# NUCLEAR POWER COMPANIES SUING THE DEPARTMENT OF ENERGY: A LEGAL REMEDY MAGNIFYING NUCLEAR ENDS

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## I. INTRODUCTION

Many of our nation's people would argue that progress must be made in the construction of a permanent nuclear waste repository.[1] We must ask ourselves, however, at what cost the present delays should end. Should we rely on contractual deadlines and politics rather than science? Should we forsake adequate environmental, geological, and engineering studies in our efforts to speed up the process? Should we hurry the process at the risk of construction defects? If there is not enough money to safely construct the facility, should the government merely do the best it can with what it has and move on with the process? While it may seem unlikely that anyone would answer these ques-

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[1] While the State of Nevada, several environmental groups, and many scientists oppose the hastening of construction at Yucca Mountain, the only potential repository site currently being considered, many others, including Congress, the DOE, the nuclear power industry, and several other states where nuclear power is generated, are pushing for immediate construction of a repository. 42 U.S.C. § 10172(a) (1997). *Compare* Scott Allen, *If We Can't Bury Nuclear Waste in Nevada, Where Can We?*, BOSTON GLOBE, May 17, 1993, at 25, *available at* 1993 WL 6593407 (Nevadans oppose the Yucca Mountain repository 3-to-1 and the state refused a $100 million per year offer from the federal government to give up their veto right against the plan.); David Lazarus, *Diablo Canyon Quandary/Plans for open-air storage of spent fuel rods receive environmentalists' reluctant approval*, SAN FRANCISCO CHRONICLE, Nov. 7, 2000, at A1, *available at* 2000 WL 6496178 (Klaus Schumann, a Green Party activist and member of the San Luis Obispo County Nuclear Waste Management Committee, states that dry storage at the utility sites is safer than transporting the waste to a central repository.); *Governors Push for Removal of Spent Fuel*, BANGOR DAILY NEWS, Bangor, Me., Sept. 30, 2000, *available at* 2000 WL 22134955 [hereinafter *Governors Push*] (governors of Connecticut, Massachusetts, and Maine pushing for removal of wastes from their states); *Failure to Meet Nuclear Waste Storage Deadline: Hearing Before the Comm. On Energy & Natural Resources*, 106th Cong. (2000) (statement of John W. Rowe, Chairman, Unicorn Corp. and Commonwealth Edison), *available at* 2000 WL 23833267 [hereinafter Rowe Testimony] ("construction of the repository [must begin] so that it is opened at the earliest possible date"); Steve Cook, *Radioactive Waste: Murkowski Says DOE Pact on Waste Will Deprive Permanent Facility of Funds*, ENVT. RPTR. (BNA) No. 31, at 2135 (Oct. 6, 2000) [hereinafter *Radioactive Waste*] (Republican Senator Frank Murkowski of Alaska, Chairman of the Energy and Natural Resources Committee, encourages speeding up construction of the Yucca Mountain facility.). *See infra* notes 132-34 for information on several scientists' views of the Yucca Mountain project.

tions in the affirmative, these issues will likely arise in cases brought by nuclear power companies against the United States Department of Energy (DOE).

The nuclear power companies are magnifying the already serious problem of nuclear waste disposal by asking for damages – damages that will take away from the funds necessary to build a nuclear waste repository. The power companies' claims are based on the DOE's failure to begin removal of nuclear waste from power company properties by the January 31, 1998 contractual deadline.[2] The potential liability arising from these cases is between $2 billion and $80 billion.[3] This liability could result in billions of dollars taken away from the Nuclear Waste Fund; billions of dollars unavailable for the construction of a permanent nuclear waste repository.[4] If there is less money available for construction, additional funding must be allocated from elsewhere. If additional funding is not allocated, either construction delays will continue or construction must be conducted below proposed standards. Governmental attempts to prevent additional damages from accruing will likely result in the government pushing forward with construction, not only with less funding than projected, but also on a tighter schedule. There is a risk that politics will win over science, with Congress discontinuing research and ignoring studies indicating Yucca Mountain is not an appropriate location for a permanent nuclear waste repository.[5] These lawsuits would result in a disastrous downward spiral: more delays causing greater damages, greater damages resulting in less money in the Nuclear Waste Fund, less money in the Nuclear Waste Fund creating

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[2] *See* Maine Yankee Atomic Power Co. v. United States, 225 F.3d 1336 (Fed. Cir. 2000); N. States Power Co. v. United States, 224 F.3d 1361 (Fed. Cir. 2000).

[3] *See, e.g.*, *Radioactive Waste: DOE Reaches First Pact With Utility Over Possession of Spent Nuclear Fuel*, ENVT. RPTR. (BNA) No. 31, at 1568 (July 28, 2000) [hereinafter *Radioactive Waste*] (Steve Unglesbee of the Nuclear Energy Institute estimated liability ranging up to $60 billion); *Waste Ruling Blow to DOE*, 20 MODERN POWER SYSTEMS 11 (2000), *available at* 2000 WL 23384463 (estimates damages running as high as $50 billion); Tony Batt, *Energy Official Says Liability Overstated*, LAS VEGAS REV.-J., Sept. 21, 2000, at 4B, *available at* 2000 WL 8212058 (citing nuclear industry estimates between $40 billion and $80 billion; government estimates provided by Mary Anne Sullivan, general counsel for the DOE, falling much lower at approximately $3 billion; and estimates of Senator Frank Murkowski (R-Alaska) reaching up to $80 billion); Tony Batt, *Yucca Mountain Project: Budget cuts may delay license*, LAS VEGAS REV.-J., Sept. 29, 2000, at 5B (citing Senator Murkowski estimating damages between $38 billion and $61 billion); Cook, *supra* note 1 (Senator Murkowski making lower estimates of damages, totaling only $60.9 billion); Mark Hand, *The Saga of Yucca Mountain*, PUB. UTIL. FORT., Mar. 1, 2002, at 38 (citing DOE estimates of around $2 billion and nuclear industry estimates of $50 billion).

[4] Section 302(c) of the NWPA directed the U.S. Treasury to establish a Nuclear Waste Fund. Disposal fees paid by nuclear power companies to the DOE are required to be deposited into this fund, and can only be used for certain enumerated waste disposal activities. 42 U.S.C. §§ 10222(c)-(d). As fees paid into the Nuclear Waste Fund are based directly on the amount of nuclear energy produced by the industry, reductions in input based on credits given to companies, or damages paid through settlement or judgments, would reduce the total available funding to construct a permanent repository or fulfill other enumerated purposes.

[5] *See, e.g.*, *Failure to Meet Nuclear Waste Storage Deadline: Hearing Before the Comm. On Energy & Natural Resources*, 106th Cong. (2000) (statement of Ivan Itkin, Director of DOE Office of Civilian Radioactive Waste Management), *available at* 2000 WL 23833264 [hereinafter Itkin Testimony] (they are "nearing completion of the scientific and engineering work"). *See infra* notes 136-37 for explanation of how negative results are being ignored.

more delays and shifting the focus from safety and science to politics and deadlines.

## II. Background Facts and Legal Doctrines

### A. *Nuclear Energy: A Major Power Player in the United States*

As energy supply and cost concerns have increased in recent years in the United States,[6] the nuclear power industry's role as a significant provider of low cost energy has also increased.[7] In 1999, the nuclear power industry supplied approximately twenty percent of the nation's energy,[8] reaching record levels of production.[9] Nuclear Energy Institute figures show that nuclear energy production was 5.1 percent higher for the first nine months of 2000 than the same months in 1999.[10] Industry leaders estimate that total 2000 production was four percent higher than the 1999 production levels.[11]

Production increases have occurred despite a decline in the number of operational power plants. No new plants have opened in the United States since 1996,[12] while four have shut down during this period.[13] These production increases have resulted because U.S. nuclear producers have steadily increased their actual level of production relative to production capacity since the 1980s, a figure known as the capacity factor.[14] Nuclear power producers could continue this trend, as plants reached only an 89.6 percent capacity factor in 2000.[15]

Nuclear energy is the only major form of domestic energy that has not undergone substantial price increases in recent months.[16] Marvin Fertel, Senior

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[6] Neville Nankivell, *Nuclear Renaissance . . . : As concern grows over rising fuel costs and reliable energy supplies, nuclear power is getting a second look. So are the arguments against it*, National Post, May 4, 2001, at C19, *available at* 2001 WL 20480449.

[7] *Id.*

[8] Rowe Testimony, *supra* note 1. John W. Rowe, as the Chairman, President, and CEO of Unicorn Corporation and Commonwealth Edison, reflects a nuclear industry view of the role of nuclear power in our nation's energy supply. *See also Nuclear Energy Surpasses Coal-Fired Plants as Leader in Low-Cost Electricity Production*, Nuclear Energy Institute, *at* http://www.nei.org/doc.asp?docid=702&UpFront=true (last visited Feb. 24, 2003) [hereinafter *Nuclear Energy*] (based on 1999 figures from the DOE's Energy Information Administration).

[9] *Nuclear Energy*, *supra* note 8.

[10] *Id.*

[11] *Id.*

[12] *Nuclear Data: U.S. Nuclear Power Plants*, Nuclear Energy Institute, *at* http://www.nei.org/doc.asp?catnum=3&catid=13 (last visited Feb. 24, 2003) [hereinafter *Nuclear 13*] (A total of five plants opened in the 1990s: three in 1990, one in 1993, and one in 1996.).

[13] *Nuclear Data: Reactors Shut Down/Decommissioned*, Nuclear Energy Institute, *at* http://www.nei.org/doc.asp?catnum=3&catid=19 (last visited Feb. 24, 2003) [hereinafter *Nuclear 19*] (Two plants were shut down in 1997 and two in 1998. A total of ten plants have shut down since 1989.).

[14] *Nuclear 13*, *supra* note 12.

[15] *Id.*

[16] Rowe Testimony, *supra* note 1. *See also Nuclear Energy*, *supra* note 8 (Utility Data Institute figures show that nuclear energy was the lowest cost major fuel source for 1999 at 1.83 cents per kilo-watt hour (kwh). This was lower than 1998 production costs. These

Vice President of the Nuclear Energy Institute, attributes the continuing low prices of nuclear energy to low production costs.[17]

### B. *The Nuclear Waste Policy Act*

On January 7, 1983, Congress enacted the Nuclear Waste Policy Act of 1982[18] (NWPA) in an effort to dispose of the nation's nuclear waste while addressing the safety of the public and environment.[19] The NWPA makes the federal government responsible for disposal of the waste, and the nuclear industry responsible for disposal costs.[20]

The NWPA effectively required nuclear power companies to enter into contracts with the DOE for the disposal of spent nuclear fuel and high-level nuclear waste.[21] Specifically, the contracts were required to provide that "following commencement of operation of a repository," the Secretary of Energy was to take title of the waste.[22] Additionally, in exchange for payment of statutorily established fees, the Secretary was required to dispose of the waste "beginning not later than January 31, 1998."[23] These fees included a one-time payment based on energy produced before April 7, 1983, and on-going fees based on later energy production.[24]

In 1983, the DOE created the Standard Contract for Disposal of Spent Nuclear Fuel.[25] The contract incorporated the disposal fees to be paid by the nuclear power companies,[26] the January 31, 1998 disposal date established by the NWPA,[27] and included delay and remedy provisions.[28] Under the delay provisions, neither party would be held liable for unavoidable delays. The contract defines unavoidable delays as those outside the control, fault, or negli-

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figures do not reflect the large increases in oil and gas prices that were experienced in 2000.).

17 *Nuclear Energy*, *supra* note 8.

18 42 U.S.C. §§ 10101-10270 (1994).

19 42 U.S.C. § 10131(a)(4).

20 42 U.S.C. § 10131(a)(4)-(5).

21 42 U.S.C. § 10222(a)(1) (authorizing the DOE to enter into nuclear waste disposal contracts); 42 U.S.C. § 10222(b)(1)(A) (prohibiting the Nuclear Regulatory Commission from issuing licenses to nuclear power companies that fail to enter into waste disposal contracts with the DOE).

22 42 U.S.C. § 10222(a)(5)(A).

23 42 U.S.C. § 10222(a)(5)(B).

24 42 U.S.C. § 10222(a)(2) and (3).

25 10 C.F.R. § 961.11 (1983).

26 10 C.F.R. § 961.11 (VII.A).

27 10 C.F.R. § 961.11 (II).

28 10 C.F.R. § 961.11 (IX.A) (provides that neither party to the contract "shall be liable under this contract for damages caused by failure to perform its obligations hereunder, if such failure arises out of causes beyond the control and without the fault or negligence of the party failing to perform"); § 961.11 (IX.B) (provides that "[i]n the event of any delay in the delivery, acceptance or transport of [Spent Nuclear Fuel] to or by DOE caused by circumstances within the reasonable control of either the Purchaser or DOE or their respective contractors or suppliers, the charges and schedules specified by this contract will be equitably adjusted to reflect any estimated additional costs incurred by the party not responsible for or contributing to the delay"); § 961.11 (XI) (provides that "[n]othing in this contract shall be construed to preclude either party from asserting its rights and remedies under the contract or at law").

gence of the non-performing party.[29] A non-performing party is, however, liable for an avoidable delay, a delay within its "reasonable control."[30]

The original NWPA provisions, as enacted in 1983, required the Secretary of Energy to recommend at least five possible nuclear repository sites to the President.[31] The Secretary then had to select three candidate sites from the recommendations, subject to the President's approval.[32] In 1986, the Reagan administration selected Hanford Reservation, Washington; Deaf Smith County, Texas; and Yucca Mountain, Nevada as the three candidate sites.[33]

Texas and Washington had great political advantage over Nevada in the selection process, as top congressional leaders represented those two candidate states.[34] These representatives were influential in Congress's decision to concentrate on only one site.[35] In 1987, in what is commonly known as the "Screw Nevada Bill,"[36] Congress amended the NWPA to specify that Yucca Mountain was the favored repository location.[37]

In response to the 1987 amendment to the NWPA, the Nevada legislature, in January 1989, enacted two resolutions opposing the construction of a nuclear waste repository in the state.[38] In June 1989, the legislature passed legislation making it illegal "to store high-level radioactive waste in Nevada."[39]

In an effort to object to the characterization of Nevada as a potential repository site, Nevada transmitted its resolutions and legislation to Congress and the President,[40] as permitted under the NWPA.[41] The Ninth Circuit held that these attempts at a legislative veto failed because they were preempted by

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[29] 10 C.F.R. § 961.11 (IX.A).

[30] 10 C.F.R. § 961.11 (IX.B).

[31] 42 U.S.C. § 10132.

[32] *Id.*

[33] *See generally* Mark E. Rosen, Nevada v. Watkins*: Who Gets the Shaft?*, 10 VA. ENVTL. L.J. 239, 247-48 (1991); James H. Davenport, *The Federal Structure: Can Congress Commandeer Nevada to Participate in its Federal High Level Waste Disposal Program?*, 12 VA. ENVTL. L.J. 539, 549 (1993).

[34] The Speaker of the House and Vice President of the United States, who also serves as President of the Senate, were both from Texas. Washington's interests were advanced by the House Majority Whip, a representative from that state. At the time, Nevada had no high-ranking members of Congress. Michael Barone & Grant Ujifusa, ALMANAC OF AMERICAN POLITICS 1148, 1186-89 (1990).

[35] *See* Press Release, Edward J. Markey, Chairman of the Subcommittee on Energy Conservation and Power of the Committee on Energy and Commerce, U.S. House of Representatives (Oct. 20, 1986).

[36] *See, e.g.*, Ed Vogel, *Innocence Lost*, LAS VEGAS REV.-J., July 10, 2002, at A9 (stating that "[t]he [Yucca Mountain Amendments] became known in the Silver State as the 'Screw Nevada Bill'").

[37] 42 U.S.C. § 10172(a) (1997). *See also* Allen, *supra* note 1.

[38] Assembly Joint Resolution 4 expressed the legislature's "adamant opposition to placement of a high-level nuclear waste repository in the State of Nevada." Assembly Joint Resolution 6 provided that the federal government shall not place a repository in Nevada "without the prior consent of the Nevada Legislature or cession of jurisdiction." AJR 6 went on to deny both consent to and cession of jurisdiction for the placement of a repository in the state. *See* Nevada v. Watkins, 914 F.2d 1545, 1550-51 (9th Cir. 1990), *cert. denied,* 111 S. Ct. 1105 (1991).

[39] NEV. REV. STAT. 459.910 (1989).

[40] *See Watkins*, 914 F.2d at 1551.

[41] 42 U.S.C. § 10136(b)(2) (1997).

the NWPA, the very statute that granted Nevada the authority to object. The court found that Congress's intent to characterize Yucca Mountain as a potential repository, as expressed through the 1987 amendments, would be frustrated if Nevada was allowed to object.[42]

### C. *Department of Energy's Breach of Contract*

The DOE announced, in 1994, that it would be unable to meet the January 1998 statutory and contractual deadline for disposal of nuclear waste, and that disposal would not begin until at least 2010.[43] The DOE, in the Final Interpretation of Nuclear Waste Acceptance Issues, determined that in the absence of a permanent or interim storage facility, the government did not have an unconditional statutory or contractual duty to begin accepting waste by January 31, 1998.[44] The DOE concluded that under the "logic, language, and structure" of the NWPA, the DOE's duty to take title to and dispose of nuclear waste arises only after a repository begins operation.[45] The agency reasoned that the DOE could not reasonably be required to take title to and dispose of waste in the absence of a functional repository.[46] The DOE noted the hurdles that must be faced before disposal could begin – determining that, with such burdens, the 1998 deadline could not be unconditional.[47]

The United States Court of Appeals for the District of Columbia Circuit vacated the Final Interpretation in *Indiana Michigan Power Co. v. United States*,[48] finding the deadline was not conditioned on the availability of a repository.[49] The court held that "dispose" should be read under its common meaning – "to get rid of; throw away; discard" – rather than under the statutory definition of disposal, the interpretation advanced by the DOE.[50] The court further found that disposal could not be conditioned on the opening of a repository, as the Standard Contract provides for the DOE's services to commence with facility operations, and facility is defined to include "facilit[ies] to which spent nuclear fuel and/or high-level radioactive waste may be shipped by DOE prior to its transportation to a disposal facility."[51] The court also observed that the NWPA included definitions of disposal broader than those advanced by the

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[42] *See Watkins*, 914 F.2d at 1561.

[43] Waste Acceptance Issues, 59 Fed. Reg. 27,007-08 (Dep't Energy May 25, 1994) (No. of Inquiry).

[44] Nuclear Waste Acceptance Issues, 60 Fed. Reg. 21,793 (Dep't Energy May 3, 1995).

[45] *Id.* The DOE also notes that the Standard Contract conditions the DOE's provision of services on "the commencement of facility operations." *Id.* (citing 10 CFR § 961.11, Art. II).

[46] *Id.*

[47] *Id.* Some examples of hurdles the DOE must face in preparing a repository are: (1) the fact that Yucca Mountain is the only potential disposal site under the statute; (2) that Yucca Mountain may be found unsuitable as a disposal site; (3) conditions placed on the development of the site; and (4) numerous procedural steps that must be followed in the approval of the site. *Id.*

[48] 88 F.3d 1272 (D.C. Cir. 1996).

[49] *Id.*

[50] *Id.* at 1275 (citing WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY UNABRIDGED 654 (1961)).

[51] *Id.* (citing 10 C.F.R. § 961.11, Art. 1).

DOE.[52] The D.C. Circuit determined that the DOE need not take title to the waste, which requires commencement of repository operations, prior to disposing of spent nuclear fuel.[53] Therefore, the court held that the plain reading of the NWPA and Standard Contract required removal of waste from the nuclear power plants by the January 1998 deadline.[54]

The DOE then announced that it would still be unable to meet the contractual deadline and its failure to perform would not be compensable, as it would be considered an unavoidable delay under the contract.[55] In *Northern States Power Co. v. Department of Energy*[56] (hereinafter *Northern States I*) the D.C. Circuit refused to grant several nuclear companies a writ of mandamus ordering the DOE to meet its contractual deadline.[57] In the same decision, however, the D.C. Circuit issued a writ of mandamus prohibiting the DOE from determining that delays caused because the repository had not been completed were unavoidable under the remedies provision of the Standard Contract.[58]

While the DOE acknowledged its contractual duty to remove nuclear waste from the plants by January 1998, it maintained that meeting the deadline was impossible because of complications with developing a permanent repository at Yucca Mountain.[59] Waste removal has still not begun. The nuclear power companies argue that construction of a permanent repository must begin immediately, so that the facility may open as soon as possible.[60] The government continues to project, however, that the repository will not be completed and waste disposal will not begin by 2010.[61]

In the meantime, waste is being stored at the power company sites. The utilities are storing much of this waste in large pools of water that cool the waste. As the pools at many plants are running out of space, several companies have, or will soon, incur the cost of constructing on-site dry storage facilities. While these dry storage facilities often consist of casks that can also serve as containers for transport, they are very costly.[62]

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[52] *Id.*

[53] *Id.* at 1276.

[54] *Id.* at 1277.

[55] Lira Behrens, *Judges Appear Sympathetic to Utilities' Plea During Waste-Case Orals*, INSIDE ENERGY, Sept. 29, 1997, *available at* 1997 WL 9131258.

[56] 128 F.3d 754 (D.C. Cir. 1997).

[57] *Id.* at 759.

[58] *Id.* at 760.

[59] John J. Fialka, WALL STREET JOURNAL (subscription required), Sept. 1, 2000.

[60] Rowe Testimony, *supra* note 1. *See also Failure to Meet Nuclear Waste Storage Deadline: Hearing Before the Comm. On Energy and Natural Resources*, 106th Cong. (2000) (statement of Michael E. Thomas, Vice President, Maine Yankee Atomic Power Company), *available at* 2000 WL 1533436 [hereinafter Thomas Testimony].

[61] Maine Yankee Atomic Power Co. v. United States, 225 F.3d 1336 (Fed. Cir. 2000). *But see* Memorandum from the Comptroller General of the U.S. General Accounting Office 299 (Sept. 27, 1994), *available at* 1994 WL 810573 (General Accounting Office does not believe that the 2010 completion date is realistic.).

[62] Thomas Testimony, *supra* note 60 (Maine Yankee's dry storage facility will cost about $60 million to construct and another $4 million to operate each year). Lazarus, *supra* note 1 (Pacific Gas & Electric's (PG&E) Diablo Canyon nuclear power plant is currently drawing up plans to construct a dry storage facility because they are running out of space in their storage pools. Such a storage facility has already been constructed at PG&E's Humbolt Bay nuclear power plant.).

### D. Claims Against the Department of Energy

On August 31, 2000, the Federal Circuit Court of Appeals decided two cases on the issue of nuclear waste: *Maine Yankee Atomic Power Company v. United States*[63] and *Northern States Power Company v. United States*[64] (hereinafter *Northern States III*). Based on these two cases, the court held that four nuclear power companies could sue the DOE for breach of contract. These claims were based on the DOE's failure to dispose of the companies' nuclear waste by the January 31, 1998 contractual deadline.[65] The DOE argued that the utilities should first be required to pursue administrative remedies available under the contract, as the remedy provision included any delay in the acceptance of nuclear waste.[66]

The Federal Circuit disagreed, finding that the administrative remedy provisions did not apply to the damages claimed by the power companies.[67] In order for the remedy provisions to apply, damages must have accrued under the contract.[68] Damages are not under the contract unless the breaching party has begun satisfying its contractual obligations.[69]

Additionally, the court found that the limited relief provided in the remedy provisions of the Standard Contract did not provide adequate relief for complete failure to perform under the contract.[70] Here, the DOE had not yet begun to satisfy its obligations under the contract through the removal of waste from power plants. As such, damages were outside the scope of the contract and a satisfactory remedy was available only through a breach of contract claim.[71]

While the *Maine Yankee* and *Northern States III* decisions applied specifically to four nuclear power companies, they have implications for the entire nuclear power industry. Some believe these decisions will encourage other companies to pursue their contractual rights against the DOE.[72] Currently, seventeen breach of contract cases between nuclear power companies and the DOE are pending before the United States Court of Federal Claims.[73] Total damages from all potential claims could be as high as $80 billion dollars.[74] The *Maine*

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[63] 225 F.3d 1336 (Fed. Cir. 2000) (involving three New England power companies: Maine Yankee Atomic Power Company, Connecticut Yankee Atomic Power Company, and Yankee Atomic Electric Company).

[64] 224 F.3d 1361 (Fed. Cir. 2000).

[65] *See generally Maine Yankee*, 225 F.3d 1336; *N. States*, 224 F.3d 1361.

[66] *Maine Yankee*, 225 F.3d at 1338; *N. States*, 224 F.3d at 1366. 10 C.F.R. § 961.11, Art. IX.B (provides that "any delay in the delivery, acceptance or transport of [Spent Nuclear Fuel]" within the control of one of the contract parties is subject to equitable adjustment of charges or schedules).

[67] *Maine Yankee*, 225 F.3d at 1342; *N. States*, 224 F.3d at 1367.

[68] *Maine Yankee*, 225 F.3d at 1341; *see generally N. States*, 224 F.3d at 1367.

[69] *Maine Yankee*, 225 F.3d at 1341; *see generally N. States*, 224 F.3d 1361.

[70] *Maine Yankee*, 225 F.3d at 1342; *see generally N. States*, 224 F.3d 1361.

[71] *Maine Yankee*, 225 F.3d at 1340-43; *N. States*, 224 F.3d 1361 (explaining conclusion in general and referencing *Maine Yankee* for a full explanation of conclusion).

[72] Lira Behrens, *DOE Loses Key Nuclear Waste Decisions*, INSIDE ENERGY/WITH FEDERAL LANDS, Sept. 4, 2000, *available at* 2000 WL 14125724 (quoting Bob Bishop, general counsel for the Nuclear Energy Institute).

[73] *Fed. Court Allows TVA Contract Claim to Proceed Against DOE*, ANDREWS HAZARDOUS WASTE LITIG. REP., Feb. 15, 2002, at 9.

[74] Batt, *Energy Official Says Liability Overstated*, *supra* note 3. *See generally* note 3.

*Yankee* and *Northern States III* cases alone amount to almost $1.4 billion in claims, with Maine Yankee Atomic Power Company, Connecticut Yankee Atomic Power Company, and Yankee Atomic Electric Company seeking approximately $300 million and Northern States Power seeking more than $1 billion.[75]

One company, PECO Energy, settled its claim against the DOE with respect to its Peach Bottom Atomic Power Station.[76] The settlement allows PECO to reduce its Nuclear Waste Fund deposits from approximately $35 million per year to $5 million per year, while the company continues to store waste on its premises.[77] Many are skeptical of the government's settlement attempts, worrying that a "one size fits all" settlement plan will fail, and that settlement does not address the industry's desire to have the waste removed from the properties.[78]

In *Alabama Power v. Department of Energy*,[79] eight nuclear power companies sued the DOE in the Eleventh Circuit Court of Appeals for siphoning money away from the proposed repository by reaching this settlement with PECO.[80] The companies alleged that settlements altering the statutory and contractual fee payment schemes are outside the legal authority of the DOE, resulting in unauthorized use of the Nuclear Waste Fund.[81] The Eleventh Circuit agreed, finding that "the NWPA clearly does not allow the Department to utilize [Nuclear Waste Fund] monies to pay for the interim storage costs of the Department's contract creditors."[82]

The Eleventh Circuit reached its decision for several reasons. First, the NWPA specified the types of waste disposal activities for which the Nuclear Waste Fund could be used – a group of activities directed at permanent rather than interim storage.[83] The court also noted that the NWPA specifically requires that interim storage be funded from the Interim Storage Fund rather than the Nuclear Waste Fund.[84] In reaching its conclusion, the Eleventh Circuit cited the "common sense and . . . practical understanding of the regulatory scheme Congress envisioned," finding that the government would never be

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[75] *Wastes & Hazardous Substances Nuclear Waste: Court Allows Plants to Sue DOE Over Fuel*, AMERICAN POLITICAL NETWORK GREENWIRE, Sept. 5, 2000. *See also* Behrens, *supra* note 72.

[76] *Radioactive Waste*, *supra* note 3.

[77] Batt, *Energy official says liability overstated*, *supra* note 3. Batt, *Yucca Mountain Project*, *supra* note 3 (citing Senator Murkowski). *See also* Benjamin Grove, *DOE is Sued Over Nuclear Storage Deal*, LAS VEGAS SUN, Dec. 13, 2000.

[78] *See, e.g.*, Rowe Testimony, *supra* note 1; Cook, *supra* note 1 (citing John Rowe, Chairman of Unicom Corp., an electric utility holding company).

[79] 307 F.3d 1300 (11th Cir. 2002).

[80] Grove, *supra* note 77 (The eight companies involved in the suit are Georgia Power and Alabama Power (Southern Company affiliates), Duke Energy, Entergy, Carolina Power & Light Energy Inc., Florida Power & Light Group Inc., TXU Corp., and Northern States Power Company. These companies operate a total of fourteen nuclear power plants.). *See also Utilities Sue to End DOE-Peco Deal; Fear Nuclear Waste Fund Depletion*, NUCLEAR WASTE NEWS, Dec. 21, 2000, *at* 2000 WL 29762568 [hereinafter *Utilities Sue*].

[81] 307 F.3d at 1313.

[82] *Id.*

[83] *Id.* at 1314.

[84] *Id.*

held liable if the DOE could pay utilities for its breach from funds contributed by the utilities.[85]

### E. Nuclear Waste Fund

Although the Eleventh Circuit's decision in *Alabama Power* signals one circuit's approach to the contrary, money to satisfy the claims against the DOE could potentially come from the Nuclear Waste Fund. These same funds are also needed to complete the nuclear waste repository, enabling the Department of Energy to satisfy its obligations under the contract.[86]

The Nuclear Waste Fund consists of all payments made to the Secretary of Energy under contracts with nuclear power producers, and appropriations made by Congress.[87] Under the NWPA, the Nuclear Waste Fund can only be used for limited purposes.[88] While no affirmative decision has been made that judgments can be taken from the fund, the D.C. Circuit in *Northern States Power Co. v. U.S. Department of Energy* (*Northern States II*) declined to find that judgments could not be taken from the fund.[89]

### F. Recent Developments

Progress has been made toward the development of Yucca Mountain since the *Maine Yankee* and *Northern States III* decisions were reached. In November 2001, the Nuclear Regulatory Commission issued its final regulations regarding disposal of nuclear waste at Yucca Mountain.[90] On February 14, 2002, Energy Secretary Spencer Abraham formally recommended Yucca Mountain as the nation's nuclear waste repository.[91] The following day, President Bush accepted Abraham's recommendation and submitted the issue to Congress.[92] Nevada Governor Kenny Guinn vetoed the proposal in April 2002.[93] Guinn's veto was overridden by the United States House of Representatives in May 2002 and the U.S. Senate in July 2002.[94] Bush signed the legislation on July 23, 2002, making Yucca Mountain the nation's sole nuclear waste repository.[95]

Nevada government officials, residents, and business leaders continue to oppose storage of nuclear waste at Yucca Mountain, as the DOE works to

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[85] *Id.*
[86] 42 U.S.C. § 10222(d).
[87] 42 U.S.C. § 10222(c).
[88] 42 U.S.C. § 10222(d) (limiting use of the Nuclear Waste Fund to "radioactive waste disposal activities").
[89] N. States Power Co. v. United States Dep't of Energy, 1998 WL 276581, *1 (D.C. Cir. 1998). *But see* Alabama Power v. Dep't of Energy, 307 F.3d 1300 (11th Cir. 2002) (prohibiting deductions from the Nuclear Waste Fund for settlement of claims against the DOE).
[90] *NRC Issues Final Disposal Standard for Yucca Mountain*, NUCLEAR WASTE NEWS, Nov. 8, 2001.
[91] *Bush Signs Bill Designating Yucca Mountain as Nuclear-Waste Dump*, 22 ANDREWS UTIL. INDUS. LITIG. REP. 14 (Aug. 2, 2002).
[92] *Id.*
[93] *Id.*
[94] *Id.*
[95] *Id.*

obtain a license from the Nuclear Regulatory Commission.[96] Nevada's senior senator, Harry Reid, has vowed to do everything in his power to prevent such storage.[97] Casino executives plan to fight the project with their national clout.[98] Nevada also continues to fight the project through litigation and has developed the Nevada Protection Fund to support its opposition to the repository.[99] The state has taken further steps to make storage at the site more difficult, such as refusing to renew the DOE's water rights at Yucca Mountain.[100]

Other groups, including the Sierra Club and Nuclear Information Resources Service, oppose the project.[101] A coalition of organizations, which has formed the Transportation Safety Coalition, has also expressed concern about the regulations applicable to the Yucca Mountain repository.[102] Members of Congress, including Representative Richard Gephardt (D-Mo.), also oppose storage of nuclear waste at Yucca Mountain.[103]

## III. DISCUSSION

### *A. Implications of* Maine Yankee *and* Northern States III *on Current and Future Breach of Contract Cases Between Nuclear Power Companies and the DOE*

Leaders within the nuclear power industry feel the Federal Circuit's decisions in *Maine Yankee* and *Northern States III* are significant in several ways.[104] They believe greater damages will be awarded through breach of contract cases than would be awarded through administrative proceedings.[105] They speculate that many more damage claims will soon be filed by the nuclear industry, with the courts looking not to whether there is liability, but to how much liability there is.[106] They believe courts will award damages rather than

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[96] *Energy Secretary Approves Nev. Site as Nuclear-Waste Repository*, 8 ANDREWS UTIL. INDUS. LITIG. REP. 13 (Feb. 2002).

[97] *Id.*

[98] *Id.*

[99] Marta Adams & Andrea Nichols, *The Yucca Mountain Fight is Far From Over*, 10 NEV. LAW. 26 (Feb. 2002).

[100] The Nevada Water Engineering Office refused to extend the DOE's temporary water rights, which expired on April 9, 2002. Nevada Nuclear Waste Project Office Director Robert Loux explained that the license would not be renewed because "'[s]ite characterization is over' or DOE would not have made a formal recommendation." *Nevada Officials Plan to Leave Yucca Mountain High and Dry*, NUCLEAR WASTE NEWS, Mar. 14, 2002.

[101] *Bush Signs Bill Designating Yucca Mountain as Nuclear-Waste Dump*, *supra* note 91 (noting disapproval of Sierra Club Executive Directory Carl Pope); *Industry Celebrates Nuclear Future; Activists Plan Lawsuits, Protests*, NUCLEAR WASTE NEWS, July 11, 2002 (noting campaigns being considered by the Nuclear Information Resources Service).

[102] *Transportation Coalition Opposes Harmonization of NRC, IAEA Rules*, NUCLEAR WASTE NEWS, June 27, 2002 (The members of the Transportation Safety Coalition include the American Public Health Association, Environmental Working Group, Nevada Agency for Nuclear Projects, National Environmental Trust, Physicians for Social Responsibility, Public Citizen, and U.S. Public Interest Research Group.).

[103] *Yucca Mountain*, NUCLEAR WASTE NEWS, July 18, 2002 (quoting Representative Gephardt as vowing to "fight against spending money to implement the plan").

[104] *See* Rowe Testimony, *supra* note 1.

[105] *Id.*

[106] *Id.*

credits from the Nuclear Waste Fund, as would be the case with settlements, so judgments will not effect the construction of a repository.[107] The industry claim that damages will not be paid from the Nuclear Waste Fund is contradicted by other reports, however.[108] When the issue came before the D.C. Circuit, the court "express[ed] no opinion on the legality of the DOE's using utility or ratepayer-supplied monies to pay costs or damages."[109]

### *B. Public Policy Analysis*

#### *1. Nuclear Power Companies Creating a Downward Spiral: Suing for Damages Leading to Reduced Funds which Leads to More Delays and Increased Damages*

The nuclear power companies' lawsuits against the DOE decrease the funding available for the development and construction of a permanent nuclear waste repository. The settlement with PECO, for example, decreases funding by millions of dollars.[110] The PECO settlement is small, however, compared to the billions of dollars in damages that would be awarded if all cases between nuclear power companies and the DOE went to trial.[111] The reduced funding could be enough to cause delays that would result in waste continuing to pile up at power plants.[112] While the DOE asserted that the reduction in funding that would have resulted from settlements (between $2 billion and $3 billion) would not have caused problems for the Yucca Mountain project,[113] the same could probably not be said for the up to $80 billion in damages that could be awarded through litigation.[114]

#### *2. Need for Increased Funding from either Congressional Allocations or Nuclear Waste Fund Deposits by Nuclear Power Companies*

It is argued that, in order to prevent additional delays and damages, Congress must approve the full amounts requested for the project.[115] The fiscal year 2001 budget requests were not granted in full.[116] While site recommenda-

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[107] *Id.*

[108] Batt, *Energy Official Says Liability Overstated*, *supra* note 3.

[109] *Northern States II*, 1998 WL 276581, *1 (D.C. Cir. 1998).

[110] The PECO settlement will result in approximately $300 million less being deposited into the Nuclear Waste Fund. This figure is based on an annual reduction of about $30 million (from $35 million to $5 million) over the course of ten years, from the settlement date in 2000 to the projected date of repository completion in 2010. Cook, *supra* note 1 (based on statements made by Senator Murkowski, Chairman of the Energy and Natural Resources Committee on September 28, 2000).

[111] *See supra* note 3 (estimates of damages ranging from $2 billion to $80 billion).

[112] Cook, *supra* note 1 (citing comments made by Senator Murkowski).

[113] *Id.* (Ivan Itkin states that "potential loss to the fund from settlements would be at a level 'we can live with.'").

[114] *See generally supra* note 3.

[115] Cook, *supra* note 1 (citing comments made by Ivan Itkin, Director of the DOE Office of Civilian Radioactive Waste Management).

[116] *Id.*

tion was nevertheless completed in 2002,[117] insufficient funding could delay the Nuclear Regulatory Commission licensing of the facility.[118]

With Congressional approval, the DOE is authorized to increase fees paid by nuclear power companies, if necessary to place the full cost of disposal on the nuclear industry.[119] Increased rates result in power companies essentially paying damages to themselves. Another option, supported by the nuclear industry, would be to force all taxpayers to foot the bill through non-Nuclear Waste Fund congressional appropriations.[120]

*3. Affects on Yucca Mountain Repository*

*a. Additional Delays*

Whether settlements are reached with utilities, or the courts award damages, if the Nuclear Waste Fund is depleted, construction cannot proceed, damages continue to accrue, and the waste remains at utility sites.[121]

*b. Incomplete or Accelerated Research in Attempts to Speed Up Completion of the Project*

Some have speculated that the *Maine Yankee* and *Northern States III* decisions could lead Congress to accelerate the schedule for nuclear waste storage at the proposed repository at Yucca Mountain.[122] Before these decisions, legislation was proposed that would accelerate the completion of the nuclear waste repository at Yucca Mountain.[123] While Congress approved this bill, President Clinton vetoed it, and the Senate failed to override his veto.[124]

Nuclear industry leaders are urging such accelerated construction.[125] The President of Yankee Power Company, Russell Mellor, has stated that it is not damages that the company seeks in its suit against the DOE, but for the government to be forced to fulfill its contractual and statutory obligations.[126] John Rowe, Chairman of Unicom Corp., similarly suggests that rather than attempting to reach settlement agreements with nuclear power companies, the DOE should focus on achieving a "timely opening of the Yucca Mountain facility."[127]

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[117] *See supra* notes 91-95.

[118] Cook, *supra* note 1 (citing comments made by Ivan Itkin, Director of the DOE Office of Civilian Radioactive Waste Management).

[119] 42 U.S.C. § 10222(a)(4).

[120] *Nuclear Executives Bash DOE on Waste Removal*, ENERGY REP., Oct. 9, 2000, *available at* 2000 WL 8749398 [hereinafter *Nuclear Executives Bash*].

[121] *Utilities Sue*, *supra* note 80 (quoting Brian O'Connell, Director of NARUC: "What is worrisome is that if DOE were to settle with all the others, there would be no revenue coming in and the program grinds to a halt which, of course, extends the period of time for providing credits and no fuel ever gets moved in.").

[122] Batt, *Energy Official Says Liability Overstated*, *supra* note 3.

[123] S. 1287, 106th Cong. (2000).

[124] Cook, *supra* note 1 (the Senate failed to override President Clinton's veto on May 2, 2000 nearly four months before the *Maine Yankee* and *Northern States III* decisions were made on August 31, 2000).

[125] *Id.*

[126] *Id.*

[127] *Id.*

With the DOE currently scheduled to file its license application with the Nuclear Regulatory Commission in late 2004,[128] the repository at Yucca Mountain will not be completed and ready to store waste until at least 2010.[129] Legislation similar to that introduced during the Clinton administration, intended to eliminate hurdles in approving and constructing the Yucca Mountain repository, could be introduced under the Bush administration and would likely be passed by Congress and approved by the President.[130] While few steps are left in the approval process, many technical questions remain. Therefore, such legislation would prove that politics has prevailed over science in the nuclear waste disposal battle.

Studies to assess the feasibility and safety of constructing a permanent repository at Yucca Mountain are ongoing.[131] Scientists have disagreed as to the adequacy of Yucca Mountain as a repository location,[132] and the Government Accounting Office has concluded that the DOE does not have adequate information to determine Yucca Mountain's suitability.[133]

Potential problems with the Nevada location include rock composition, geological faulting, young volcanism, and a complicated ground water sys-

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[128] *Abraham Defends Yucca Mountain In First Hill Hearing on Repository*, NUCLEAR WASTE NEWS, Apr. 18, 2002 (citing comments made by Energy Secretary Spencer Abraham). *But see Words Change, Substance Does Not In Final GAO Yucca Mountain Report*, NUCLEAR WASTE NEWS, Jan. 3, 2002 (citing GAO final report, which concludes that the DOE will be able to resolve all technical issues and submit its application to the Nuclear Regulatory Commission no sooner than 2006).

[129] *Energy Secretary Approves Nev. Site as Nuclear-Waste Repository*, *supra* note 96.

[130] Congress has recently shown favor to nuclear waste as a continued fuel source in the United States. In addition to Congress overriding Nevada's veto of the President's recommendation of Yucca Mountain as the nation's permanent waste repository (*see supra* note 94), the House of Representatives passed a bill encouraging development of nuclear power in August 2001. Gary C. Rryner, *The National Energy Policy: Assessing Energy Policy Choices*, 73 U. COLO. L. REV. 341, 356 (2002). Vice President Cheney has also commented that the nation should increase use of nuclear power and build more nuclear power plants. *Id.* Furthermore, the Bush energy plan proposes that the United States nuclear power industry be expanded. *Id.*

[131] *Abraham Sees Suitability Decision As Yucca Mountain Priority One*, NUCLEAR WASTE NEWS, Nov. 15, 2001 (citing comments of Energy Secretary Spencer Abraham).

[132] Many scientists, primarily outside of government agencies, have asserted that the government's studies that claim to show Yucca Mountain is an adequate site have been both biased and scientifically inaccurate. *See* William J. Broad, *A Mountain of Trouble*, N.Y. TIMES, Nov. 18, 1990, § 6, at 37. *See also* Robert R. Loux, *Nuclear Waste: Will the Nation's Nuclear Waste Policy Succeed at Yucca Mountain?*, 126 PUB. UTIL. FORT. 27, 52 (1990). Government officials, however, assert that their testing has been sufficient. Ivan Itkin, Director of the DOE Office of Civilian Radioactive Waste Management, claims that they have "conduct[ed] a world-class scientific and technical program at Yucca Mountain." The DOE is making efforts to develop a more complete three-dimensional model of the geological formations of the site to better enable them to predict repository performance. Additionally, he says that they are currently conducting the "largest thermal test of a geologic formation in the world." Itkin Testimony, *supra* note 5.

[133] *GAO Report Casts Doubt on Yucca Mt.*, 7 ENVTL. COMPLIANCE & LITIG. STRATEGY 1 (Dec. 2001) (The draft report issued on November 30, 2001 criticized the DOE's intention to recommend Yucca Mountain as a repository site in light of the inadequacy of information regarding the suitability of the location.); *Energy Secretary Approves Nev. Site as Nuclear-Waste Repository*, *supra* note 96 (The final GAO report, issued in December 2001, recommended that siting decision be postponed until all technical issues are resolved.).

tem.[134] Each of these problems alone is sufficient to disqualify the site under

[134] One of the initial reasons why Yucca Mountain was extremely appealing as a repository site was the low water table, which would enable to DOE to locate the repository one thousand feet below the earth's surface but hundreds of feet above the water table. Several scientists argue, however, that there is evidence that the water will rise to the level of the repository, causing serious problems. Jerry S. Szymanski, a former geologist on the Yucca Mountain Project for the DOE, is a proponent of this theory, arguing that water will seep into fractures and faults. If an earthquake occurs, Szymanski believes that the water will be thrust up to the level of the repository, vaporize due to the heat of the canisters, and potentially cause an explosion, releasing radioactivity. He points to the existence at Yucca Mountain of tavertine, a type of rock formed in the presence of water over long periods of time, often as a result of fault lines, in support of his theory. Charles B. Archambeau, a University of Colorado geophysicist, has found Szymanski's study persuasive. He has been quoted as saying:

> You flood that thing and you could blow the top off the mountain. At the very least, the radioactive material would go into the ground water and spread to Death Valley, where there are hot springs all over the place, constantly bringing water up from great depths. It would be picked up by the birds, the animals, the plant life. It would start creeping out of Death Valley. You couldn't stop it. That's the nightmare. It could slowly spread to the whole biosphere. If you want to envision the end of the world, that's it.

Broad, *supra* note 132, at 37.

Several other independent scientists have toured the site with Szymanski, each supporting his views. Broad, *supra* note 132, at 37. *See also* Betsy Carpenter, *A Nuclear Graveyard*, U.S. NEWS AND WORLD REP., Mar. 18, 1991, at 72; William Poole, *Gambling with Tomorrow: Yucca Mountain Nuclear Waste Depository*, SIERRA, Sept. 1992, at 50, 56 (both articles supporting theory that area earthquakes could cause rock fracturing, resulting in flooding of the repository and rapid contamination of the water table). The activity of the thirty-two geological fault lines under Yucca Mountain has been demonstrated more than once in recent years. Eight years ago, in June 1992, an earthquake measuring 5.6 on the Richter scale was centered under the site. This earthquake caused approximately $1 million of damage to a DOE building. Tom Abate, *Quake Shakes Up Debate Over Nuclear Dump: Recent 5.6 Temblor in Nevada Bolsters Backers and Critics*, S.F. EXAMINER, July 23, 1992, at A5, 1992 WL 7587983. More recently, on February 3, 2001, the Las Vegas Valley experienced an earthquake measuring 3.5 on the Richter scale. Keith Rogers, *EARTHQUAKE POTENTIAL: Nevada Ranks Fifth in Risk Based on Losses*, LAS VEGAS REV.-J., Feb. 24, 2001, at 4B. These earthquakes are minor compared to those that could potentially result in the area – which estimates indicate could be as strong as 6.8 on the Richter scale. *Id.* In fact, Nevada ranks third in the nation for frequency of strong earthquakes. *Id.*

The National Academy of Sciences argues that tuff, a volcanic rock at the surface of Yucca Mountain, is an ideal medium for containing the repository as it is extremely thick, stable, and dry. Allen, *supra* note 1. Others argue, on the contrary, that the basalt and tuff medium do not allow for sufficient natural sealing of fractures and boreholes. ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT [OECD], GEOLOGICAL DISPOSAL OF RADIOACTIVE WASTE: GEOCHEMICAL PROCESSES 17-19 (1982). Nearby volcanoes also give rise to concern. These volcanoes are thought to have been active as recently as 20,000 years ago. *See* Allen, *supra* note 1. Estimates of the likelihood of active volcanic activity in the region over the next 10,000-year range from government figures of one-in-thirty to Nuclear Regulatory Commission estimates of one-in-six. Robert Burns, *Watkins Urged to Declare Nevada Site Unsuitable for Nuclear Waste*, ASSOCIATED PRESS, July 19, 1989, 1989 WL 4046972.

Moid Ahmad, a hydrologist at Ohio State University, also argues that hydrological studies of Yucca Mountain are deficient. Ahmad believes that, by burying nuclear waste at Yucca Mountain, the ground water of the region will become unusable as the climate becomes wetter, causing the water table to rise. *Nuclear Waste Plan Called a Danger to Future Groundwater*, ARIZ. REPUBLIC, Mar. 23, 1994, at B3, 1994 WL 6322811. Evidence, including ancient snail shells, indicates that the region was once under water. Allen, *supra*

site screening guidelines.[135] Despite scientific doubt regarding the Yucca Mountain site, the DOE has stated that the problems with the location are political rather than scientific, and that it is "inconceivable" that the site is an inadequate location for the nuclear repository.[136] With this arrogance, the DOE pushes the project forward; ignoring, de-emphasizing, and making excuses for negative results that arise.[137]

### c. *Temporary Storage Prior to Completion of Research*

One way to prevent additional damages from accruing would be through the development of a temporary storage facility to be used until a permanent repository is completed.[138] This alternative has substantial support,[139] but also has several drawbacks that have prevented its implementation. For example, opening an interim storage facility would initiate the DOE's duty to take title to the waste and could result in additional transportation issues.[140] This option

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note 1. Scientists also foresee water percolating through the ground and into the repository, causing the storage containers to rust, and radioactive material to enter the water table. Charles Rousseaux, *What Yucca Offers . . . for 10,000 Years Series: Last of Two Parts*, WASH. TIMES, June 7, 2001, at A17. It has been estimated that nuclear particles could reach the water table in less than one thousand years. K.S. Shrader-Frechette, BURYING UNCERTAINTY: RISK AND THE CASE AGAINST GEOLOGICAL DISPOSAL OF NUCLEAR WASTE 41 (1993). *See generally* Davenport, *supra* note 33, at 555.

[135] John Boehner, LEGISLATIVE DIGEST CONGRESSIONAL PRESS RELEASES, Dec. 18, 1995, LEXIS, News Library, Hillpr File.

[136] Loux, *supra* note 132, at 51-52. *See also* Allen, *supra* note 1 (quoting Carl Gertz, DOE's Yucca Mountain Project Manager, as having said in 1988 that "[w]e're 99 percent sure – well, make that 95 percent – that Yucca Mountain will meet the regulatory requirements."); Itkin Testimony, *supra* note 5 ("A Presidential decision to develop a repository must be based on sound science."). *But see Congress House Approves H.R. 1270 with Veto-Proof Margin*, NUCLEAR WASTE NEWS, Nov. 6, 1997, LEXIS, Legnew Library, Energy File (quoting Rep. Edward Markey (D-Mass) "[w]e don't know if Yucca is right. Congress picked it, not geologists, not scientists."); Boehner, *supra* note 135.

[137] One example of the DOE explaining away scientific problems became apparent when Syzmanski went to his superiors with evidence that travertine was formed at Yucca Mountain as geological activity pushed water, along with calcium deposits, from deep within the earth up to levels near the surface. His superiors – who were bureaucrats, not scientists – turned to the Geological Survey, whose scientists explained that the rock was actually pedogenic, formed from calcium in rain drops depositing in the area over millions of years. The DOE attempted to prove that the deposit was superficial, forming from above rather than below, by removing layers of earth with a bulldozer. The veins of calcium instead continued deep within the earth. Although core rock samples show that the calcium deposits extend at least hundreds of yards, and the elements in the deposits show that the water that formed the deposits was warm, evidence that they were not formed from cool rain water, the DOE continues to deny Szymanski's claims. At first, Geological Survey scientists went so far as to say that Szymanski's report was "deceitful" and was filled with "violations of scientific evidence." These scientists now contend that while some of the deposits could have been formed from ground water, they are too old to remain significant and that only lower levels were created from groundwater while upper levels were created by rainfall. Broad, *supra* note 132.

[138] *See generally Governors Push*, *supra* note 1; Cook, *supra* note 1; Thomas Testimony, *supra* note 60; *Nuclear Executives Bash*, *supra* note 120.

[139] *See infra* notes 141-46.

[140] Amy L. Sypula, *Beyond Yucca Mountain: Split Liability Drives Action for Interim Nuclear Waste Storage*, 6 U. CHI. L. SCH. ROUNDTABLE 251, 277 (1999).

would also result in additional costs, as the NWPA prohibits the siting of an interim repository in the same state as the permanent repository.[141]

Connecticut Governor John Rowland, Massachusetts Governor Argeo Paul Cellucci, and Maine Governor Angus S. King, Jr. are among the supporters of this plan.[142] These governors argue that removal of waste from decommissioned nuclear power plants within their states must begin immediately, so these lands can be put to financially beneficial use.[143] Additionally, they feel the Nuclear Waste Fund should be dedicated to removal of waste rather than paying damages to manage waste on site.[144]

Nuclear power industry leaders have also acknowledged the benefits of this solution as an alternative to lengthy litigation.[145] A temporary repository better addresses the desire of the utilities to have waste removed from their sites than does litigation, which merely awards them damages for keeping the waste on-site.[146] Several members of Congress have also advanced this alternative.[147]

### *d. Decreased Federal Funding to State and Affected Counties*

Under the NWPA, Nevada and local governments affected by the repository are entitled to receive federal funding, derived from the Nuclear Waste Fund, for the purpose of conducting site characterization activities.[148] While these funds were provided annually between 1989 and 1995, the DOE 1996 fiscal year budget did not include such oversight funds for the state.[149] When Nevada challenged Congress's failure to allocate the state oversight funds for 1996, the Ninth Circuit found that, while the DOE was required to provide Nevada with adequate oversight funds, the DOE need not make the appropriations on an annual basis.[150]

The Ninth Circuit decision allows Congress discretion in allocating funds to affected state and local governments in the future.[151] The likely result will be a reduction in funding as damage awards deplete the Nuclear Waste Fund. At the same time that federal funding will be reduced, state oversight costs will not change, placing an unfair burden on Nevada state and local governments.

Although the federal government has acknowledged the State of Nevada's interest in this process by providing for Nevada's participation in the characterization process,[152] the burden of this process is being placed on the citizens of Nevada, a state that does not even have a nuclear power plant. In passing the NWPA, Congress saw the need for state and local governments to oversee and

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141 42 U.S.C. § 10155.

142 *Governors Push*, *supra* note 1.

143 *Id.*

144 *Id.*

145 *Id.*

146 *See* Cook, *supra* note 1; Thomas Testimony, *supra* note 60 (money damages will not solve the problem as the waste will remain at the utility).

147 *Nuclear Executives Bash*, *supra* note 120.

148 *See* 42 U.S.C. §§ 10136(c) and 10131(b)(4).

149 Nevada v. United States Dep't of Energy, 133 F.3d 1201, 1203 (9th Cir. 1998).

150 *Id.* at 1204.

151 *See generally id.*

152 42 U.S.C. §§ 10135-36.

participate in the process, and specified that the Nuclear Waste Fund would supply necessary funding.[153] The NWPA places the burdens of oversight on those who produce and use the waste.[154] Congress's actions, and the Court's decisions, have shifted this burden from those who produce the waste to those who did not create it and want nothing to do with it, but must protect themselves from its potential dangers.

### 4. *Insufficiency of Yucca Mountain*

Even if the Yucca Mountain facility is completed in a timely manner, the nuclear power industry and DOE's battles are not likely to end. Yucca Mountain is planned to hold only 70,000 metric tons of waste, far less than the 87,000 metric tons scheduled for disposal by 2030.[155]

## IV. CONCLUSION

Although the nuclear power industry is suffering damages based on the DOE's failure to remove waste from power plants by the statutory and contractual deadline, no one benefits from the resulting litigation. Rather than fighting for damages that would reduce the Nuclear Waste Fund, or arguing for speedy but unsafe and unscientific waste disposal, the industry should join the DOE in determining the viability of the Yucca Mountain repository. If the attorneys' fees and costs from the litigation were instead used for independent scientific studies of Yucca Mountain – without political agendas – the process would move forward in a cautious yet expedited manner.

No one benefits from a wrong decision when it comes to nuclear waste. The results of contamination are both long lasting and extremely dangerous.[156] If the government and nuclear industry push the Yucca Mountain project forward, without serious consideration of scientific studies, life as we know it

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[153] *See* 42 U.S.C. § 10136(c) (enabling the Secretary to make grants from the Nuclear Waste Fund to Nevada and affected local governments for use in oversight and participation in the characterization process).

[154] 42 U.S.C. § 10131.

[155] Christopher Smith, *Troublesome Trash*, SALT LAKE TRIB., Sept. 1, 1996, at A1, 1996 WL 3044304.

[156] A very small amount of nuclear waste can be disastrous. If an amount of plutonium about the same size as a beach ball was properly dispersed, it could cause lung cancer in everyone on earth. R. Routley & V. Routley, *Nuclear Energy and Obligations to the Future*, 21 INQUIRY 133, 136 (1978). *See generally* Robin Dusek, *Lost in Space?: The Legal Feasibility of Nuclear Waste Disposal in Outer Space*, 22 WM. & MARY ENVTL. L. & POL'Y REV. 181 (1997). Some estimate that a large release of nuclear waste from Yucca Mountain, which has a capacity to hold 77,000 metric tons of waste, would exceed the environmental impact of a nuclear war. This is a huge amount of waste compared to the "few dozen pounds" of waste released in the Chernobyl explosion that is estimated will result in between 17,000 to 475,000 human deaths from cancer. Broad, *supra* note 132. Each of the spent fuel assemblies that will be stored in the repository contains a similar amount of radioactivity as ten Hiroshima bombs. Lazarus, *supra* note 1 (citing Klaus Schumann, a Green Party activist and member of the San Luis Obispo County Nuclear Waste Management Committee).

could end in the western United States, with wide-spread contamination causing devastating effects on humans and their environment. While considerable money has been invested in studying the adequacy of the Yucca Mountain site, it does not begin to compare to the costs of ignoring scientific truth in favor of political power.