities sites were located on or near the reser-

^{244.} Lavelle & Coyle, supra note 216, at S2.

^{245.} Id.

^{246.} Id.

^{247.} Id.

^{248.} Id.

^{249.} Id. at S4.

^{250.} Marianne Lavelle, The Minority Equation, NATL L. J. Sept. 21, 1992, at S2.

^{251.} Knox, supra note 46, at 52. For an excellent discussion of both past and present dumping of hazards on Indian lands, focusing especially on the Choctaw nation, see Scott Morrison & LeAnne Howe, The Sewage of Foreigners: An Examination of the Historical Precedent for Modern Waste Disposal on Indian Lands, 39 Fed. B. News & J. 370 (1992). See also Robert Tomsho, Dumping Grounds: Indians Contend with Some of America's Worst Pollution, Wall St. J., Nov. 29, 1990, at A1 (focusing on the St. Regis Indian Reservation, a Mohawk reservation).

^{252.} Du Bey et al., supra note 47, at 454.

vations.²⁵³ About half of all Native Americans live in communities with uncontrolled toxic waste sites.²⁵⁴ Of the 108 landfills on Indian lands in existence at the time RCRA became effective, only two are now in compliance with RCRA.²⁵⁵

There are several reasons for this condition.²⁵⁶ For many years, non-Indians illegally dumped waste on Indian lands or polluted non-Indian lands near reservations, leaving the waste to be carried by air, surface water, and ground water onto Indian lands.²⁵⁷ In addition, like all poor communities, Indian tribes' needs far exceed their resources. Environmental control was often put on a back burner or considered one of the myriad of community needs which would have to await greater resources.²⁵⁸ Most onreservation waste disposal, legal or illegal, occurs through open dumping.²⁵⁹

Concerns about inequality in environmental enforcement in communities of color apply, of course, to Indian communities as well. Inequitable EPA enforcement is of special importance since the federal government is often directly responsible for environmental enforcement on Indian lands, and there are very particular and idiosyncratic environmental enforcement issues in Indian country. State or local regulation generally does not apply to Indian lands.²⁶⁰ When the rash of federal environmental legislation

^{253.} Du Bey et al., supra note 47, at 459 n.35.

^{254.} United Church, supra note 218, at xiv.

^{255.} Have Minorities Benefited ...? A Forum, 18 EPA J., Mar.-Apr., 1992, 32, 35 (quoting Sen. Daniel K. Inouye (D-Hawaii), Chairman of the Select Comm. on Indian Affairs).

^{256.} For more information on the issues of waste in Indian country, see Leslie Allen, Who Should Control Hazardous Waste on Native American Lands? Looking Beyond Washington Dept. of Ecology v. E.P.A., 14 Ecology L.Q. 69 (1987); Steven M. Christenson, Regulatory Jurisdiction over Non-Indian Hazardous Waste in Indian Country, 72 Iowa L. Rev. 1091 (1986-87); Du Bey et al., supra note 47, at 449; Craighton Goeppele, Solutions for Uneasy Neighbors: Regulating the Reservation Environment After Brendale v. Confederated Tribes & Bands of Yakima Indian Nation, 65 Wash. L. Rev. 417 (1990); Ruth L. Kovnat, Solid Waste Regulation in Indian Country, 21 N.M. L. Rev. 121 (1990); Judith V. Royster & Rory SnowArrow Fausett, Control of the Reservation Environment: Tribal Primacy, Federal Delegation, and the Limits of State Intrusion, 64 Wash. L. Rev. 581 (1989).

^{257.} Jack Anderson, Companies Want to use Indian Lands as Dumps, S.F. Chron., Feb. 22, 1991, at A25 ("Indian land appeals to the waste merchants because the environmental regulations are less rigid").

^{258.} Charles Lee, Toxic Waste and Race in the United States, in RACE, supra note 8, at 10, 16 (discussing disposal of hazardous wastes in poor communities in general).

 $^{259.\} See$ Gover & Walker, Escaping Environmental Paternalism, supra note 21, at 934.

^{260.} See Jana L. Walker & Kevin Gover, Commercial Solid and Hazardous Waste Disposal Projects on Indian Lands, 10 Yale J. Reg., 229, 235-36 (1993) [hereinafter Walker & Gover, Commercial].

was passed, including the Clean Water Act. 261 the Clean Air Act. 262 the Solid Waste Disposal Act²⁶³ and later the Resource Conservation and Recovery Act. 264 CERCLA, 265 and the Safe Drinking Water Act,266 Congress failed to include the term "Indian country."267 Consequently, states lacked environmental enforcement authority in Indian Country.²⁶⁸ Some of these acts have since been amended.269 but Indian reservations are still in limbo, often not clearly governed by federal, state, or local environmental legislation.²⁷⁰ Despite the prominent role of nature, Earth, and wildlife in Indian life. Indian nations rarely have environmental regulations comparable to those of state and federal governments, in part because of the extreme poverty of many Indian communities.271 In this atmosphere of federal neglect, Indian tribes struggle with wastes already on their lands—some left by mining and other BIA sponsored efforts, some wastes from reservation life-and large amounts of waste dumped by strangers from outside the reservation.272

^{261. 33} U.S.C. §§ 1251-1377 (1988 & Supp. IV 1992).

^{262. 42} U.S.C. §§ 7401-7642 (1988 & Supp. IV 1992).

^{263. 42} U.S.C. §§ 6901-6991 (1988 & Supp. IV 1992).

^{264. 42} U.S.C. §§ 6981-6987 (1988 & Supp. IV 1992).

^{265.} Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. §§ 9601-9675 (1988 & Supp. IV 1992) (also known as "Superfund").

^{266. 42} U.S.C. §§ 300f-300j (1988 & Supp. IV 1992).

^{267.} See Walker & Gover, Commercial, supra note 260, at 236 ("Until 1986 none of the major federal regulatory statutes provided for delegation [of enforcement authority] to tribal governments.").

^{268.} B. Kevin Gover & Jana L. Walker, Tribal Environmental Regulation, 36 FED.

B. News & J. 438, 443 (Nov. 1989) [hereinafter Gover & Walker, Tribal].

^{269.} In November of 1984, EPA issued the Policy for the Administration of Environmental Programs on Indian Reservations. EPA Policy for the Administration of Environmental Programs on Indian Reservations, Nov. 8, 1984 [hereinafter EPA Policy Report]. See Walker & Gover, Commercial, supra note 260, at 236. The policy

sets forth nine principles by which EPA will pursue its objectives, including but not limited to EPA's commitment to work with tribes on a government-to-government basis, recognize tribes as primary decision-makers for environmental matters on reservation land, help tribes assume program responsibility, remove existing legal and procedural impediments to tribal environmental programs, and encourage tribal, state and local government cooperation in areas of mutual concern.

Id.

^{270.} Current EPA policy on jurisdiction of reservation environments is set forth in Regulatory Jurisdiction of Indian Tribes: Legal Analysis of the U.S. Environmental Protection Agency, published in the Preamble of the Indian Reservation Water Quality Standards Regulation, 56 Fed. Reg. 64,876 (1991) [hereinafter EPA Legal Analysis]. For discussions of the complex interplay of tribal, state, and federal jurisdictions, see generally Gover & Walker, Tribal, supra note 268; Royster & Fausett, supra note 256, at 619.

^{271.} Churchill & LaDuke, supra note 2, at 99.

^{272.} See, e.g., Lambrecht, supra note 167; Anderson, supra note 257.

While Indian country is virtually devoid of environmental protection laws, the United States presents an increasingly regulated and expensive market, causing American industry to seek economical ways to dispose of waste.²⁷³ Indian lands offer low cost, often remote waste lands for developers, while waste disposal opportunities offer income to tribes struggling for economic self-sufficiency. Recently, Indian nations have begun passing their own environmental regulations which do much more than "mimic the dominant society."²⁷⁴

4. Environmental Equity: Synergistic Effects

American environmental law is pieced together from a series of federal statutes. The statutes regulate the environment medium by medium, treating air, water, and land pollution separately. In addition, wastes are regulated under a series of statutes which depend upon the manner in which the waste was generated, the substance controlled, and the manner in which the pollution is generated.²⁷⁵ Under each statute or regulation, a separate level of pollutant or waste is permitted. Only under the most unusual circumstances will EPA work with other agencies who regulate the environment. Unregulated synergistic effects of toxic substances occur when exposures satisfy applicable medium by medium standards, but total exposure from the sum of all sources exceeds acceptable limits.²⁷⁶ In a relatively closed society, such as the reservation, these cross-medium exposures assume special significance. As isolated and land-based cultures, Indian reservations are uniquely at risk from the aggregation and interaction of nuclear and toxic hazards. Poor health and inadequate healthcare exacerbate the problems of environmental exposure to toxins.277

^{273.} Anderson, supra note 257.

^{274.} Knox, supra note 46, at 55. The Indigenous Environmental Network in Porcupine, South Dakota is involved in drafting such model codes. Id. at 54. Ironically, because Native Americans are currently exempted from many state and federal environmental laws, the tribes have broad authority to promulgate tribal environmental law; see also Reducing Risk, supra note 224.

^{275.} Take lead, for example. If the lead comes from workplace exposure it is controlled under OSHA. Reducing Risk, supra note 224. If it is in paint, it may be controlled only under local housing codes. Id. Lead in pipes may be covered by local housing ordinances and/or under the Clean Water Act or the Safe Drinking Water Act. Id.

^{276.} Reducing Risk, supra note 224. For example, the lead in pipes in the home and school, lead exposure in the workplace and lead in waste sites added together to determine the entire level of pollutants to which any given community or person within that community is exposed. *Id.*

^{277.} UNITED CHURCH, supra note 218, at 7. One of the report's three principle findings is:

The synergistic effects of toxic or nuclear disposal may have a potentially devastating effect on an Indian community. Indian reservations are uniquely at risk from the aggregation and interaction of nuclear and toxic waste hazards on the reservation. Uranium tailings and water pollution from the mining of deep ore cause the most concern.²⁷⁸ The synergistic effect of multiple exposures and multiple pathways is also of great concern. Multiple paths of nuclear exposure could include: occupational exposure to workers in nuclear waste facilities or in hauling or handling nuclear waste, air pollution, water pollution, eating contaminated food, contaminated waste and waste facilities, and contaminated homes and schools.²⁷⁹ Cattle on the reservation may graze on contaminated land, and fish, wildlife or crops may be affected by pollution as well.280 Infants will drink the breast milk of women who eat contaminated food. The heritage of nuclear pollution on many reservations, such as radioactive mill tailings contributes to the potential of cross-media exposure. Native Americans, impacted by poverty, poor health care, pollution, and toxic waste, are in a poor position to combat the increased risks created by nuclear waste.281

[C]onsideration of the racial and socio-economic status of a community when dealing with the issue of hazardous wastes is critical from a public health perspective. Many reports, such as the recent Report of the Secretary's Task Force on Black and Minority Health, issued by the U.S. Department of Health and Human Services [1985], have documented the lower health status of "minority" populations.... This status needs to be considered when priorities are set for the cleanup of hazardous wastes. Furthermore, consideration of existing health status needs to be incorporated into the decision-making process for the location of new facilities. Lacking this, there is the risk of compounding the serious preexisting health problems in [these] communities.

Id.

278. See generally Robinson, in RACE, supra note 8.

279. Robinson, in Race, supra note 8, at 158-59; see also Reducing Risk, supra note 224.

280. See, e.g., Tomsho, supra note 251, at A1.

In the 1960s, Mohawk ranchers started complaining that cattle grazing upwind from the Reynolds [Metals Co.] stacks were developing loose teeth, brittle bones and other problems. Farmer Earnest Benedict's Herefords started dying while giving birth. Mohawk hunters discovered strange markings on the hides of small game. Others reeled in bass and muskellunge with skin ulcers and deformed spines.

In 1978, studies by scientists from Cornell and other universities indicated that the sickly cattle were suffering from fluoride poisoning. They also found high levels of polychlorinated biphenyls (PCBs) and other toxins in the flora and fauna.

Id. The 9,000 residents of Akwesasne, the St. Regis Indian reservation, can no longer eat the fish from its waters, and fluoride poisoning has annihilated their cattle herds. Id. at A1, A6.

281. For an excellent discussion of such effects in the Navajo Nation see Robinson, in RACE, supra note 8.

5. Calculus of Benefits and Burdens in Indian Country

Applying the principles of distributional justice to Indian lands further elucidates the current environmental inequities which undergird the debate over nuclear waste in Indian country. Principles of distributional justice raise two different issues: 1) Are the benefits of environmental laws and programs distributed equally among citizens?; 2) are the risks of environmental harms distributed fairly among all communities? Native Americans and their lands have received little benefit from the nuclear power industry which created radioactive hazards across Indian country through mining and milling, and which generates nuclear waste. At operations near native communities, uranium was extracted for commercial nuclear power operations or weapons applications virtually irrelevant to the

direct economic or social needs of the residents of the mining regions. For the mine or mill operators, the political, environmental, economic and health impacts of uranium extraction on native and traditional communities have been of far lesser importance than the short-term economic value of the production of a strategic raw material like uranium.²⁸²

Indian reservations are removed both geographically and economically from those who benefit from nuclear power. Initial DOE studies recommended that the MRS facility "be located somewhere in the east-central United States, where ninety percent of all spent nuclear fuel in the United States is produced."283 All tribes considered by the Nuclear Waste Negotiator are in the west of the United States, while over eighty percent of the spent fuel, and the reactors that generate radioactive wastes, are east of the Mississippi.284 All proposed permanent repository and MRS sites are close to Indian lands, so the nation's radioactive waste will cross the borders of Indian country.

B. Native American Sovereignty

While much of the current analysis of environmental equity applies equally to Native Americans, African Americans, and other persons of color alike, crucial differences exist.²⁸⁵ The source of

^{282.} Robinson, in RACE, supra note 8, at 154.

^{283.} Mauro, supra note 123, at 120 (citing generally to U.S. Der't of Energy, The Need for and Feasibility of Monitored Retrievable Storage A Preliminary Analysis 3-4 (1985)).

^{284.} Kassen, supra note 138, at 50.

^{285.} The importance of reforming the relationship between Indian rights and environmental protection is discussed insightfully in Armstrong Wiggins, *Indian Rights and the Environment*, 18 YALE J. INT'L L. 345 (1993), and in Chang, *supra* note 45.

these differences lies primarily within the structure of race which has been, since before the adoption of the U.S. Constitution, a fundamental building block of American jurisprudence.²⁸⁶

At the time of the adoption of the U.S. Constitution, there were nearly 600 independent and confederated indigenous nations, with different cultures, languages, and laws, in America.²⁸⁷ Using a race-based designation, all of these disparate nations were labeled "Indians" and were given separate constitutional treatment under Article I of the Constitution.²⁸⁸ Indians were exempted from the "people of the United States" due to their status as nations with whom treaties were made and with whom commerce could be carried on.²⁸⁹ Constitutional law ultimately determined that these Indian nations had only limited sovereignty, dependent upon the sovereignty of the United States.²⁹⁰

African Americans were also categorized separately under the Constitution. Not only were African Americans excluded from the entire concept of "people," they were treated not as nations but as chattel.²⁹¹ The Constitution and laws of the nation declared per-

287. John W. Ragsdale, Jr., Indian Reservations and the Preservation of Tribal Culture: Beyond Wardship to Stewardship, 58 U.M.K.C. L. Rev. 503, 506 (1991) (citing C. Snipp, American Indians 10 (1989)).

288. The complex inter-relationship of race and sovereignty is dealt with in an intriguing and important manner in Chang, supra note 45, at 851 n.14, 860-65.

289. The U.S. Constitution mentions Indians three times. Phillip P. Frickey, Congressional Intent, Practical Reasoning, and the Dynamic Nature of Federal Indian Law, 78 Cal. L. Rev. 1137, 1138 n.8 (1990). Two references specify that "Indians not taxed" are to be ignored in apportioning the House of Representatives. U.S. Const. art. I, § 2, cl. 3; U.S. Const. amend. XIV. The third mention is the "Indian Commerce Clause." U.S. Const. art. I, § 8, cl. 3. The Indian Commerce Clause authorizes Congress to "regulate Commerce with foreign Nations, and among the several states, and with the Indian Tribes." Id. See also Cotton Petroleum Corp. v. New Mexico, 490 U.S. 163, 192 (1989) ("the central function of the Indian Commerce Clause is to provide Congress with plenary power to legislate in the field of Indian affairs").

290. See generally William C. Canby, Jr., The Status of Indian Tribes in American Law Today, 62 Wash. L. Rev. 1 (1987); Robert N. Clinton, Isolated in Their Own Country: A Defense of Federal Protection of Indian Autonomy and Self-Government, 33 Stan. L. Rev. 979 (1981) [hereinafter Clinton, Isolated in Their Own Country].

291. U.S. Const. art. I, § 2 ("Representatives and direct Taxes shall be apportioned among the several states... adding the whole number of free Persons... and... three fifths of all other Persons.").

^{286.} Chang, supra note 45, at 851 n.14, 860-65. Racial categorization has dramatic and disastrous consequences for the individuals classified as members of a stigmatized race. See generally A. Leon Higginbotham, Jr., In the Matter of Color, Race and the American Legal Process: The Colonial Period (1978); Kenneth L. Karst, Belonging to America (1989); Williams, Discourses of Conquest, supra note 20; Louis F. Claiborne, Black Men, Red Men, and the Constitution of 1787: A Bicentennial Apology From a Middle Templar, 15 Hastings Const. L.Q. 269 (1988). Yet race is merely a social construct, deliberately used to exercise power and justify oppression over certain individuals and cultures since the time of the European colonization. Williams, Columbus's Legacy, supra note 242, at 359.

sons of African American ancestry a different "race," subject to the white race and subject to treatment different from the Indian "race." Most Native Americans, African Americans, and many Hispanics share the historical status of "coerced," as opposed to "consenting" Americans.²⁹³ Because of their history of having become part of the United States by force, they share oppression based upon both race and the deprivation of sovereign rights.²⁹⁴

In order to understand the position of Native Americans in environmental law, the twin issues of racism and sovereignty must be understood. Federal Indian law emerged from constitutional language, treaty, and statute.²⁹⁵ The process involved the conversion of all indigenous peoples into one "race" ("Indians"),²⁹⁶ whom the law declared "savages,"²⁹⁷ whom the colonists had "discovered"²⁹⁸ and simultaneously "conquered," rendering them "dependent"²⁹⁹ upon the United States' sovereignty.³⁰⁰ Congress claims the plenary power to impose its laws on Indian nations.³⁰¹ This virtually unlimited plenary power of Congress over Indian tribes means that even during the nuclear debate concerning uses of Indian lands, the Congress of the United States has almost complete power to overrule any decisions made by tribes.³⁰² The Supreme Court held that Congress has the legal authority to unilaterally abrogate treaties

^{292.} See generally Higginbotham, supra note 286.

^{293.} Chang, supra note 45, at 863-64.

^{294.} Id. at 860-69.

^{295.} See Skibine, supra note 166, at 87 n.3.

^{296.} See generally Jack D. Forbes, Africans and Native Americans: The Language of Race and the Evolution of Red-Black Peoples (2d ed. 1993) (discussing the complex and often forgotten origins and usages of racial terminology).

^{297.} Supreme Court Justice Joseph Story said, "As infidels, heathens, and savages, Native Americans were not allowed to possess the prerogatives belonging to absolute, sovereign, and independent nations." J. Story, Commentaries, § 152, reprinted in M. Lindley, The Acquisition and Government of Backward Territory in International Law 29 (1926), quoted in Williams, Columbus's Legacy, supra note 242, at 368 n.34.

^{298.} Johnson v. M'Intosh, 21 U.S. (8 Wheat) 543 (1823). The Doctrine of Discovery is discussed and explained in Williams, *Columbus's Legacy*, *supra* note 242, at 368 n.3.

^{299.} Cherokee Nation v. Georgia, 30 U.S. (5 Pet.) 1, 17-18 (1831) (holding that, based on the "habits and usages" of Indian tribes, they were rendered pupils of the U.S. and were "domestic dependent nations"); see also Judith Resnik, Dependent Sovereigns: Indian Tribes, States, and the Federal Courts, 56 U. Chi. L. Rev. 671 (1989).

^{300.} See Worcester v. Georgia, 31 U.S. (6 Pet.) 515 (1832); Cherokee Nation v. Georgia, 30 U.S. (5 Pet.) 1 (1831); Johnson v. M'Intosh, 21 U.S. (8 Wheat.) 543 (1823); see generally F. Cohen, Handbook of Federal Indian Law 207-57 (1982).

^{301.} See Cotton Petroleum Corp. v. New Mexico, 490 U.S. 163, 192 (1989); see also supra note 34 and accompanying text (discussing Congress' plenary power over Indian tribes).

^{302. 490} U.S. at 239.

with Indian nations.³⁰³ Racism toward Native Americans played a central role in the creation of U.S. Indian policy and land ownership.³⁰⁴ The trust doctrine influenced the right of the U.S. to acquire Indian land for its white citizens; and to control Indian economic and natural resource development, and intergovernmental relations.³⁰⁵ The current economic conditions of Native Americans today derive in large part from this web of legal doctrines which define Native Americans' legal status. The resulting limitations on economic development are a major force behind tribal consideration of the nuclear waste trade. It is important to keep in mind that all of these legal and economic issues have their roots, at least in part, in the very definition of Indians as a "race" in federal law and in the minds of dominant Americans.³⁰⁶

The analysis of environmental equity in Indian country raises two issues. First, the federal government may force tribes, by the power of law or economics, to accept nuclear waste. Freedom from coerced or forced siting of hazardous wastes is a central tenant of environmental equity. Second, the government may deny Native Americans the right to make their own decisions concerning the acceptance of nuclear waste or the hosting of the MRS facility, based

^{303.} Sioux Nation of Indians v. United States, 601 F.2d 1157, 1173 (1979) (Nichols, J., concurring), aff'd, 448 U.S. 371 (1980). See also Lone Wolf v. Hitchcock, 187 U.S. 553, 566 (1903).

Lonewolf [sic] transmogrified the guardian-ward concept, originally conceived for the benefit of the tribes, into a Dickensian relationship granting the guardian extraordinary power, absolving him of any wrongdoing, and leaving the ward essentially powerless. What John Marshall envisioned as a relationship binding the government to the Indians according to "moral obligations of the highest responsibility and trust," the Lonewolf court refashioned to suit the convenience of a conquering people imposing its will.

EDWARD LAZARUS, BLACK HILLS, WHITE JUSTICE: THE SIOUX NATION VERSUS THE UNITED STATES, 1775 TO THE PRESENT 170 (1991).

^{304.} See generally WILLIAMS, supra notes 20 and 242; Robert A. Williams, Jr., Encounters on the Frontiers of International Human Rights Law: Redefining the Terms of Indigenous People's Survival in the World, 1990 DUKE L.J. 660 [hereinafter Williams, Encounters].

^{305.} John C. Mohawk, Indian Economic Development: An Evolving Concept of Sovereignty, 39 Buff. L. Rev. 495 (1991); Clinton, Isolated in Their Own Country, supra note 290, at 1001-04 (1981). One author described the Indian trust doctrine as "racial discrimination and unfettered United States power disguised as moral legal duty." Indian Law Resource Center, United States Denial of Indian Property Rights: A Study in Lawless Power and Race Discrimination 15, 19 (National Lawyers Guild, Rethinking Indian Law IV, 1982).

^{306.} Nancy Carol Carter, Race and Power Politics as Aspects of Federal Guardianship over American Indians: Land-Related Cases: 1887-1924, 4 Am. Indian L. Rev. 197, 225-29 (1976); Sharon O'Brien, Tribes and Indians: With Whom Does the United States Maintain a Relationship?, 66 Notre Dame L. Rev. 1461, 1482-86 (1991); David C. Williams, The Borders of the Equal Protection Clause: Indians as Peoples, 38 UCLA L. Rev. 759 (1991).

upon stereotypes or objectification of Indians. To determine whether siting or refusing to site nuclear waste in Indian country constitutes environmental racism, we must make one pivotal query: Does the act contribute to the structure of racial and national subordination and domination of Native American peoples?

1. Differences From Other Communities of Color

Understanding the differences in legal doctrines of race and their modern day effects upon the rights of Indian and non-Indian persons of color is essential to any meaningful application of the principles of environmental equity. The law governing Native Americans is different from that governing African Americans and members of other stigmatized races. While both the title "Indian" and the severely limited sovereignty of Native Americans derive from racism, 307 Native Americans were nonetheless granted crucial status under the Constitution which was denied other persons of color. Once African Americans became recognized as full persons under the Constitution, they and other non-Indian persons of color did not attain sovereignty, but only individual and human rights. 308 The concept of "race" permitted the colonists to get needed land from tribes made up of the "Indian race" and free labor from the "African race" to establish the new nation. 309

Second, Indian tribes have sovereign rights to their own lands, and at least limited protection over what federal and state governments can do to and on their lands.³¹⁰ Indian tribes have a "landbased heritage" which provides for community-based property rights.³¹¹ This is the major exception in U.S. law to the primacy of private property rights.³¹² Once waste or other environmental hazards contaminate their land, Native Americans cannot simply

^{307.} See generally Williams, supra notes 20, 242, and 304.

^{308.} Rodriguez, supra note 22, at 22.

^{309.} See generally Derrick Bell, Faces at the Bottom of the Well: The Permanence of Racism (1992); Williams, Columbus's Legacy, supra note 242, at 358.

^{310.} See generally CLINTON ET AL., supra note 165; Carole Goldberg-Ambrose, Not "Strictly" Racial: A Response to "Indians as Peoples," 39 U.C.L.A. L. Rev. 169 (1991); Frank Pommersheim, Making All the Difference: Native American Testimony and the Black Hills (A Review Essay), 69 N.D. L. Rev. 337 (1993) [hereinafter Pommersheim, Making All the Difference].

^{311.} Tarlock, supra note 37, at 871-73; See generally Frank Pommersheim, The Reservation as Place: A South Dakota Essay, 34 S.D. L. Rev. 246 (1989) [hereinafter Pommersheim, Reservation as Place].

^{312. &}quot;[T]he framework remains restricted to conquered peoples who have survived efforts to exterminate or assimilate them." Tarlock, supra note 37, at 890 (citing Williams, Discourses of Conquest, supra note 20). While the concept described by Tarlock is useful in distinguishing Native Americans from Euro-Americans and others who have voluntarily emigrated to the United States, his comment seems to imply that all persons who were conquered and exposed to genocide have community

move away from toxic waste and still retain their sovereignty.³¹³ The nature and extent of protection for Native Americans depends very largely upon the membership of Indian people in federally recognized Indian tribes and, in addition, their residence on or near the reservation in what is legally recognized as Indian country. Indian nations, therefore, must generate enough new jobs for their young on the reservation each generation. Finally, for many Native American nations, land is far more than a commodity or a space, it is sacred.³¹⁴

One of the main dangers of dealing with the environmental racism is that we tend to essentialize the persons, communities, and nations to whom we apply the doctrine. It is not sufficient to treat all discrimination as a unitary phenomenon, assuming that racism affects all persons—African American, Latino, and Native American—in the same manner. When we essentialize, the importance of difference is lost, and the resultant analysis will misstate the problem and lead to erroneous "solutions." Tribes are often affected by environmental equity issues in many of the same ways as other communities of color. As the ensuing discussion points out, all are affected by disproportionate hazardous siting, unfair distribution of environmental benefits and burdens, inequitable environmental enforcement, lack of political power, and synergistic effects of hazardous materials. Yet there are special concerns with respect to Native Americans that do not affect other persons of color.

Most of the currently proposed solutions to environmental equity problems would compound rather than resolve these issues for Native Americans where sovereignty and race are intertwined. Much of the literature conceives of environmental racism as a civil rights issue without considering that for Indian nations it is also, or

property rights. This is misleading since the descendants of African persons conquered and subjected to slavery have no such rights.

^{313.} Nor are they likely to move to toxic waste sites because land is devalued by waste operations, a factor a number of scholars believe plays a role in the high percentages of persons of color near toxic waste sites. See generally Vicki Been, What's Fairness Got To Do With It? Environmental Justice and the Siting of Locally Undesirable Land Uses, 6 Cornell L. Rev. 1001 (1993).

^{314.} Pommersheim, Making All the Difference, supra note 310, at 352-53; Pommersheim, Reservation as Place, supra note 311, at 269. For a different view of the sacred nature of the Black Hills, see DAVID WORSTER, UNDER WESTERN SKIES: NATURE AND HISTORY IN THE AMERICAN WEST 116-20 (1992); see also supra note 37 (describing Navajo (Dineh) conception of nature).

^{315.} See infra note 361 (discussing "essentialism").

^{316.} We can accomplish the most "simply by identifying the right questions, which are so often missed, and in turn, preclud[e] any reasonable expectation of obtaining the right answers." Pommersheim, Making All the Difference, supra note 310, at 356.

even primarily, an issue of sovereign rights.317 In many cases, Indians are being denied the right of self-determination. In addition, the remedies proposed are, in most cases, based on state law.318 Such remedies may be effective for other communities of color, but they offer nothing to Indian tribes. Proposed state and federal legislation which would bar additional siting of toxic or hazardous waste in communities of color may have a salutary effect for other stigmatized communities but they are an affront to Indian nations. First, they deprive the tribe of its sovereign right to determine its own environmental policy. Second, Indian communities are currently in a position to establish their own terms in the hazardous waste trade and consequently profit from it. This is an opportunity rarely available to communities of color. In short, the issue of choice is essential to the exercise of sovereign powers by Native Americans. Where absolute prohibitions and mandatory legislation may be useful in obviating racial discrimination, they may be an anathema to self-rule.

The question for Indian nations is first, who decides? Only after that query is answered in favor of Indian sovereignty can we turn our attention to the second question, what shall be done? Because of the differences imposed by the history of Indian law in the United States, different solutions may be necessary to provide environmental equity to both Indians and other persons of color.

1. Government-to-Government Relations

From the earliest constitutional cases during the infancy of the United States, through the current term of the U.S. Supreme Court, the scope and extent of Indian tribal sovereignty has been one of the battlegrounds upon which the nature of power in this land has been fought out. The pendulum of U.S. policy toward Indian tribes has swung between isolation and assimilation.³¹⁹ The current era is heralded by many as the time of Indian self-determination, with Presidents, including Reagan and Bush, announcing self-determination as the new policy of the nation. Characterized as "government-to-government relations," current policy dictates that the federal and tribal sovereigns are to work together.³²⁰

^{317.} Chang, supra note 45, at 863, 865-67; Bullard, supra note 225, at 327. See generally Collin, supra note 225.

^{318.} See, e.g., Reich, supra note 225, at 314; Tsao, supra note 225, at 379-405.

^{319.} See Wilson, supra note 164 (describing trends in Indian policy).

^{320.} This policy was adopted by President Reagan and reiterated by President Bush. President's Statement on Indian Policy, Pub. Papers 96-100 (Jan. 24, 1983) (stating that the Reagan administration's policy is to "reaffirm dealing with Indian tribes on a government-to-government basis").

However, these policies of self-determination bring Indian nations into conflict with the states in which reservations are situated.³²¹

In keeping with government-to-government relations with Indian tribes, congressional and administrative policies in recent years focused on the rights of Indian nations to develop their own environmental policies and to control the environment on their reservations.³²² This policy was apparent in a resolution accompanying the 1991 amendments to the Clean Air Act. 323 EPA policy recognizes the importance of treating the reservation as a place, governed by one sovereign, either federal or Indian.³²⁴ The EPA recognizes the right of tribes, under appropriate circumstances, to control the reservation environment for all land and citizens on the reservation, without regard to the type of land title or demographics of reservation residents.325 If fully executed, tribal environmental management will become a model for effectuating self-determination as one of the primary rights of a sovereign nation.

The NWPA treatment of tribes and states as equals is a clear reflection of current federal Indian policy based on government-togovernment relations. EPA's current environmental policy is entirely consistent with permitting Indian nations to make independent determinations concerning the location of nuclear waste sites on tribal lands. Environmental policy underscores the right and importance of permitting federal and tribal sovereigns to work together to assure tribal safety and health rather than permitting state governments or local communities to control these issues. It also highlights the importance of Indian involvement in structuring and enforcing environmental controls over waste on reservation lands.

3. Compensated Siting

Apparently Leroy believes in the law of averages and that of a shotgun approach. Talk to many tribes and you may bag one. P.T. Barnum once said, "there's a sucker born every day." But Mr. Leroy is quick to point out that the "issue isn't money." He

^{321.} See generally Steven M. Feldman, The Developing Test for State Regulatory Jurisdiction in Indian Country: Application in the Context of Environmental Law, 61 OR. L. REV. 561 (1982); Sidney L. Harring, Crazy Snake and the Creek Struggle for Sovereignty: The Native American Legal Culture and American Law, 34 Am. J. LEGAL HIST. 365 (1990); Pommersheim, Tribal-State Relations, supra note 36; Resnik, supra note 299; Jane M. Smith, Republicanism, Imperialism, and Sovereignty: A History of the Doctrine of Tribal Sovereignty, 37 Buff. L. Rev. 527 (1988-89). 322. Gover & Walker, Tribal, supra note 268, at 440.

^{323.} See EPA Legal Analysis, supra note 270.

^{324.} See id.

^{325.} See id.

says that as "a prospective host [the tribe] is entitled to an equity for helping to solve a national problem." Does he mean it is patriotic to store the radioactive material in your back yard?... But if the issue is not money, what pays for the enticements? And could this process be called bribery?³²⁶

The 1987 amendments to the NWPA created a compensated siting program for high-level nuclear waste.³²⁷ Under the NWPA provisions, the state or tribe voluntarily agrees to accept the facility and receives payment in exchange for the agreement.³²⁸ Participation in the compensated siting program is conditioned upon the state or tribe waiving its right of disapproval for nuclear waste siting under the NWPA.³²⁹ The host may receive up to five million dollars for each year preceding the arrival of the nuclear waste and up to ten million dollars for each year after the waste arrives until closure of the facility.³³⁰

One of the three principle findings of the influential United Church of Christ Commission for Racial Justice report involved compensated siting.³³¹

The hazardous waste issue . . . has become very much linked to the state of the economy in a given community. These communities have been, and continue to be, beset by poverty, unemployment and problems related to poor housing, education and health. These communities cannot afford the luxury of being primarily concerned about the state of their environment when confronted by a plethora of pressing problems related to their day-to-day survival. Within this context, racial minority communities become particularly vulnerable to those who advocate the siting of a hazardous facility as an avenue for employment and economic development. Thus, proposals that economic incentives be offered to mitigate local opposition to the establishment of new hazardous facilities raise disturbing social policy questions.³³²

Nuclear siting in Indian country exemplifies this disturbing situation. Does compensation ameliorate or exacerbate the environmental equity concerns raised by nuclear waste siting in Indian

^{326.} Savilla, supra note 16, at 8.

^{327.} NWPA §§ 170-171 (codified as amended at 42 U.S.C. §§ 10172-10173).

^{328.} Id.

^{329.} NWPA § 171(b)(2) (codified as amended at 42 U.S.C. § 10173(a)).

^{330.} NWPA § 171(a)(1) (codified as amended at 42 U.S.C. § 10173(a)). These payments are in lieu of funding under Sec. 118(b), the funds to be used to offset "any potential economic, social, public health and safety, and environmental impacts" of siting which is not done pursuant to a voluntary agreement. NWPA § 118(b) (codified as amended at 42 U.S.C. § 10138); see also NWPA § 171(b)(5) (codified as amended at 42 U.S.C. § 10173(a)).

^{331.} UNITED CHURCH, supra note 218, at 7.

^{332.} Lee, in RACE, supra note 8, at 16 (discussing findings of the United Church study).

country? On one hand, compensation may be viewed as ameliorating the unfair consequences of siting, providing much needed economic growth, and therefore as resolving concerns over environmental racism. On the other, it can be seen as deliberately exploiting the special status of these land-rich, economically poor, and isolated sovereigns in order to secure a dumping ground where the community is in a poor position to object to the infusion of economic incentives.

There are a number of strong arguments for the use of compensated siting to infuse much needed economic stimulus into Indian tribes who have long suffered from legally imposed barriers to economic development. Some commentators suggest that the inequities created by the siting of toxic waste in communities of color can be overcome by providing subsidies or what has been termed "equitable mitigation for the costs of environmentalism." 333

Scholars endorse the compensated siting approach as a means of finding a willing host for nuclear waste and of avoiding the acrimony, litigation delay, and obstructions attendant upon siting nuclear waste in an unwilling jurisdiction.³³⁴ Several states adopted compensated siting statutes in an effort to garner community cooperation in hazardous waste siting.³³⁵

Looking at the waste industry as a form of economic development . . . it can be a good match for tribal communities. The industry is usually willing to pay the costs of developing new projects without requiring a tribe to put any cash up front. Since most tribes just do not have the money to independently fund large-scale economic development, this makes the industry attractive to Indian communities desperate for development. The waste industry needs isolation and an abundance of land, and, again, because of the overall lack of tribal economic development, undeveloped land is a resource that many tribes have. 336

^{333.} Tarlock, supra note 37, at 898. Four solutions to the problems are sketched out by Tarlock: "respect for legitimate property entitlement, cultural sensitivity, sustainable development, and subsidy." Id. at 900; see id. at 883-900 for a more thorough discussion.

^{334.} Topol, supra note 100, at 830-36.

^{335.} Statutes in Massachusetts and Connecticut provide compensation to local communities that receive hazardous waste facilities. See Conn. Gen. Stat. § 22a-128(c) (1991); Mass. Ann. Laws ch. 21D, § 14 (Law. Co-op. 1988 & Supp. 1991). See also Topol, supra note 100, at 833.

^{336.} Gover & Walker, Escaping Environmental Paternalism, supra note 21, at 935-36. It is important to note that the cited article does not discuss nuclear waste or even the acceptance of hazardous waste, yet in many respects the model applies here.

In essence, tribes searching for potential sources of economic development see an opportunity to exchange the use of part of their land in return for some level of economic self-sufficiency.³³⁷

For example, the Mescalero Apache Tribe, the first tribe to come forward for a feasibility grant, has 3,500 members.³³⁸ Its reservation encompasses 460,000 acres, and it suffers from thirty-five percent unemployment.³³⁹ These statistics exist despite the fact that the Mescaleros are self-sufficient and dubbed by some as a "commercially savvy" tribe,³⁴⁰ who operate a \$30 million ski resort, a \$20 million luxury resort complex, and other tribal businesses.³⁴¹ Half of the tribe is under the age of 18; therefore, providing jobs for the next generation is a priority.³⁴²

While it is true that Indian lands and the lands surrounding them have long been over-burdened with environmental hazards, it is important to analyze the equities of this situation accurately before stating simply that it would be unfair for Indians to have more nuclear hazards on their lands. Many of the existing nuclear hazards are from facilities on federal land, such as the Hanford Nuclear Facility near the Yakima, Nez Perce and Umatilla Indians. the WIPP site near the Mescalero Apaches or the test sites in the Four Corners region.343 The tribes receive little or no benefit from these federal facilities. While mining and milling on reservations produced some profit for the tribes involved, early BIA leases vielded very low levels of financial return in exchange for the hazards of the leases. Nevertheless, these uranium lease royalties are essential to some tribal economies.344 In addition, tribes generally receive no compensation for their exposure to years of nuclear testing and other contamination of their lands.345 The Mescalero, for example, received no benefit from the nuclear hazards in New

^{337.} Some have suggested that compensation be given to indigenous peoples who agree to retain an environment free of environmentally detrimental uses. See Huffman, supra note 18, at 916.

^{338.} Michael Haederle, Nuclear Dump Study Triggers Tribal Fears, L.A. Times, Dec. 10, 1991, at A5.

^{339.} Sandra Sanchez, NM Reservation Sees N-Waste Dump as Gold Mine, USA Today, Nov. 21, 1991, at 8A.

^{340.} Bill Workman, U.S. Hopes Indians Take A-Waste, S.F. Chron., Dec. 5, 1991, at A11.

^{341.} Ski Apache, near Ruidoso, New Mexico, and a resort complex, the Inn of the Mountain Gods. Sanchez, supra note 339, at 8A; see also Hudson, supra note 38.

^{342.} All Things Considered, supra note 48. 343. Churchill & LaDuke, supra note 2, at 402.

^{344.} Becky J. Miles Viers, Environmental Law: Uranium Mining on the Navajo Reservation, 7 Am. Indian L. Rev. 115, 116 (1979) (citing U.S. Comm'n on Civil Rights Report, The Navajo Nation: An American Colony 24 (1975)).

^{345.} See supra note 180 and accompanying text (discussing DOJ denial of compensation claims of miners exposed to radiation).

Mexico.³⁴⁶ Yet the existence of these hazards is often used as the primary argument to block the Mescalero's bid for the MRS agreement.

The MRS process is strikingly different in concept and in potential economic outcome: the tribes are seeking the nuclear waste trade and stand to gain economically, through economic improvements and other incentives. It may be a very good bargain indeed if the waste trade is as safe as the Nuclear Waste Negotiator promises.

The success of the compensated siting approach of the NWPA, however, is limited by the amount of money that Congress is willing to appropriate to secure voluntary agreement from the host. At some point, the amount demanded by a potential host will exceed Congress' willingness to pay. Overly high host demands could lead the government to consider other methods. Not only does Congress possess plenary power to force siting on Indians, but the Supreme Court supports the federal government's right to override state attempts to exclude foreign wastes.³⁴⁷ If the cost of voluntary siting is too high, Congress can also turn to federal land, as it did for the Yucca Mountain repository site. While there are currently no definitive Congressional limits on MRS funding, recent discussions have turned from compensated siting to placing the waste on federal lands.

In theory, compensated siting pays for the externalities created by noxious siting and requires other communities to pay for these costs; consequently, other communities do not receive a windfall and the host community is paid fairly for its efforts. There are, however, very strong arguments supporting the position that the essence of compensated siting is to take advantage of economic desperation in order to secure a waste site. First, when the government offers to pay a community to accept nuclear waste, issues of placing a value on human life and safety are inherent in the calculation. Tribes are subjected to the risk, however remote, of whole scale genocide. Moreover, there is no accurate means of ascertaining either the detriment to the host community or the benefit to the rest of the nation in order to establish a fair compensation package.³⁴⁸ Instead, the statute offers a compensation limit and invites

^{346.} Hudson, supra note 38.

^{347.} See, e.g., Chemical Waste Management, Inc. v. Hunt, 112 S.Ct. 2009 (1992); Fort Gratiot Landfill v. Mich. Dept. of Nat. Resources, 112 S.Ct. 2019 (1992); New York v. United States, 112 S. Ct. 2408 (1992); Philadelphia v. New Jersey, 437 U.S. 617 (1978).

^{348.} See generally R. George Wright, Hazardous Waste Disposal and the Problems of Stigmatic and Racial Injury, 23 Ariz. St. L. J. 777 (1991). In addition to many

communities to bid for it. While tribes may hope for additional jobs and tax income, "[h]azardous-waste management facilities are capital-intensive rather than labor-intensive and generally do not offer much of a tax bonanza to local communities." 349

Minority communities may also be more vulnerable to incentives or compensation . . . [and] sometimes solicit the location of hazardous waste facilities in order to boost their local economy and provide jobs. Opposition to a hazardous waste site . . . is impeded when the economic benefits, such as jobs or other incentives, create divergent community interests and fragment community goals.³⁵⁰

Even if it were possible to accurately ascertain and pay for all obvious externalities created by nuclear siting, this would not resolve concerns about environmental inequity surrounding the placement of vet another offensive and potentially dangerous waste site within a community of color. The very state of economic desperation in these communities often makes them the only willing hosts. The history of attempts to establish compensated siting programs for hazardous waste suggests that most citizens do not consider the potential safety costs, health effects and stigmatization resulting from proximity to hazardous waste facilities compensable. Communities repeatedly decline to "explicitly surrender part of their safety or tranquility in return for compensation."351 Many Indian communities demonstrate this same unwillingness to accept hazardous waste even in the face of substantial economic incentives.352 Ultimately, there is no guarantee that any tribe will accept the nuclear waste voluntarily, even if substantial payment is promised.353

other injuries difficult to calculate, the author discusses the stigmatic and dignitary injuries, and associated economic costs, of becoming the "dumping ground for . . . the entire nation." *Id.* at 784.

^{349.} A. Dan Tarlock, Anywhere but Here: An Introduction to State Control of Hazardous-Waste Facility Location, 14 Land Use & Env't L. Rev. 533, 544 (1983) [hereinafter Tarlock, Anywhere but Here]. Indian tribes are permitted to recover an amount equal to the commercial tax on the development and operation of the MRS pursuant to NWPA § 118(b)(4) (codified as amended at 42 U.S.C. 10138(b)(4)).

^{350.} Chase, supra note 240, at 346; see also Robert Bullard, Environmental Blackmail in Minority Communities, in Race, supra note 8, at 82, 82-84; Book Note, Environmental Activism and the Collective Action Problem, 104 Harv. L. Rev. 1705, 1709 (1991) (reviewing Phil Brown & Edwin J. Mikkelsen, No Safe Place: Toxic Waste, Leukemia, and Community Action (1990)).

^{351.} Lawrence S. Bacow & James R. Milkey, Overcoming Local Opposition to Hazardous Waste Facilities: The Massachusetts Approach, 6 Harv. Envil L. Rev. 265, 276 (1982).

^{352.} In 1991, members of the Hualapai tribe in Arizona, under the leadership of elder Lena Bravo, turned back an effort by Energy Fuels Nuclear, a corporation which sought to strip-mine uranium on tribal land. Knox, supra note 46, at 54.

^{353.} Bacow & Milkey, supra note 351, at 276.

Moreover, no matter how much compensation is paid each year, once the MRS closes, all funding ends. The danger, however, may remain. Any leakage from the facility will be in the air, ground, and water essentially forever.

In other words, long-term consequences foreclose short-term advantages where uranium production is concerned. Of course, the "right" Indian negotiator might be able to bargain the royalty rates to a higher, more "acceptable" level. But, to what avail? This short-run "gain" is a mirage. No matter how much cash comes from resource sales by tribal managerial elites, it can only be "invested" in a homeland which is seen to be uninhabitable, a people soon to be extinguished. 354

In the end one fact stands out. The compensation offered under the NWPA was insufficient to induce a single state to agree to study hosting the MRS.

C. Bias as a Factor in Nuclear Waste Siting in Indian Country

In the future, laws and democratic processes must replace the myths and arbitrary governmental power that now deny Indian rights and threaten Indian environments.³⁵⁵

Federal power over tribal sovereignty is founded upon the roots of racism, but limits upon Indian sovereignty alone are insufficient to explain the full extent of environmental inequities visited upon Native Americans. Deeply imbedded racist stereotypes also contribute to the position of Indians today. Stereotypical notions render Indians second class citizens in their own lands. Aspects of America's stereotypical view of Native Americans, often incorporated in law and public policy, preclude or impede equitable treatment of tribes in environmental matters.

1. Stereotypes of Indians Which Cause Siting Problems

American law, literature, and mass media contribute to the dominant culture's view of Native Americans as historical artifacts, frozen in prehistory. Indians are imbued with society's romantic notions. Modern "New Age" ideas contribute to these romanticized ideas of Indian culture, environmental values, wisdom, and religion. While many of these ideas may represent long overdue respect for Native Americans from members of the dominant soci-

^{354.} Churchill & LaDuke, supra note 2, at 111.

^{355.} Wiggins, supra note 285, at 351.

^{356.} Two recent historical Indian films, Dances With Wolves and Geronimo, center on tribes who are today caught up in modern battles over toxic waste siting: the Mescalero's over nuclear waste and the Rosebud Sioux whose Good Road Coalition just defeated a profitable waste dump on its reservation.

ety,³⁵⁷ the ideas also essentialize and homogenize widely diverse peoples into one single entity. The vision of Indians that emerges is that they are shrouded in history and in need of the dominant culture's protection.

These ideas have developed into a "malignant romanticism"358 which infests our notions of what Indian peoples should do with their lands. Environmentalists, in pursuit of "Indian's best interests" may engage in stereotypical thinking, characterized by romanticism, which effectively deprives Native Americans of the right to make their own decisions about accepting waste on their lands. It is important to break down this malignant romanticism into its major component stereotypes so that we recognize them and strip them from our law and policy. Some of these stereotypes include viewing "real Indians" as historical, primitive, unsophisticated, and rapidly on their way to extinction; essentializing the hundreds of Indian tribes into one group; assigning Indians the role of guardian of our environment as well as theirs; failing to recognize Native American tribes as modern, twentieth century sovereign nations within the United States; and viewing Indians as dependent and in need of our protection and guidance. Each of these stereotypes interferes with equitable environmental treatment of tribes and will be discussed individually.

First, the dominant society often embraces the view that Indian nations are historical, and that Indians are primitive creatures of some past age.³⁵⁹ In this view, Indians will soon disappear from the nation, through either death or assimilation.³⁶⁰ This stereotype is utterly inconsistent with Indian nations' decision to enter into sophisticated, twenty-first century ventures like nuclear waste disposal.

Second, American culture tends to essentialize vastly diverse Native American cultures, treating them all as uniformly "Indian." ³⁶¹ Indian tribes represent diverse and distinct peoples with

^{357.} Huffman, supra note 18, at 901-02.

^{358.} Torres, supra note 21, at 844. Torres is currently the Deputy Attorney General for the Environmental Division of the United States Department of Justice, placing him in a unique position to influence and litigate national policy from the perspective of environmental equity; see also Wiggins, supra note 285, at 349-51.

^{359. &}quot;[P]rimitive precursors of their modern, highly Westernized counterparts." Chang, supra note 45, at 868 n.62.

^{360.} Wiggins, supra note 285, at 346-47 (quoting Justice John Marshall Harlan, Lecture at George Washington University Law School 12 (Jan. 8, 1898) (unpublished manuscript, on file at Library of Congress Manuscript Room)).

^{361.} See, e.g., Angela Harris, Race and Essentialism in Feminist Legal Theory, 42 Stan. L. Rev. 581, 585 (1990) (discussing "gender essentialism," the notion that a unitary "women's experience can be isolated and described independently of race, class, sexual orientation, and other realities of experience").

their own languages, traditions, governments, religions, and values. They vary enormously in socio-economic status and in business development. To accommodate these different nations with their different approaches to environmental regulation, environmental law must adopt a flexible approach that incorporates a variety of negotiable rights, capable of adapting to the unique circumstances of each tribe.³⁶²

Third, environmentalists repeatedly treat Indian tribes as the guardians of nature, imposing upon them a special responsibility to preserve our environment. Many environmentalists homogenize and romanticize all Native Americans as environmentalists who desire to keep their land free of all economic development.³⁶³ Dominant society feels entitled to deny Indians the right to engage in the waste trade on the assumption that this is what Indians want. Environmentalists are willing to deny Indian autonomy in the name of enforcing so-called "Indian values."³⁶⁴ Indian self-determination requires that Indians decide their degree of participation in the nuclear waste trade.

Fourth, the sovereign status of Indian nations is recognized by law but is repeatedly and steadfastly ignored by communities surrounding Indian reservations.³⁶⁵

Fifth, the dependent status of Indian tribes is a matter not only of legal doctrine, but also of deeply imbedded racist ideas about Indians. One over-riding theme of Indian/white relations in the United States is the notion that Indians, like children, need the protection and guidance of the "Great White Father." They are unfairly perceived as unsophisticated, uneducated people who must be protected from making wrong decisions. These notions underlie the paternalistic "trust" doctrine,³⁶⁶ which forms the basis of the dominant society's control over Indian land. Repeatedly, authors assert that they revere the ancient values of Indians and consider them models for our modern, technological society. Yet they do not trust these same tribes to exercise their own values wisely. They seek to impose limitations on Indian rights to accept nuclear waste on Indian lands in order to "protect" Indians. Such solutions substitute

^{362.} See Elizabeth Pearce, Self-Determination for Native Americans: Land Rights and the Utility of Domestic and International Law, 22 COLUM. HUM. Rts. L. Rev. 361, 362 (1991).

^{363.} Huffman, supra note 18, at 901.

^{364.} Huffman, supra note 18, at 912, 913.

^{365.} See supra notes 260-67 and accompanying text (discussing congressional failure to include Indians in environmental and nuclear regulatory legislation).

^{366.} See supra note 305 (referring to trust doctrine).

white paternalism for Indian power.³⁶⁷ Yet Native Americans, without such "protectionist" intervention in their tribal environmental affairs, repeatedly make the difficult and costly choice of refusing to bring waste onto their land. Although many private companies and the government target Indian country for waste dumps, tribal governments refuse these "attacks" almost without exception.³⁶⁸

If we are to create equitable law and policy relating to nuclear waste in Indian country, we must make deliberate and concerted efforts to overcome the stereotypical thinking which characterizes so much of American legal history regarding Native Americans. The solution to our nuclear waste problem is not to be found by imposing our values and visions, already clouded by racism, upon Native Americans.³⁶⁹

2. Racism and the Refusal to Site the MRS in Indian Country

The primary impediment to siting the MRS may not be an environmental one, but instead one of power and racism . . . [Many] assume that, if an Indian community decides to accept such a project, it either does not understand the potential consequences or has been bamboozled . . This is clearly a racist assumption; the same assumption that guided the federal policies that very nearly eradicated Indian people . . . It is "environmental racism," and it is ultimately every bit as destructive as the open hostility to Indian people . . . We need the support and understanding of the environmental community, not its protection. 370

The refusal to site nuclear waste in Indian country may be motivated by racism. Ancient enmities between tribes and states infect the entire siting process. Stereotypical views of Native Americans lead many to oppose MRS siting in Indian country, reasoning that tribes are not really sovereigns and therefore should not be allowed to dictate whether nuclear waste will lie on Indian lands within state boundaries. Indeed, many Native Americans argue that biased and paternalistic views of Indians consistently in-

^{367.} Torres, supra note 21, at 842; Gover & Walker, Escaping Environmental Paternalism, supra note 21, at 942-43.

^{368.} Gover & Walker, Escaping Environmental Paternalism, supra note 21, at 934 (citing Kathleen Shaheen & John T. Aquino, Waste Disposal on Indian Lands, Waste Age, Oct. 1991, at 58; and Tribes Resist Tempting Landfill Offers, Chi. Trib., Sept. 22, 1991, at 4). See also Morrison & Howe, supra note 251, at 370.

^{369.} See generally A. Lorde, Sister Outsider: Essays and Speeches (1984).

^{370.} Gover & Walker, Escaping Environmental Paternalism, supra note 21, at 942-43.

terfere with the rights of Indians to accept nuclear waste.³⁷¹ The belief that the dominant culture should make decisions for Indians is termed "Indian law liberalism."³⁷² Its effects over time have been devastating.³⁷³ But the issue of choice is really a sword of Damocles. If Indians decline to accept nuclear waste with its accompanying economic incentives, it is entirely possible that the government will either site the waste next door to reservation land or will appropriate reservation land for a waste site.³⁷⁴ Such congressional acts require no Indian consent.³⁷⁵ The affected tribe would have no control over the waste, obtain no profit, yet their level of exposure will be nearly the same. These possibilities are not farfetched. Currently, there are attempts underway to site low-level storage facilities very near to Indian populations.³⁷⁶

Forty-six years ago, the first nuclear explosion took place at the Trinity site, just 40 miles northwest of our homeland. The event introduced the era we now know as the Nuclear Age. Today, just 100 or so miles to the southwest, the controversial WIPP underground radioactive waste disposal facility is being developed. You can see that the Mescalero Apache Tribe has been 'caught in the middle' of this Nuclear Age. As a result, we have a unique perspective on nuclear issues and a deep and continuing concern that the wastes of the Nuclear Age are handled safely and responsibly.

Letter of Mescalero Apache tribe to David H. Leroy, Nuclear Waste Negotiator (Oct. 11, 1991).

^{371.} Id. at 933.

^{372.} See discussion and definition of the phenomenon in Pommersheim, Making All the Difference, supra note 310, at 342-52.

^{373.} Pommersheim, Making All the Difference, supra note 310, at 343-44 (discussing enormous loss of Indian land following the passage of the Dawes Severalty Act in 1887).

^{374. 128} Cong. Rec. 26,310 (1982) (statements of Representatives Synar and Udall). See infra note 388. The history of the Mescalero tribe with regard to nuclear energy reflects the right of the federal government to bring waste to the area surrounding the reservation.

^{375.} See generally Nell Jessup Newton, Federal Power Over Indians: Its Sources, Scope, and Limitations, 132 U.P. L. Rev. 195 (1984); see also infra note 377 and accompanying text.

^{376.} For example, Northern States Power Co. (NSP) of Minnesota is rapidly running out of storage space to store fuel rods at its Prairie Island nuclear reactor. In re Northern States Power Co., No. E-002/CN-91-19, 1992 WL 348063 (Minn. P.U.C. Aug. 10, 1992). The plant is located 700 meters from the Prairie Island Mdewakanton Sioux Indian Community reservation, a community of about 400 people. Id. In June of 1992, the Minnesota State Regulatory Commission granted NSP's request to store high-level nuclear waste in steel casks outside the plant. Id. The Prairie Island community opposes NSP's nuclear waste storage proposal. Id. After court and legislative challenges appeared on the verge of failure, the Prairie Island community applied for and received a preliminary grant to consider hosting an MRS. Charles Laszewski, Study Finds NSP Nuclear Plant Increases Cancer Risk of Sioux, St. Paul Pioneer Press, Mar. 24, 1992, at A1. Tribal leaders say that if their reservation is forced to exist next to NSP's nuclear storage site, the community may as well accept the entire nation's nuclear waste and use the money to move their community elsewhere. Id. The matter is currently before the Minnesota legislature. Id.

IV. State/Tribal Equity in Siting

A tribe's right to effectuate an agreement to host the MRS is utterly dependant upon the will of the of members of Congress, the vast majority of whom are white and are sworn to represent the interests of state and local communities. Native Americans have little political power. While Congress might permit a tribe to host nuclear waste that no state is willing to take, reservations are located within state boundaries and no state supports the tribes' right to act.

A. Equality of Treatment of States and Tribes Under NWPA

An explicit goal of the 1987 Amendments to the Nuclear Waste Power Act was to create a statutory scheme which treats Indian tribes equally with states:

The second principle is that all affected States and Indian tribes should be treated equally, and that no single State or tribe should enjoy an advantage over another. The Committee believes that this equality of treatment is an essential element in assuring the continued cooperation of all the States that will be considered as having potentially acceptable sites for these facilities.³⁷⁷

Under both the Low-Level Radioactive Waste Policy Act of 1980³⁷⁸ and the Nuclear Waste Policy Act,³⁷⁹ states and tribes have equal rights to host a repository, MRS or low level nuclear waste site, and have equal rights to object to the siting of a nuclear waste facility in

See also Gerald M. Sider, Lumbee Indian Histories: Race, Ethnicity, and Indian Identity in the Southern United States 22 (1993); Ellen Church, Meeting on Nuclear Waste Facility Set For Tuesday, The Robesonian, Nov. 29, 1992, at 1 (discussing proposed low-level nuclear waste site near Lumbee Indians).

^{377.} S. Rep. No. 282, 97th Cong., 1st. Sess. (1981). The goal to treat states and tribes equally was also stressed in other floor debate:

Mr. Synar: Are Indian tribes treated differently from states in this legislation?

Mr. Udall: No. The governing bodies of affected Indian tribes are treated the same as state governments. The difference arises not in this bill but in the existing federal authority to acquire land... In the case of Indian trust lands, however, existing law would not give D.O.E. the express authority to acquire or condemn Indian trust land. Such action would require either the consent of the tribe whose land is involved or an explicit act of Congress dealing with the lands of that specific tribe.

¹²⁸ Cong. Rec. 26,310 (1982) (statements of Rep. Synar and Rep. Udall). 378. Pub. L. No. 96-573, 94 Stat. 3374 (1980) (codified as amended at 42 U.S.C.

 ^{§ 2021}b-2021j (1988 & Supp. IV 1992)).
 379. Pub. L. No. 97-425, 96 Stat. 2201 (1982) (codified as amended at 42 U.S.C.
 §§ 10101-10226 (1988 & Supp. IV 1992)).

their jurisdiction.³⁸⁰ The Act grants every sovereign two general rights of objection: disapproval381 and consultation.382 The distinction between the two is essential to understanding the rights of sovereigns under the Act. Disapproval is virtually a veto power over siting on land within the jurisdiction of a sovereign. 383 Disapproval can be overridden only by an act of Congress.384 Consultation grants sovereigns affected by the siting of the facility on another sovereign's land the right to comment on the siting and to have their objections considered by a federal administrative agency, but under consultation the affected sovereign has no right to stop the process absent congressional action.385 The repository siting process at Yucca Mountain highlights this difference. Since the proposed Yucca Mountain site is on federal land, the state of Nevada had no right of disapproval over the process, despite the fact that the facility will be within the boundaries of Nevada. 386 If Yucca Mountain were owned privately or by the state, Nevada could have exercised the right of disapproval.387 Thus, because Yucca Mountain is federally owned, the Act limits Nevada to consultation.

Under the Act, states and Indian tribes have equal rights of disapproval. Section 115(b) of the NWPA states that designation of a permanent site as suitable by the federal government shall be effective unless the governor and legislature of "the State in which such site is located, or the governing body of an Indian tribe on whose reservation such site is located, as the case may be, has submitted to the Congress a notice of disapproval. . . . "388 Following a notice of disapproval by the sovereign whose land is selected, the site is disapproved unless "Congress passes a resolution of repository siting and such resolution thereafter becomes law." The same procedures for site disapproval apply to MRS siting. The Act also grants states and tribes identical rights to object and be

^{380.} See infra note 388.

^{381.} See, e.g., Participation of States, NWPA § 116 (codified as amended at 42 U.S.C. § 10136).

^{382.} See, e.g., Consultation with States and Indian Tribes, NWPA § 117 (codified as amended at 42 U.S.C. § 10137).

^{383.} Id.

^{384.} Id.

^{385.} Id.

^{386.} Nevada v. Watkins, 914 F.2d 1545, 1553 (9th Cir. 1990); see also Topol, supra note 100, at 805.

^{387.} Nevada, 914 F.2d at 1553.

^{388.} NWPA § 115(b) (codified as amended at 42 U.S.C. § 10135(b)).

^{389.} NWPA § 115(c) (codified as amended at 42 U.S.C. § 10135(c)) (describing congressional review of petitions).

^{390.} NWPA \S 141(h) (codified as amended at 42 U.S.C. \S 10161 (h)) states that "any facility authorized pursuant to this section shall be subject to the provisions of [sections 10135, . . .]" of this title.

heard if siting in a contiguous sovereignty is likely to have adverse effects upon that state or tribe.³⁹¹

Objections raised to siting the permanent repository at the federal Hanford Nuclear Reservation are a good example of tribal exercise of their consultative status. The State of Washington and the Yakima Indian Nation, the Confederated Tribes of the Umatilla Indian Reservation, and the Nez Perce Tribes, all designated as "affected tribes" under the NWPA, worked together to oppose the Hanford site.³⁹² Yet none of these sovereigns could exercise the right of disapproval under the Act because the proposed site was located on federal land.³⁹³

The NWPA specifically declares that the state has no right of disapproval when the proposed nuclear waste facility site is on Indian land.³⁹⁴ The same is true under the MRS siting provisions.³⁹⁵ Similarly, Indian nations may not disapprove a site located on state lands surrounding the reservation; they are limited under the Act to the right of consultation.

The NWPA dictated equal treatment of tribes and states. The Act seemed to establish government-to-government relations and the options available to conflicting sovereigns in nuclear waste siting. States and tribes would compete and object openly and equally with neither sovereign having the right to veto decisions of the other.

Whether Indian nations will be treated as equal sovereigns under the NWPA, with equal rights to accept waste if they are able and willing to strike a bargain with the Nuclear Waste Negotiator, was all but answered in an apparently innocuous and meaningless three line amendment to a recent energy appropriations bill: "None of the funds provided under this Act shall be made available for Phase II-B grants to study the feasibility of siting a Monitored Retrievable Storage Facility." 396

^{391.} Consultation with States and Indian Tribes, NWPA § 117 (codified as amended at 42 U.S.C. § 10137).

^{392.} See Hovis, supra note 39, at 48-50.

^{393.} Hovis, supra note 39, at 48.

^{394. &}quot;The authority of the Governor or legislature of each State under this subsection shall not be applicable with respect to any site located on a reservation." NWPA § 116(b)(3) (codified as amended at 42 U.S.C. 10136(b)(3)) [emphasis added]. This provision is rendered applicable to the MRS pursuant to NWPA § 141(h) (codified as amended at 42 U.S.C. § 10161(h)).

^{395.} NWPA § 146(a) (codified as amended at 42 U.S.C. § 10166). The MRS notice of disapproval is limited to "the governing body of the Indian tribe on whose reservation such site is located, or, if the site is not on a reservation, the Governor or legislature of the state in which the site is located." 42 U.S.C. § 10166(a) [emphasis added].

^{396.} Energy and Water Development Appropriations Act of 1994, Pub. L. No. 103-126, 107 Stat. 1327 (1993).

The ramifications of this amendment, buried deep in the omnibus energy and water legislation, is disguised due to the omission of several subsequent lines in the Amendment offered by the New Mexico Congressmen. Deleted were the words immediately following "Monitored Retrievable Storage Facility":

unless the Nuclear Waste Negotiator has first certified to the Secretary of Energy that there is a reasonable likelihood that agreement can be reached among all of the relevant governmental officials in the vicinity of the proposed site.³⁹⁷

Without amending the Act or its purposes, objecting states shattered the illusion of equal treatment for Indian tribes. The Amendment effectively blocked any grants from the Nuclear Waste Negotiator to the Mescalero Apache of New Mexico and the Goshute tribe of Utah³⁹⁸ to enter advanced study of hosting the MRS unless and until the Nuclear Waste Negotiator certifies, in advance of the study grant, that all the relevant officials in the contiguous state, municipal and county governments would agree to the siting. While the clarifying words were removed, the effect of the amendment is the same. The Nuclear Waste Negotiator lost the power to enter into Phase II-B grants, and the tribes who applied for those grants are foreclosed, at this time, from proceeding. Tribes are not only indirectly deprived of the right to act independent of state restraints, but in effect are subjugated to the will of local municipal and county politicians.

This amendment resulted because politicians in states surrounding reservations involved in the MRS siting process objected to tribes within their state borders entering the waste trade.³⁹⁹ Prior to the adoption of the 1993 amendment to the energy and water legislation, every member of New Mexico's congressional delegation and its governor objected to the proposal to site the nuclear waste facility on the Mescalero Apache reservation.⁴⁰⁰ New Mexico's state leaders assert that New Mexico, the site of the country's first nuclear explosion, has done its part for the nuclear indus-

^{397.} Original amendment offered by Sen. Domenici. The subsequent amendment passed the House as HR 988 to the energy appropriations act, and passed the Senate as § 12800 on September 30, 1993, according to Loretta Tuell, Staff Counsel of the Senate Committee on Indian Affairs. 139 Cong. Rec. H8442-60 (daily ed. Oct. 26, 1993).

^{398.} The Mescalero Apache and Goshute were the only two tribes to have applied for Phase II-B study grants at this point. Oct. 27 Conversation with Brad Hoaglun, supra note 122.

^{399.} Id.

^{400.} Thomas W. Lippman, On Apache Homeland, Nuclear Waste Seen as Opportunity, Wash. Post, June 28, 1992, at A3.

try.⁴⁰¹ One survey revealed, however, that citizens of New Mexico are not nearly as hostile to the efforts of the Mescalero Apache as are their congressmembers.⁴⁰² There is also strong dissent from politicians in Utah, where the Skull Valley Band of the Goshute tribe has also accepted a second-phase grant.⁴⁰³ "This is an overmy-dead-body issue," said Utah Governor Mike Leavitt.⁴⁰⁴

With the Nuclear Waste Negotiator's Phase II-B funding eliminated by the buried amendment, the fate of all nine Indian tribe Phase II applications is in doubt. Only the use of discretionary funding by DOE Secretary Hazel O'Leary, or further congressional action, will permit continued study of possible siting on Indian lands. Secretary O'Leary is under extreme political pressure from Congress and the governors of states where the reservations are located.

While the goal of the 1987 Amendments to the Nuclear Waste Power Act was to treat Indian tribes equally with states, state political pressure undermined that goal. The message this new amendment sends to Indian tribes is that their much touted rights of equality, government-to-government relations, and sovereignty in the area of nuclear waste come down to one issue: whether Congress will use its plenary power to block any exercise of these rights unless all of the surrounding non-Indian communities agree to allow the exercise of sovereignty. The ultimate issue remains the same. No state wants the waste, and states will do whatever is necessary to block MRS siting in their home state.

Some hypothesize that Congress simply wants to block the MRS project until the Yucca Mountain site is opened. The Act

^{401.} A spokesman for New Mexico Governor Bruce King, John A. McKean, said, "We always suspect there's an idea the desert Southwest is this great big empty space, and if you have something unpleasant, you can stash it out there and nobody will ever object. . . . But to us it's God's country, and every square inch of it is very important to us and very fragile." Wald, supra note 47, at 12A.

^{402.} A poll conducted in August 1993 by the Tarrance Group of Alexandria, Virginia, found that sixty percent of New Mexico voters believe the Mescaleros have the right to study the MRS, although only 27 percent of state voters indicate "having seen, read, or heard anything specific about the issue." By contrast, 91 percent of state voters are aware of WIPP and 53 percent believe it has been a good economic development project for New Mexico. Poll Finds Most of New Mexico Voters Support Tribe's Study of MRS, INSIDE ENERGY, Sept. 6, 1993, at 9.

^{403. 13} Nuclear Waste News, Aug. 26, 1993, at 34.

^{404.} Id.

^{405.} Oct. 27 Conversation with Brad Hoaglun, supra note 122. It is interesting to note that in reaction to recent congressional action the Mescalero Apache entered into negotiations with various utility companies for the possible construction of a private nuclear waste facility on the Mescalero reservation. Conversation with Brad Hoaglun, Office of the Nuclear Waste Negotiator, Washington, D.C. (May 2, 1994) [hereinafter May 2 Conversation with Brad Hoaglun].

^{406.} May 2 Conversation with Brad Hoaglun, supra note 405.

could then be amended to move both temporary and permanent storage to Yucca Mountain thereby obviating the need for any MRS facility.⁴⁰⁷ From this perspective, perhaps all communities, white and Indian, are treated similarly. However, this apparent equal treatment disguises the fundamental legal distinction. Indians are sovereign nations, not local communities, and under the NWPA they are entitled to equal consideration with states.

The debate surrounding the siting of the permanent repository illustrates the struggle of Native Americans to oppose the siting of nuclear waste on non-Indian land. At least sixteen tribes have a nexus with Yucca Mountain. According to Native American activists, even more tribes are influenced by Yucca Mountain because there may be several bands separated geographically within a single tribe. To date, at least ten non-Indian communities have received funding as an "affected" community, but no tribe has yet received "affected" status. Regardless of the impact on tribes, Congress has the ultimate power to decide where a facility will be sited. The Office of the Nuclear Waste Negotiator is scheduled to finally dissolve in January of 1995. At that point, the entire decisionmaking process will fall into the hands of Congress.

B. Native American Rights and State Objections

If Congress permits an Indian tribe to voluntarily accept the MRS site, the tribal/federal agreement must overcome the hurdle of state intervention. Strong objections and assertions of sovereignty from the surrounding state(s) are inevitable because states and Indian tribes have a long and litigious history where issues of sovereignty are concerned.⁴¹³ Indeed, MRS siting on an Indian reservation has serious consequences for contiguous states.⁴¹⁴

^{407.} Id.

^{408.} Conversation with Robert Holden, National Congress of American Indians, Washington, D.C. (Oct. 29, 1993).

^{409.} Id.

^{410.} Id.

^{411.} Regardless of any notice of disapproval, Congress has the ultimate power to pass a resolution of repository siting approval. 42 U.S.C. § 10135(c).

^{412.} See supra note 148.

^{413.} See Pommersheim, Tribal-State Relations, supra note 36, at 240-52. This article does not consider the unique preemption questions raised by the Mescalero Apaches' consideration of construction of a private interim nuclear waste storage facility on tribal land. See May 2 Conversation with Brad Hoaglun, supra note 405.

^{414.} The compensation provisions of the NWPA appear to be sufficiently vague to permit local governments and states to apply for funding to offset costs incident to siting on an Indian reservation. See, e.g., NWPA §§ 115, 116, 117, 170(d) (codified as amended at 42 U.S.C. §§ 10135-10137, 10173(d)).

State legal challenges to federal siting of the MRS on an Indian reservation will turn on the question of whether states have the power to exclude out-of-state nuclear waste from being transported across its state borders. These issues will be played out against a backdrop of several clearly established limits on state challenges to MRS siting. First, the statutory scheme of the NWPA provides that states have no right of disapproval of siting on Indian lands and are limited to the right to comment. Second, previous state attempts to forbid the importation of waste into its borders have been held constitutionally impermissible under the Commerce Clause. In the case of the transportation and generation of nuclear waste, which is generated, controlled and disposed of under a federal scheme, the grounds for refusing to honor state laws excluding waste are even stronger.

The most important remaining legal issues involve questions of federal preemption of nuclear waste disposal and federal law governing state/tribal relations. Two different doctrines of preemption are implicated in tribal/state disputes over nuclear waste siting, federal preemption and Indian law preemption.⁴¹⁹ Federal preemption usually arises from the Commerce Clause⁴²⁰ coupled with the Supremacy Clause⁴²¹ of the Constitution. Under the doctrine, Congress limits the right of a state or tribe to exercise police power when federal legislation conflicts with state or tribal law or where federal law pervasively occupies the field.⁴²² Indian law preemption determines whether the federal, tribal or state government

^{415. &}quot;Studies indicate that by the year 2000, 120 trucks per day will be carrying nuclear waste on the nation's highways to the temporary and permanent repositories. Each shipment will contain many times the radioactivity released by the atomic bomb at Hiroshima." MYTH BUSTERS, supra note 23, at 19.

^{416.} See § IV supra notes 376-412 (section discussing state/tribal equity in siting).

^{417.} See Philadelphia v. New Jersey, 437 U.S. 617, 621-29 (1978); National Solid Wastes Mgmt. Ass'n. v. Alabama Dep't. of Envt'l Mgmt., 910 F.2d 713, 718 (11th Cir. 1990), 924 F.2d 1001 (11th Cir. 1991), opinion modified on denial of reh'g., cert. denied, — U.S. —, 111 S.Ct 2800 (1991); see also Celia Campbell-Mohn, Environmental Law: From Resources to Recovery 823-24 (1993).

^{418.} Washington State Bldg. and Constr. Trades Council v. Spellman, 684 F.2d 627, 630 (9th Cir. 1982), cert. denied sub. nom.; Don't Waste Washington Legal Defense Fund v. Washington, 461 U.S. 913 (1983) (regulating low-level radioactive waste disposal is a legitimate federal activity and the states may not prohibit importation of low-level radioactive waste).

^{419.} Getches, supra note 205, at 453-58.

^{420.} U.S. CONST. art. I, § 8, cl. 3.

^{421.} U.S. Const. art. VI, cl. 2.

^{422.} See generally Laurence H. Tribe, American Constitutional Law 479-511 (1988).

properly has jurisdiction in Indian country.⁴²³ If Indian preemption is found, state authority is excluded in favor of federal or tribal authority.⁴²⁴ Indian preemption protects inherent tribal sovereignty from state efforts to assert authority in Indian country.⁴²⁵

The analysis of federal preemption requires turning again to Nevada v. Watkins. 426 in which the state of Nevada attempted to prohibit the building of the NWPA permanent repository by enacting a statute excluding nuclear waste prior to site characterization.427 The Ninth Circuit Court of Appeals determined that Nevada lacked legal authority to bar waste storage on federally owned land within the state's borders. 428 Although neither party asserted that Congress has expressly preempted the field of nuclear waste disposal, the Court stated that "the Supreme Court has concluded that 'the Federal Government has occupied the entire field of nuclear safety concerns, except the limited powers expressly ceded to the States." "429 The Watkins court stated that the Supreme Court "has not yet confronted the issue whether the NWPA 'occupies the field' of nuclear waste disposal,"430 but concluded that "Nevada's attempted legislative veto of the Secretary's site characterization activities 'stands as an obstacle to the accomplishment of the full purposes and objectives of Congress.' "431 The court went on to say that any state law that blocks "the full effectiveness of federal law is rendered invalid by the Supremacy Clause" of the Constitution.432

^{423.} See Getches, supra note 205, at 454.

^{424.} See Getches, supra note 205, at 454.

^{425.} White Mountain Apache Tribe v. Bracker, 448 U.S. 136, 151 (1980) (Arizona's attempt to impose motor-carrier and fuel taxes on corporation performing work on reservation preempted by federal law); see also Laurence Tribe, The Indian Commerce Clause, 23 Ariz. L. Rev. 203 (1981).

^{426. 914} F.2d 1545 (9th Cir. 1990).

^{427.} Id. at 1549.

^{428.} Id. at 1559.

^{429.} Id. at 1560 (quoting Pacific Gas & Elec. Co. v. State Energy Resources & Dev. Comm'n., 461 U.S. 190, 212 n.25 (1983)).

The court here neglected to mention the fact that both the Clean Air Act Amendments of 1977 and the Low-level Radioactive Waste Policy Act of 1980 give at least some regulatory power to the states.

^{430.} Id. at 1561.

^{431.} Id. (quoting Silkwood v. Kerr-McGee Corp., 464 U.S. 248 (1984)).

^{432.} Id. (quoting Perez v. Campbell, 402 U.S. 637 (1971)). Nowhere in the Atomic Energy Act of 1954 is the role of the states defined. The first private nuclear facility in the United States, the Shippingsport, Pennsylvania power reactor operated by Duquesne Light Company, was licensed in 1957. England & Mitchell, supra note 69, at 537. After this, as states attempted to exercise their police powers in the area of nuclear regulation, there was a growing need for amendments specifying the role of the states. The Act was amended in 1959 by § 274. Act of Sept. 23, 1959, Pub. L. No. 86-373, 73 Stat. 688 (1959) (codified as amended at 42 U.S.C. § 2021 (1988)). This amendment was entitled "Cooperation with States," but did not define any areas of

In Watkins, the court relied heavily upon Pacific Gas & Elec. v. State Energy Resources Conserv., 433 which strongly supports the principle that the federal government has established its domain in the field of nuclear regulation. In Pacific Gas, California attempted to enact legislation that would require utility companies seeking to build any electric power generator, including nuclear plants, to apply for a state license. 434 The Warren-Alquist Act, 435 as it is known, through its 1976 amendments, mandated a finding that there would be "adequate capacity" for spent nuclear fuel as a prerequisite for plant construction permits. 436 It also sought to impose a moratorium on new plant construction until the Energy Commission determined that "there has been developed and that the United States through its authorized agency has approved and there exists a demonstrated technology or means for the disposal of high-level nuclear waste."437

Under generally accepted principles, preemption can be established by explicit language.⁴³⁸ Pacific Gas went a step further by summing up what other courts had articulated in various forms:

express federal preemption. Crocker, supra note 51, at 69 (citing General Counsel Interpretation of 42 U.S.C. §§ 2012(i) & 2013(d) (1988), 10 C.F.R. § 8.4(c) (1988)).

Section 274(b) states that the AEC can "enter into agreements with 'the Governor of any State' to discontinue the regulatory authority of the Commission over byproduct materials, source materials, and special nuclear materials 'in quantities not sufficient to form a critical mass.' "Crocker, supra note 51, at 69-70 (citing 42 U.S.C. § 2021 (1982)). For technical definitions of critical mass, source material, or special nuclear material, see 42 U.S.C. §§ 2014(e), (z), (aa) (1988). For a technical definition of critical mass, see 10 C.F.R. § 150.11 (1988).

These agreements made state control more feasible, subject to safety and health standards. "[N]o agreement under section 274 will be allowed 'to discontinue the Commission's authority' over highly technical or dangerous matters, but under such agreements, less dangerous tasks may be delegated to the states under the ultimate authority of the Commission. Concurrent responsibility is therefore possible." Crocker, supra note 51, at 70-71. The exact extent of preemption, if any, was not articulated by Congress; it was instead left up to the courts, which have interpreted section 274 both favorably and unfavorably to the states. Id. at 73.

If the court finds that the state regulation falls within the ambit of subsection (k) (state regulation of non-radiological hazards), then the statute survives. If on the other hand, the court determines that the state statute falls outside the reach of subsection (k), then the state is attempting to regulate a radiation hazard.

Id. at 74. 42 U.S.C. § 2021(k) states: "Nothing in this section shall be construed to affect the authority of any State or local agency to regulate activities for purposes other than protection against radiation hazards."

433. 461 U.S. 190 (1983).

434. Id.

435. Id.; Cal. Pub. Res. Code §§ 25000 - 25986 (West 1986).

436. Pacific Gas, 461 U.S. at 190. CAL. PUB. RES. CODE § 25524.1(b) (West 1986). The Court did not review this provision of the Act, holding instead that it was not ripe for review. Pacific Gas, 461 U.S. at 190.

437. 461 U.S. at 197; CAL. PUB. RES. CODE § 25524.2 (West 1986).

438. 461 U.S. at 203.

that in the absence of this explicit language, Congress may preempt state law with a

'scheme of federal regulation . . . so pervasive as to make reasonable the inference that Congress left no room for the States to supplement it,' because the 'Act of Congress may touch a field in which the federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject,' or because 'the object sought to be obtained by the federal law and the character of obligations imposed by it may reveal the same purpose.'439

The Court said that even where Congress "has not entirely displaced state regulation in a specific area, state law is preempted to the extent that it actually conflicts with federal law. Such a conflict arises when 'compliance with both federal and state regulations is a physical impossibility.' "440

The Court in Pacific Gas held that the legislation at issue in the case was not preempted by federal law, since it was outside the field of nuclear safety regulation and was adopted for economic reasons.441 Despite the fact that the law was upheld, the Court repeatedly reiterated that the federal government had preempted nuclear safety under the Atomic Energy Act. 442 "State safety regulation is not preempted only when it conflicts with federal law. Rather, the federal government has occupied the entire field of nuclear safety concerns, except the limited powers expressly ceded to the States."443 The Supreme Court has since clarified Pacific Gas, holding that when a state asserts environmental and economic motivation for legislation affecting nuclear safety, the Court will examine the potentially preempted legislation to see if the "state law's action has the actual effect of frustrating Congress' intent."444 The application of the actual effect test resulted in the determination that the Nevada statute at issue in Nevada v. Watkins was preempted by federal law.445

^{439. 461} U.S. at 204 (quoting Fidelity Federal Savings & Loan Assn. v. De la Cuesta, 458 U.S. 141, 153 (1982)); see also, Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947).

^{440. 461} U.S. at 204 (citing Florida Lime & Avocado Growers, Inc. v. Paul, 373 U.S. 132, 142-43 (1963)).

^{441.} Id. at 211-15. In so holding, the Court interpreted the Atomic Energy Act to create two separate spheres of regulation: "the Federal Government maintains complete control of the safety and 'nuclear' aspects of energy generation; the states exercise their traditional authority over the need for additional generating capacity, the type of generating facilities to be licensed..." Id. at 212.

^{442.} Id. at 211-15.

^{443.} Id. at 212 (footnote omitted).

^{444.} Nevada v. Watkins, 914 F.2d 1549, 1561 (9th Cir. 1990).

^{445.} Id.

State challenges to MRS siting on Indian lands based on economic or environmental grounds should be preempted by federal nuclear safety and disposal legislation. The exclusive federal safety scheme governing nuclear safety clearly extends to disposal of nuclear waste generated in facilities subject to the Atomic Energy Act. For example, Section 2021(c)(4) states that "[t]he Commission shall retain authority and responsibility with respect to regulation of the disposal of such . . . byproduct, source, or special nuclear material as the Commission determines . . . should, because of hazardous or potential hazards thereof, not be so disposed of without a license from the Commission."⁴⁴⁶

Furthermore, state efforts to block MRS siting on Indian lands are preempted because they interfere with achieving the ultimate goal of the the federal nuclear safety program: the safe disposal of nuclear waste. Federal preemption theory strongly supports the proposition that states will not be permitted to block MRS siting within their states. What other issues are raised when the MRS site is on Native American land? Indian law preemption traditionally offers strong support for the exercise of tribal sovereignty in the face of state attempts to assert jurisdiction in Indian country. The statutory bases for overcoming state objections to nuclear waste on tribal land is further supported by the historical tradition of the Supreme Court, which generally permits tribes to exercise their sovereignty when states attempt to interfere. 447 "Tribal authority to regulate" within its borders "arises from the inherent sovereign powers of the native nations," and "[a]ny judicial determination of the sovereign powers of a native nation begins with the doctrine that tribes retain all inherent powers of national sovereignty that have not been ceded by treaty, excised by federal legislation, or divested by the courts as inconsistent with the federal government's assertion of superior sovereignty."448

Tribal jurisdiction over Indians "may be subject to intrusions of federal regulatory authority, but generally is exclusive of state jurisdiction." In White Mountain Apache Tribe v. Bracker, 450 the State of Arizona attempted to apply its motor carrier license and

^{446. 42} U.S.C. § 2021(c)(4) (1988).

^{447.} Royster & Fausett, supra note 256, at 593; see also White Mountain Apache Tribe v. Bracker, 448 U.S. 136, 137-38 (1980). For a discussion of the recent changes in the doctrine of Indian preemption see Pommersheim, Tribal-State Relations, supra note 36.

^{448.} Royster & Fausett, supra note 256, at 593-94 (citing U.S. v. Wheeler, 435 U.S. 313, 323 (1978)).

^{449.} Royster & Fausett, supra note 256, at 595 (citing White Mountain Apache Tribe v. Bracker, 448 U.S. 136, 144 (1980)).

^{450. 448} U.S. 136 (1980).

use fuel taxes to non-Indians engaged in logging operations on the reservation. Holding that the taxes were preempted by federal law, the Supreme Court explained that the "timber on reservation land is owned by the United States for the benefit of the Tribe." "Long ago the court departed from Mr. Chief Justice Marshall's view that 'the laws of [a State] can have no force' within reservation boundaries." 452 "At the same time, we have recognized that the Indian tribes retain 'attributes of sovereignty over both their members and their territory,' . . . As a result, there is no rigid rule by which to resolve the question whether a particular state law may be applied to an Indian reservation or to tribal members." 453

The Court explained that Congress has broad power to regulate tribal affairs under the Indian Commerce Clause⁴⁵⁴ and that this in turn has given rise to two barriers to "the assertion of state regulatory authority over tribal reservations and members."⁴⁵⁵ The first barrier is that the exercise of state authority may be preempted by federal law; the second, that it may not unlawfully infringe "'on the right of reservation Indians to make their own laws and be ruled by them'."⁴⁵⁶ These limitations are related in that the tribal right of self-government is dependent upon Congress.⁴⁵⁷ "Even so, traditional notions of Indian self-government are so deeply engrained in our jurisprudence that they have provided an important 'backdrop'."⁴⁵⁸ The Court determined that the Federal Government's regulation of timber harvesting on Indian land was comprehensive. Therefore, there is no room for state taxes in the federal regulations.

In State of Washington, Department of Ecology v. United States Environmental Protection Agency, 459 the State of Washington submitted an application for permission to regulate its own hazardous waste management program pursuant to the Resource Conservation and Recovery Act (RCRA). The EPA approved the application "except as to the Indian lands." 460 The "EPA concluded that the state had not adequately demonstrated" 461 that it had ju-

^{451.} Id. at 138.

^{452.} Id. at 141 (citing Worcester v. Georgia, 31 U.S. (6 Pet.) 515, 561 (1832)).

^{453.} Id. at 142 (quoting United States v. Mazurie, 419 U.S. 544, 557 (1975)).

^{454.} U.S. Const. art. 1, § 8, cl. 3.

^{455. 448} U.S. at 142.

^{456.} Id. at 142 (quoting Williams v. Lee, 358 U.S. 217, 220 (1959)).

^{457.} Id. at 143.

^{458.} Id. (quoting McClanahan v. Arizona State Tax Comm'n., 411 U.S. 164, 173 (1973))

^{459. 752} F.2d 1465 (9th Cir. 1985).

^{460.} Id. at 1467 (quoting 48 Fed. Reg. 34945 (1983)).

^{461.} Id.

risdiction over the Indian lands. The court stated that "[v]ague or ambiguous statutes must be measured against the 'backdrop' of tribal sovereignty, especially when the statute affects an area in which the tribes historically have exercised their sovereign authority or contemporary federal policy encourages tribal self-government." 462

Recent cases have eroded traditional legal protections of Native Americans from state intervention in reservation life.⁴⁶³ United States courts, in analyzing preemption issues involving Indians, increasingly focus on federal preemption beginning with a determination of the "backdrop" of tribal sovereignty.⁴⁶⁴ This backdrop inquiry focuses on broad-based concepts of self-government, rather than any particularized notion of specific tribal powers. In addition to tribal sovereignty itself, the backdrop inquiry now also includes an examination of federal policies promoting native self-government.⁴⁶⁵ Against this backdrop, courts balance the federal, tribal, and state interests implicated by the state regulatory action.

Under this preemption test, state regulatory authority will be permitted if it does not interfere with federal and tribal interests, as determined by federal law, or, even if state action does interfere, if the state interests at stake are sufficient to justify the intrusion.⁴⁶⁶

A relatively recent line of cases seems to indicate that in certain areas, the Supreme Court is willing to let states interfere when the tribes have no "tradition" of regulation in the field at issue. The Court is apparently retreating from its position favoring Indian sovereignty within reservation borders, adopting instead an analysis of the tribes' history and tradition of regulation in the area at issue.

Rice v. Rehner⁴⁶⁷ concerned a non-Indian who was a licensed Indian trader selling liquor on a reservation. The state of Califor-

^{462.} Id. at 1470 (citing Rice v. Rehner, 463 U.S. 713 (1983)); EPA policy is strongly supportive of Native American control of the reservation environment. See EPA Legal Analysis, supra note 270.

^{463.} See Pommersheim, Tribal-State Relations, supra note 36, at 252 ("Supreme Court litigation in the area of tribal-state relations has drifted further and further away from the foundational mooring of Worcester v. Georgia, out past the abandoned buoys of the infringement and preemption tests and into the uncharted seas of the doctrinal incoherence of . . . recent cases.") (footnotes omitted).

^{464.} Royster & Fausett, supra note 256, at 602-03.

^{465.} Id. at 603.

^{466.} Id. at 603-04. In this analysis, the authors use the arguments in California v. Cabazon Band of Mission Indians. 480 U.S. 202 (1987). According to Royster and Fausett, states would have no place in the regulation of nuclear waste bound for an Indian reservation. The backdrop of tribal sovereignty, along with the possibility of state interference with federal and tribal interests, would lead one to the conclusion that states would not be permitted to interfere. Id. at 604.

^{467. 463} U.S. 713 (1983).

nia sought to require Ms. Rice to obtain a state liquor license in order to sell liquor for off-premises consumption.⁴⁶⁸ The Supreme Court acknowledged that "[t]he decisions of this Court concerning the principles to be applied in determining whether state regulation of activities in Indian country is preempted have not been static."⁴⁶⁹ The Court's "recent cases have established a 'trend... away from the idea of inherent Indian sovereignty as a bar to state jurisdiction and toward reliance on federal pre-emption'."⁴⁷⁰ The Court noted that tribal sovereignty exists only through Congress,⁴⁷¹ explaining that the states could not override Federal law here.⁴⁷²

According to the Court, the "backdrop" of tribal sovereignty in this case, the licensing and distribution of alcoholic beverages, must be considered to determine whether a tradition of tribal sovereignty exists. The Court concluded that there was no tradition of Indian regulation and licensing of alcoholic beverages on the reservation.⁴⁷³

Applying the notion of tradition to the issue of nuclear waste disposal, the Court could easily find that Indians have no tradition of regulating nuclear waste on their land. "The Court's reliance on tradition could be used to argue that Indian tribes have little tradition in hazardous [nuclear] waste management." The tribes do have a history of exposure to radiation, however, tribes never actually regulated the waste. Yet, the situation with nuclear waste is analytically quite different. The federal government has long held the exclusive right to regulate nuclear waste safety; neither tribe nor state, therefore, has a history of regulation in this area.

The other Indian preemption consideration taken up by the Court in *Rice* concerns whether or not the item to be regulated has a "significant impact" beyond the limits of the reservation.⁴⁷⁵ The *Rice* Court concluded that the fact that alcohol does in fact find its way off the reservation affected the Court's decision to grant state authority to license alcohol distribution on the reservation.⁴⁷⁶ Nuclear waste could clearly have a "significant impact" beyond the limits of the reservation, especially since the waste must be

^{468.} Id. at 715.

^{469.} Id. at 718.

^{470.} Id. (quoting McClanahan v. Arizona State Tax Comm'n, 411 U.S. 164, 172 (1973) (footnote omitted)).

^{471.} Id. at 719.

^{472.} Id. at 719-20.

^{473.} Id. at 719-22.

^{474.} Du Bey et al., supra note 47, at 478.

^{475.} Rice, 463 U.S. at 723-24.

^{476.} Id. at 724.

transported through the state in order to reach the reservation. In the context of nuclear waste disposal, however, the impact of the MRS should not fall to state control but should remain under federal jurisdiction. Nevada v. Watkins⁴⁷⁷ suggests that a state has no authority here. If the Supreme Court can prevent Nevada from trying to stop federal nuclear waste storage, it can certainly prohibit a state from trying to stop nuclear waste importation into the state on its way to an Indian reservation.⁴⁷⁸

In most instances, then, state jurisdiction over Indian country is barred unless there is a specific grant of jurisdiction from Congress.⁴⁷⁹ In sum, "[n]ative nations retain inherent sovereign powers of regulatory control over the territory and inhabitants of the reservation, except for specific instances where native governmental powers have been ceded by treaty or lost through congressional legislation or judicial divestment."⁴⁸⁰

This examination of the legal theories pursuant to which a state could challenge a tribe's right to host an MRS reveal that such efforts are likely to meet with defeat in the courts. Yet some Indian preemption cases may suffice to permit states to bring costly and protracted litigation in an effort to obstruct and delay MRS siting. Further, strong legal support of MRS siting on Indian lands does not preclude political efforts by the states to achieve the same result.481 Congress may, in the end, provide states with the authority to adopt legislation prohibiting the importation of out-of-state waste. One potential means of avoiding state/tribal litigation and political battles surrounding nuclear waste disposal is for tribes and states to work together to achieve compromises acceptable to both sovereigns. 482 There is great potential for states and tribes to arrive at agreements establishing joint objections to waste siting or proposals to offer Indian tribes economic alternatives to accepting nuclear waste.483

^{477. 914} F.2d 1545 (9th Cir. 1990).

^{478.} See Philadelphia v. New Jersey, 437 U.S. 617, 621-29 (1978); see also supra note 417 and accompanying text (states forbidden from refusing to allow waste to cross state borders).

^{479, 437} U.S. at 612.

^{480.} Id.

^{481.} See, e.g., Nevada, 941 F.2d at 1553-59.

^{482.} Pommersheim, Tribal-State Relations, supra note 36, at 268-76; Walker & Gover, Commercial, supra note 260, at 240-62.

^{483.} A coalition between cattlemen and the Rosebud Sioux was bulit on the bridge of environmental protection. Conger Beasley, Jr., Of Landfill Reservations, 3 BUZZWORM: AN ENVIRONMENTAL JOURNAL, 36 (Sept./Oct. 1991). Coalitions between environmentalists and Native American tribes are possible if non-Indians study and understand Indian objectives and values. One recommendation is that environmen-

V. Enforcing Promises of the Government

If the Nuclear Waste Negotiator ultimately reaches agreement with an Indian tribe willing to accept an MRS, the tribe will face a number of obstacles to the enforcement of the promises made in the MRS agreement. There are long-term consequences to the siting of nuclear waste on Indian lands and agreements entered today may require enforcement in future generations. It is crucial that the parties anticipate, to the extent possible, potential future enforcement problems, provide for their solutions and determine how those solutions will be enforced.⁴⁸⁴

The first hurdle for Indian tribes will be assuring that the agreement negotiated with the Nuclear Waste Negotiator will form the basis of a final agreement siting the MRS on their lands. The promises of the Negotiator are not binding on Congress or the President until they are adopted and signed into law. Any agreement must await political action which could change, modify or completely overrule the agreement entered into between the Negotiator and the tribe.

While the Office of the Nuclear Waste Negotiator still exists, it has lost much of its political power. Congress nullified the Phase II-B grants, which were central to the mission of the Office. 486 Congressional action eroded the tribal relationship which the office worked to build.487 There is virtual agreement that the Office of the Negotiator will not be reauthorized, and thus it will go out of existence in January 1995. It seems almost beyond imagination that a site will be selected by the Negotiator, an agreement signed and Congressional and Presidential action completed by that date. In all likelihood, if an agreement with a tribe is reached, the tribe will be on its own before a hostile Congress when MRS approval time arrives. Even the possibility of such action awaits Secretary of Energy O'Leary taking the politically risky step of authorizing money for further tribal negotiation by the Office of the Negotiator. Ironically, the Office of the Nuclear Waste Negotiator was created because the Department of Energy was perceived to have low credi-

talists interested in keeping toxins off Indian lands "respect tribal sovereignty and then pressure . . . the tribal council." Knox, supra note 46, at 83.

^{484.} See Mary Boaz, Note, Retroactive Liability for Clean-Up of Hazardous Waste in Atlas v. United States: The Nuclear Industry's Failed Attempt to Make the Government Pay, 6 J. Min. L. & Pol'y 275 (1991) (discussing the enforcement of government promises with respect to unanticipated consequences).

^{485.} See supra note 152 and accompanying text.

^{486.} See supra note 155 and accompanying text.

^{487.} See supra note 155 and accompanying text; May 2 Conversation with Brad Hoaglun, supra note 405 (Mescalero currently negotiating to build private nuclear waste disposal site).

bility with the public in matters of nuclear health and safety.⁴⁸⁸ Soon the DOE will conceivably be the tribes' only ally, yet it is not a direct party to the negotiations.

If Congress and the President approve an MRS site on tribal lands the tribe will make an agreement with a sovereign, a fact with far reaching legal and political consequences. The United States will have two different and potentially conflicting fiduciary relationships if it enters an MRS agreement with a tribe. One duty is as the custodian of the nuclear waste, responsible for maintaining its safety on behalf of all American citizens. The second is the fiduciary duty owed tribes by the United States government.⁴⁸⁹

The agreement and its enforcement mechanisms must adequately protect the life, health and safety of Indian people, and the reservation land and wildlife. It must provide a homeland for the tribe, should their land be destroyed or should the United States decide that for nuclear security reasons it must seize the tribal land by Congressional action. It must make provision to enforce the government's promises which formed the basis of the bargain.

How will the tribe enforce the promises made by the government? In the MRS siting agreement the likely provisions which will require enforcement include: (1) promised payments; (2) health and safety guarantees; (3) agreements to remove the waste at a time certain or upon the occurrence of a default on conditions or of an accident or a release; (4) clean-up after a mishap or removal; (5) jobs, schools or other promises; and (6) the continued existence of the tribe, its sovereignty and its land base even if an accident occurs on that land.

The sovereign nature of the United States makes it a difficult adversary against those who seek to enforce its promises. Legal doctrines, such as sovereign immunity, limit the legal arsenal of its opponents.⁴⁹⁰ Generally, the only means of enforcing governmental promises is through actions against the sovereign in its own courts; recovery in these courts for land taken, destroyed or damaged by

^{488.} Hudson, supra note 38, at 6.

^{489.} Reid Chambers, Judicial Enforcement of the Federal Trust Responsibility to Indians, 27 Stan. L. Rev. 1213 (1975); Ball, supra note 34, at 61-67; Clinton, Isolated in Their Own Country, supra note 290, at 1001-04. Certain constitutional protections including equal protection, due process and fifth amendment takings provisions may apply to protect Indians under an MRS agreement. See, e.g., Nell Jessup Clinton, At the Whim of the Sovereign: Aboriginal Title Reconsidered, 31 Hastings L. J. 1215 (1980).

^{490.} See supra note 29 (discussing tribal sovereign immunity).

the United States is often limited to money damages.⁴⁹¹ The nature and extent of the problems will partially depend upon the legal nature of the agreement, whether contract, treaty or legislation. Rights to treaty enforcement, for example, are limited by the plenary power of the United States Congress.⁴⁹² Economic promises made by Congress to pay tribal costs, provide benefits, pay fines and carry out a myriad of promises will last many years after the agreement becomes final. Yet these obligations normally depend for their fulfillment upon annual Congressional funding because the Anti-Deficiency Act⁴⁹³ and other legal limitations prevent these promises from becoming self-enforcing.

Any Indian nation willing to host the MRS must look at the United States' history of keeping its promises if it is to protect itself in case of accident or congressional change of heart.

In the context of Indian law, history looms not just as a colorful backdrop, but rather as an inescapable shadow. The failure to adequately confront and comprehend this history inevitably threatens to blot out understanding and resolution of significant Indian law issues involving treaties, tribal sovereignty, and the commitment to a flourishing tribal life.⁴⁹⁴

The story of federal Indian law is, by any standard, a tale of broken promises.⁴⁹⁵ Tribes would be wise to anticipate the worst future events and to assure protection beyond the mercy of Congress or damages from the courts.⁴⁹⁶ Among the solutions are congressional action, included in the agreement between the tribe and Congress for siting the MRS, to create an escrow account, sufficient to pay all costs of the program, all health and safety precaution costs, and any future damages and other financial obligations suffered by the

^{491.} Pommersheim, Making all the Difference, supra note 310, at 348-49. Land reclamation or substitution are remedies only of Congress. The Lakota await the return of the Black Hills, just as African Americans await their 40 acres and a mule.

^{492.} Charles F. Wilkinson & John Volkman, Judicial Review of Indian Treaty Abrogation: "As Long as Water Flows or Grass Grows Upon the Earth"—How Long is That?, 63 Cal. L. Rev. 601 (1975).

^{493. 31} U.S.C. § 1341 (1994).

^{494.} Pommersheim, Making All the Difference, supra note 310, at 338.

^{495.} Rennard Strickland, The Langston-Hughes Lectures, Genocide-at-Law (an Historic and Contemporary View of the Native American Experience), 34 U. Kan. L. Rev. 713, 718-39 (1989) (examples of promises to Native Americans broken by the United States).

^{496.} While negotiations between tribes and the Nuclear Waste Negotiator are not matters of public record, the Mescalero Apache made the contours of their approach to MRS siting public at a meeting of the National Conference of State Legislators in November 1992 where the author, N.B. Collins, spoke. A copy of the public statement is on file with the author. The Mescalero approach, while still very vague, does include some of the matters raised herein. For example, the tribe suggests escaping congressional funding "whims" by means of a self-liquidating annuity fully funded at the initiation of the project.

tribe. All funds should come from the Nuclear Waste Fund or other funds not limited by congressional appropriation.⁴⁹⁷ Funds should be deposited directly into an escrow account for the use in paying obligations to the tribe. These funds should be administered by a trustee and contests over the disbursement of funds should be handled by a dispute resolution panel made up of independent persons, not members of the tribe or the federal government. The panel should include members of other Indian tribes, members of the dominant society and members of an international body such as the United Nations. It should be required to render findings of fact and binding arbitration of the dispute if mediation and negotiation fail. Such an escrow account coupled with arbitration, would assist in enforcing the federal government's financial obligations under the agreement.

If an Indian tribe elects to accept the MRS, they will be dependent upon the enforcement of environmental standards by the federal government. It is important to consider the enforcement record of those agencies. The history of the NWPA reflects the problems faced by the DOE in its attempt to dispose of nuclear waste. The studies on environmental equity also reveal a sad tale about toxic waste sites in communities of color.

It is essential that an agreement between a tribe and the federal government require strict enforcement of federal and tribal environmental laws, including tribal input in that enforcement.⁴⁹⁹ Since the area of nuclear safety and health has for so long been preempted by federal law, Congress must stipulate to permit enforcement or oversight by the tribal sovereign.

To assure government compliance with its safety, health, and waste removal provisions the agreement should provide for very high stipulated penalties for each day of non-compliance. The penalties should come from an escrow account or other enforceable source to assure that federal financial obligations are discharged. A tribunal capable of evaluating violations, assessing fines, and compelling compliance must be stipulated in the MRS agreement.

^{497.} The Nuclear Waste Fund would be the logical vehicle for such action. It would, however, require an amendment to force Congress to take non-revocable action to keep funding at a level sufficient to meet current needs. Since this option would require expanding the list of currently authorized Nuclear Waste Fund uses, Congress would need to escrow additional federal funds in order to meet future demands. NWPA § 302 (codified as amended at 42 U.S.C. § 10222).

^{498.} See supra § I-A (discussing history of radioactive waste buildup).

^{499.} See Walker & Gover, Commercial, supra note 260, at 261-62 (discussing the need for congressional provision of funds to permit Indian nations to regulate waste disposal projects on their own lands).

Enforcing promises made by the United States to leave the reservation at a date certain or after an accident and to remove all nuclear waste will be far more difficult to resolve since the government itself must be compelled to act. One alternative is a treaty between the tribe and the U.S., one of the treaty terms including a stipulation by the U.S. that a violation of health, safety, sovereignty or nuclear material removal are subject to United Nations and World Court jurisdiction. Such stipulated jurisdiction would enable tribes to resort to an entity other than the sovereign whom they oppose in this matter.

Another protection which seems absolutely essential is that the United States stipulate to provide an alternative sovereign homeland for the tribe if some or all of the Indian land is damaged or destroyed and the tribe elects to abandon some or all of that land. The land should be targeted in advance, the agreement must be enforceable by specific performance and not by money damages, and final enforcement of those promises would require either binding arbitration or resort to an international tribunal.

Conclusion

Governments must respect democratic decision making within Indian communities and must ensure that relations between Indians and their neighbors are based on agreement rather than domination. Although Indian communities, like all others, have difficult decisions to make about their development, there is good reason to believe that if Indians are permitted to chart their own future they will continue to serve not only themselves, but also the global environment. Working together as equals, Indian communities and the rest of the world can share important lessons about how best to provide for all future generations. 501

Many will respond to this article by asserting that what is happening to Indians is not any different from what happens to other American communities; the path of development is always costly to someone whose land is crossed. The nation has asked many to sacrifice for national development. Why, then, is the issue different for Native Americans, especially if the siting is compensated? The answer is that the history and the law concerning Indian nations, and the status and role of Indian tribes differs from that of any other community. Through conquest, military might

^{500.} A framework for international support of Indian environmental rights exists in the United Nations. Wiggins, *supra* note 285, at 351-54. The status of "dependent sovereigns" within the United States may, however, be incompatible with U.N. definitions of independent indigenous peoples and may therefore raise jurisdictional problems. *Id*.

^{501.} Id. at 354.

and federal legislation, the U.S. took the land of Native Americans and made it the land of white settlers. Through generations of treaties between sovereign Indian nations and the new American nation, the United States secured that land for its own use. As the United States broke one treaty after another,⁵⁰² the land base and population base of Indian nations were drastically reduced. Many tribal cultures were destroyed after contact with Europeans and Euro-Americans.⁵⁰³ Each remaining tribe is a nation and to destroy that nation's land will annihilate a nation within America's borders.

Now, the United States asks a single community to volunteer to take half a century of nuclear waste onto its own lands. It is the decision of each of those sovereign nations whether to accept the bargain the U.S. offers. We must remember that most Indian reservations are where they are, in the vast and open regions of our country, free of population centers, because the United States chose to banish them there. In order to exercise their sovereignty, to employ each generation of young tribal citizens, and to move further into the future of their nation, most tribes must create jobs and generate income in regions far removed from urban centers of commerce and economic power. The waste trade offers one of very few alternatives.

There is no single answer for all Indian nations, no single vision imposed upon all those considering the nuclear waste trade. Instead, there must be a kaleidoscope of visions, turned by the hand of Indian nations. But the stones within the kaleidoscope are often limited by the reality of what opportunities the U.S. extends to Indian nations; what access to markets and technology the U.S. opens to them; and the degree to which United States' law permits tribes to participate freely in the world economy. The dominant society is not in control of the vision, but it is in control of access to many of the stones, primarily the stones of knowledge, political power, and economic development. These stones are necessary for a vision of

^{502.} Congress has plenary power to abrogate treaties with Indian tribes. Lone Wolf v. Hitchcock, 187 U.S. 553 (1903) ("The power exists to abrogate the provisions of an Indian treaty, though presumably such power will be exercised only when circumstances arise which will not only justify the government in disregarding the stipulations of the treaty, but may demand, in the interest of the country and the Indians themselves, that it should do so.").

^{503.} See generally Bill Ong Hing, Beyond the Rhetoric of Assimilation and Cultural Pluralism: Addressing the Tension of Separatism and Conflict in an Immigration-Driven Multiracial Society, 81 Cal. L. Rev. 863, 922 (1993) (discussing federal policy of assimilating Native American children); see also Wilson, supra note 164 (discussing periods of assimilation).

sovereignty, environmental protection and economic success.⁵⁰⁴ The dominant society's visions must stand beside those of the Indian peoples if we are to discover the full range of vision.

Although the people have known the experience and difficulty of loss, they did not understand the meaning of that strange dawn in 1945 and in some ways they still don't. And it is because U.S. society doesn't understand either and refuses to deal with it. Thorough knowledge was what was always required to live by for Indian people; since the Mericano, knowledge has been kept in some hidden place and has been used as a controlling power. 505

It is important to know both the unrealistic reactions of fear and the worst scenario of doomsday in order to balance accurately. It may be equally important to understand the United States' record of honoring its treaties and agreements with Native Americans and its record on equitably protecting their environment.

Native Americans must have both full knowledge and real alternatives to the nuclear waste trade if they are to have true freedom of choice. It is states and federal governments, industries and academic institutions who have the ability to offer economic alternatives to nuclear waste trade. No government or environmental group should demand that Native Americans reject nuclear waste. They are sovereign nations.

Let the Yakima speak for us all: "In this nuclear age the Yakimas stand not for or against nuclear energy, but for the Safety and Protection of the Balances of Nature so that generations yet unborn may live on this earth in peace and health." Indians bear the scourge of generations of removal, genocide, stigmatization, disempowerment and forced isolation. The weight of United States' environmental oversights, crimes and general neglect has fallen heavily upon these land-based sovereigns while the benefits and environmental advances affected them little. Non-Indian people must stand beside them while they decide how to treat the waste of the nation which laid them waste for so long.

^{504.} See generally Philip J. Smith, Indian Sovereignty and Self-Determination: Is A Moral Economy Possible? An Essay, 36 S.D. L. Rev. 299 (1991); see also Dean B. Suagee, Self-Determination for Indigenous Peoples at the Dawn of the Solar Age, 25 U. Mich. J.L. Ref. 671 (1992).

^{505.} Ortiz, supra note 21, at 63-64.

^{506.} Hovis, supra note 39, at 54 (citing Oral testimony at Public Hearings of the United States Department of Transportation, Material Transportation Bureau, Research and Special Programs Administration, Seattle, Washington (Apr. 18, 1980)) ("The testimony was on behalf of the Yakima Indian Nation and the public hearing concerned highway routing of radioactive material.").