TOWN MEETING AS THE NUCLEAR OPTION: HOW VERMONT'S DEMOCRATIC VALUES CAN INFORM THE NUCLEAR WASTE POLICY IMPASSE

Emily Davis*

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* Emily Davis graduated from Vermont Law School in 2023. She also holds a Bachelor's of Science in Environmental GeoChemistry and a Master's of Science in Ecological Design. She served on the Vermont Yankee Nuclear Decommissioning Citizens Advisory Panel; her commitment to that service and love of good public process inspired this Note. The views represented here do not reflect those of the Vermont Yankee Nuclear Decommissioning Citizens Advisory Panel. Emily wishes to thank Professor Gregory Johnson for his diligent support throughout the writing process.

INTRODUCTION

Remnant pieces of a former nuclear power plant linger along the Connecticut River in the small town of Vernon, Vermont.[1] Industrial machinery dismantles the once-controversial Vermont Yankee Nuclear Power Plant that produced about one-third of the state's electricity for 40 years.[2] Railroad tracks from the plant meander around dairy farms and maple trees,[3] and shipments containing old reactor parts, office building interiors, and massive turbines roll south to an industrial disposal facility in west Texas.[4] Since its beginning in 2016, the decommissioning process is largely going as planned.[5] However, an important detail remains: Where does the spent nuclear fuel go?

Spent nuclear fuel—the leftover fuel from nuclear power reactors after producing electricity—has no permanent home in this country.[6] But this is not for a lack of trying. Enacted in 1982, the Nuclear Waste Policy Act obligated the federal government to locate a disposal site for nuclear waste.[7] But for many decades, the federal government never identified a site.[8] Several factors contributed to the problem, but there is one major and overlooked cause: From the very beginning, the American public never had

1. *See, e.g.*, RICHARD A. WATTS, PUBLIC MELTDOWN: THE STORY OF THE VERMONT YANKEE NUCLEAR POWER PLANT 2 (2012).

2. *Id.*

3. *See generally* TOWN OF VERNON, VT., TOWN PLAN VERNON, VT. 37 (2018) ("Vernon owes much of its present character to the continued use of large land areas for agricultural production associated with dairy. . . . After forestland, the major land use in the town of Vernon is agriculture.").

4. *See, e.g.*, Mike Faher, *Vermont Yankee Cleanup Partner Stops Work on Nuclear Dump*, VTDIGGER (Apr. 26, 2017) https://vtdigger.org/2017/04/26/vermont-yankee-cleanup-partner-stops-work-nuclear-dump/ ("That site is part of what's known as the Texas Compact, a multistate arrangement ensuring a place to get rid of Vermont's low-level radioactive waste. Vermont Yankee sent its first shipment of low-level waste to Waste Control Specialists' Texas facility in 2012.").

5. *See, e.g.*, *Decommissioning Facts*, NORTHSTAR, https://vydecommissioning.com/decommissioning-facts/ (last visited Apr. 19, 2023).

6. *See infra* notes 178–90 and accompanying text.

7. *See infra* notes 110–22 and accompanying text.

8. *See infra* notes 133–43 and accompanying text.

the opportunity to meaningfully participate in creating a nuclear waste policy.[9] This created distrust, resentment, and top-down policy solutions.[10]

Now, the Nation stands at an impasse; there are no long-term disposal sites, the Nation disagrees about short-term storage sites, and we have no effective legal mechanisms to make meaningful progress. As a result, at least 86,000 metric tons of spent fuel temporarily reside at 75 separate sites in 33 states.[11]

The former Vermont Yankee Nuclear Power Plant in Vernon, Vermont is one of those sites.[12] Currently, 42 years' worth of spent fuel remains in large concrete storage containers along the Connecticut River.[13] But Vermonters never agreed to host this waste, and Vernon wants to redevelop the site as soon as possible.[14] While the policy impasse affects Vermont, the State is not alone. Nationally, congressional lawmakers working on the problem agree that this "status quo cannot be accepted."[15] The Nation urgently needs a new strategy to break through the policy impasse wall.

But cracks may be forming. On December 1, 2021, the Biden Administration's Department of Energy (DOE) announced that it will pursue

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9. *See generally* STANFORD UNIV., CTR. FOR INT'L SEC. AND COOP., RESET OF AMERICA'S NUCLEAR WASTE MANAGEMENT 13 (2018) [hereinafter 2018 Reset Report].

> The program has suffered from a number of factors, including major changes to the original law; a series of amendments to the Nuclear Waste Policy Act of 1982; a slowly developed but changing regulatory framework; erratic funding; significant changes in policy with changing administrations; conflicting Congressional and Executive policies; and finally, and most significantly, inadequate public engagement in decisions about strategies for the storage and disposal of the nuclear waste.-

Id. at 1.

10. *See infra* notes 89–93 and accompanying text.

11. U.S. GOV'T ACCOUNTABILITY OFF., GAO-21-603, COMMERCIAL SPENT NUCLEAR FUEL: CONGRESSIONAL ACTION NEEDED TO BREAK IMPASSE AND DEVELOP A PERMANENT DISPOSAL SOLUTION 1 (2021) [hereinafter 2021 GAO Report].

12. *E.g.*, TOWN OF VERNON, *supra* note 3, at 13 (explaining that Vernon is the host to Vermont Yankee's Independent Spent Fuel Storage Installation (ISFSI) "in the absence of a central storage solution").

13. *See infra* notes 196–97 and accompanying text; *see also* Susan Smallheer, *Staffers See Little Interest or Action on Nuclear Waste Issues*, BRATTLEBORO REFORMER (Aug. 23, 2021), https://www.reformer.com/local-news/staffers-see-little-interest-or-action-on-nuclear-waste-issues/article_6aee6250-043e-11ec-9714-e38d784c3185.html.

14. *See infra* notes 203–06 and accompanying text.

15. *Recommendations From the Blue Ribbon Commission on America's Nuclear Future for a Consent-Based Approach to Siting Nuclear Waste Storage and Management Facilities: Hearing Before the Subcomm. on Clean Air and Nuclear Safety of the S. Comm. on Env't &Pub. Works*, 112th Cong. 9 (2012) [hereinafter BRC Hearing] (statement of Gen. Brent Scrowcroft).

a *consent-based siting process* to identify nuclear waste storage sites.[16] By charting this policy direction, the DOE intends to break the stalemate by adopting a "flexible, adaptive, and responsive" nuclear waste strategy that emphasizes public participation.[17] While the policy announcement is a step in the right direction, it remains inadequate.[18] Brooding mistrust lies at the root of the problem, and the stalemate may continue unless the federal government adopts a truly consent-based process to siting waste disposal facilities.

So, how can the government achieve a consent-based process? Given the broken relationship between the public and the federal government, the technical complexities of nuclear waste siting, and a lack of political will, the problem might seem intractable. However, Vermont itself can inform the solution. Vermont has a tradition of self-governance called *Town Meeting Day*, where citizens gather annually to conduct the official business of the town and consider other important issues.[19] This democratic tradition generates much-needed social capital and ownership over a community's business.[20] So, Vermont's unique flavor of self-governance embodies the fundamental principles of a democratic process necessary to realize true informed consent from a community hosting the Nation's nuclear waste.

This Note demonstrates how Vermont's unique political process—the potluck-style of democratic governance—has an important application beyond the town halls and granges of the Green Mountain State. Accordingly, it attempts to add a different voice to a weary conversation and inform the Nation's emerging consent-based siting policy direction.

Part I of this Note provides a background of the issue and explains how public participation remained an afterthought in nuclear waste law for decades. This Section discusses major laws and policy developments, including the Atomic Energy Act, the Nuclear Waste Policy Act, and the Blue Ribbon Commission's 2012 Report. Part II brings us to the present day and explains how those major laws led to the current ad-hoc system of nuclear waste management. It then describes the most recent efforts towards a consent-based siting process. Part III relates all that material to a theory of

16. *See, e.g.*, *Biden Seeks Willing Hosts for Nuclear Waste Storage Sites*, REUTERS (Nov. 30, 2021), https://www.reuters.com/markets/commodities/biden-renews-hunt-willing-hosts-nuclear-waste-storage-sites-2021-11-30/.

17. *Consent-based Siting*, OFF. OF NUCLEAR ENERGY, DEP'T OF ENERGY, https://www.energy.gov/ne/consent-based-siting (last visited Apr. 19, 2023).

18. *See infra* notes 32–35 and accompanying text (explaining why the policy impasse needs an act of Congress, not agency decision making).

19. VT. STAT. ANN. tit. 17, § 2640(a).

20. *See infra* notes 243–52 and accompanying text (describing the benefits created by Vermont's traditional Town Meeting).

democracy and proposes statutory language that Congress should enact that reimagines how the Nation develops a viable disposal solution. That Part shows how Vermont's democratic tradition can inform and inspire future congressional action.

I. BACKGROUND & HISTORY OF NUCLEAR WASTE POLICY

A. The Origin of the Nuclear Age & the Atomic Energy Act

This big problem has tiny origins. Until relatively recently, humankind realized the enormous power contained within a single atom. Subatomic particles in a single elemental atom are split in a process called *fission*.[21] A fission reaction can create a great deal of energy in the form of heat because so much energy holds those little particles together.[22] Scientists figured out that Uranium-235 is one of the elements that fissions easily.[23]

Despite the common association with flashing buttons and green slime, commercial nuclear power plants generate electricity in a fairly unremarkable way. Like any other steam-electric power plant, nuclear power plants heat water so that steam from the boiling water turns turbines and generates electricity.[24] Accordingly, the main difference among the various types of steam-electric power plants is the heat source.[25]

In 1942, Enrico Fermi and his team of scientists tested a new design for a uranium heat source in Chicago, which they called the *Chicago Pile-1*.[26] They erected this fateful pile, containing fissionable uranium placed within a cube-like stack of graphite, on a squash court floor beneath the University of Chicago's athletic stadium.[27] By the end of that year, Fermi and his team successfully bombarded and split enough uranium atoms to create a nuclear

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21. *E.g.*, U.S. DEP'T OF ENERGY, OFF. OF NUCLEAR ENERGY, SCI. AND TECH., DOE/NE-0088, THE HISTORY OF NUCLEAR ENERGY ii (2002), https://www.energy.gov/sites/prod/files/The%20History%20of%20Nuclear%20Energy_0.pdf [hereinafter History of Nuclear].

22. *Id.*

23. *Id.*

24. *Id.* at iii.

25. *Id.* at iii.

> A series of fissions is called a chain reaction. If enough uranium is brought together under the right conditions, a continuous chain reaction occurs. This is called a self-sustaining chain reaction. A self-sustaining chain reaction creates a great deal of heat, which can be used to help generate electricity. . . . Heat from a self-sustaining chain reaction boils the water in a nuclear powerplant. Coal, oil, or gas is burned in other powerplants to heat the water.

Id. (cleaned up).

26. *Id.* at 6.

27. *Id.*

chain reaction within *Chicago Pile-1*, thereby creating the world's first nuclear reactor.[28] And so, from the squash court floor, "[t]he world had entered the nuclear age."[29]

As a capstone law of the era, the Atomic Energy Act of 1946 (AEA) marked the Nation's entrance into the nuclear age.[30] That Act created an ambitious program that encouraged *civilian* production of nuclear energy for public utilities.[31] Later amended in 1954,[32] the AEA promoted "widespread participation in the development and utilization of atomic energy for peaceful purposes to the maximum extent consistent with the common defense and security and with the health and safety of the public."[33] The AEA enabled the government to control the possession, use, and production of atomic energy, "whether owned by the Government or others."[34] To do so, the AEA also created the Atomic Energy Commission (AEC)—a federal agency with broad delegated authority to manage the development, use and control of nuclear energy for military and civilian purposes.[35] At first blush, it may appear that Congress did its nuclear policy homework when it enacted the AEA. Presumably, lawmakers decided to advance commercial nuclear power development after considering all the risks and benefits of doing so. But the AEA was actually the first kick of the nuclear waste can—it is a "classic example of modern 'non-legislation.'"[36]

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28. *Id.* at 7.

29. *Id.*

30. Congress enacted the AEA following the atomic bombings of Hiroshima and Nagasaki, Japan in 1945, when World War II entered its final phase. *The Manhattan Project: An Interactive History, Civilian Control of Atomic Energy*, U.S. DEPT. OF ENERGY, OFF. OF HIST. AND HERITAGE RES., https://www.osti.gov/opennet/manhattan-project-history/Events/1945-present/civilian_control.htm (last visited Apr. 19, 2023). Legislative debates over the AEA centered around the extent to which the military should control the research and development of nuclear technology. *Id.* Ultimately, the "sometimes bitter debate between those who advocated continued military stewardship of the nation's arsenal and those who saw continued military control as inimical to American traditions ended in victory for civilian authority but with considerable ongoing military influence." *Id.*

31. Until this point, the nuclear industry mainly focused on military weapons development. *See generally* 42 U.S.C. § 2013.

32. The 1954 amendment "grew out of Congress' determination that the national interest would be best served if the Government encouraged the private sector to become involved in the development of atomic energy[.]" Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n, 461 U.S. 190, 207 (1983).

33. 42 U.S.C. § 2013(d).

34. *Id.* § 2013(c).

35. The Atomic Energy Commission (AEC) was the agency predecessor to both the Nuclear Regulatory Commission and the Department of Energy. *See Summary of the Atomic Energy Act*, U.S. EPA, https://www.epa.gov/laws-regulations/summary-atomic-energy-act (last updated Mar. 3, 2023).

36. Richard Goldsmith, *Regulatory Reform and the Revival of Nuclear Power*, 20 HOFSTRA L. REV. 159, 162 (1991).

The Supreme Court considered the AEA in the landmark administrative law case *Vermont Yankee v. NRDC*.[37] In that case, the Natural Resource Defense Council (NRDC) challenged the AEC's rulemaking procedures when the agency issued an operating license to the Vermont Yankee Nuclear Power Plant in Vernon.[38] They argued that the AEC failed to adequately address all environmental impacts of spent fuel management and fuel reprocessing in individual nuclear plant proceedings.[39] Setting an important precedent for judicial deference to agency action, the Court ruled in favor of the AEA and upheld Vermont Yankee's license.[40] The Court also upheld Congress's expansive delegation of rulemaking authority to the AEC to support nuclear energy development.[41] While considering the propriety of the AEC's actions, the Court considered Congress's intent when it passed the AEA.[42] To that point, the Court admitted that:

> Nuclear energy may some day be a cheap, safe source of power or it may not. But Congress has made a choice to at least try nuclear energy . . . . Time may prove wrong the decision to develop nuclear energy, but it is Congress or the States within their appropriate agencies which must eventually make that judgment.[43]

So, Congress's only policy choice was to *try* nuclear energy while *eventually* doing the work of weighing the risks and benefits. But in the 77 years since it enacted the AEA, Congress never completely weighed all the risks and benefits of nuclear power. This helps explain why we have arrived at the current policy stalemate: The federal government brought the Nation into the nuclear age without considering the panoply of risks and benefits of doing so. Unable to decide on the nation's fundamental orientation towards nuclear energy and the nuclear fuel cycle, Congress instead "ducked the [policy] question by delegating the authority to answer it to a federal agency, the AEC."[44]

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37. Vt. Yankee Nuclear Power Corp. v. Nat'l Res. Def. Council, Inc., 435 U.S. 519 (1978).

38. This is the same nuclear power plant that is the subject of this Note. It stopped generating power in 2014, and the private company Northstar is currently decommissioning the power plant. *See infra* notes 191–94 and accompanying text.

39. Specifically, the AEC's rulemaking proceedings were intended to consider environmental effects of the uranium fuel cycle. Vt. Yankee Nuclear Power Corp., 435 U.S. at 528. But those proceedings did not include full formal adjudicatory procedures. *Id.* at 528–29. The NRDC challenged the so-called fuel-cycle rule that resulted, based on the alleged procedural inadequacies. *Id.* at 530.

40. *Id.* at 539.

41. *Id.* at 543–46.

42. *Id.* at 557.

43. *Id.* at 557–58.

44. Goldsmith, *supra* note 36.

However, the AEC did not fully answer the question. In *Vermont Yankee,* the Court reversed the D.C. Circuit Court of Appeals' decision against the AEC.[45] The D.C. Circuit concluded that the agency failed to address all environmental effects and factors "associated with the uranium fuel cycle in the individual cost-benefit analyses" of individual nuclear power reactors.[46] That lower court also determined that when licensing the plant, the AEA did not provide all parties a "genuine opportunit[y] to participate in a meaningful way."[47] In other words, the AEC did not adequately consider all relevant factors of the nuclear fuel cycle, and it did not provide a full opportunity to participate in that rulemaking.

On appeal, the Supreme Court reversed the D.C. Circuit's ruling not because those factual conclusions were incorrect, but rather because "it is improper for a reviewing court to prescribe the procedural format an agency must follow."[48] While *Vermont Yankee*'s holding is in favor of the AEC, it was not because the agency actually considered all policy implications related to nuclear reactor licensing. The agency won because courts cannot prescribe additional administrative procedures beyond statutory minima.[49] This is true even if stakeholders wish to engage more in nuclear policy discussions.[50] And as long as the AEC complies with that statutory minima, a court may not require a more thorough process even if it is "likely to further some vague, undefined public good."[51] This meant that the public had a limited arena on which to debate nuclear energy policy.

But not only did Congress delegate nuclear policy development to deficient agency rulemaking, it also foreclosed discussion in *state* policy arenas that are more accessible to the public.[52] In the AEA, Congress intended that the federal government maintain "complete control of the safety and 'nuclear' aspects of energy generation."[53] The Supreme Court later affirmed that the AEA grants the federal agency "extensive and sometimes exclusive authority to regulate nearly every aspect of the nuclear fuel life

45. Vt. Yankee Nuclear Power Corp., 435 U.S. at 525.

46. *Id.* at 528.

47. *Id.* at 541 (quoting Nat'l. Res. Def. Council, Inc. v. U.S. Nuclear Regul. Comm'n, 547 F.2d 633, 644 (1976)).

48. *Id.* at 541.

49. *Id.* at 546 ("In short, all of this leaves little doubt that Congress intended that the discretion of the *agencies* and not that of the courts be exercised in determining when extra procedural devices should be employed.").

50. *Id.* at 547.

51. *Id.* at 549.

52. Goldsmith, *supra* note 36, at 163.

53. Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n, 461 U.S. 190, 212 (1983).

cycle."[54] Faced with that implied field preemption of nuclear safety issues, state and local governments may not explicitly take action on such matters except in limited circumstances.[55]

Finally, the AEA also removed nuclear policy discussions from its own place of origin: congressional committee rooms. The AEA created the Joint Committee on Atomic Energy, which was charged with studying the activities of the AEC and other "problems relating to the development, use, and control of atomic energy."[56] While the Committee *may* conduct hearings within the first 60-days of a congressional session, there were no formal reporting requirements to lawmakers.[57] So, the AEA also reduced policy debates and studies about nuclear safety from the House and Senate Committees, thereby "limit[ing] the extent to which important issues are subject to Congressional scrutiny."[58]

Overall, the AEA marks the beginning of a troublesome relationship between the federal government, nuclear policy, and the American public. In the early years of the nuclear age, Congress pursued nuclear energy without fully understanding the broad policy implications of doing so. Judicial deference, agency authority, and the AEA's Joint Committee further limited where the Nation may deliberate on nuclear policy.

As the number of commercial nuclear power plants increased after the AEA, nuclear waste management became increasingly problematic—so long as nuclear reactors create energy, they also create radioactive waste.

B. Early Efforts to Manage Nuclear Waste

1. "Turning of swords into plowshares"

Beginning in the mid-1950s, the Nation began using commercial nuclear power to generate commercial electricity under the AEA's widespread

54. Va. Uranium v. Warren, 139 S. Ct. 1894, 1902 (2019).

55. *See infra* notes 82–87 and accompanying text.

56. Atomic Energy Act of 1954, Pub. L. No. 83-703, § 202, 68 Stat. 919, 956 (1954).

> The Joint Committee [conducted] continuing studies of the activities of the Atomic Energy Commission and of problems relating to the development, use, and control of atomic energy. During the first sixty days of each session of the Congress, the Joint Committee shall conduct hearings in either open or executive session for the purpose of receiving information concerning the development, growth, and state of the atomic energy industry.

Id. This chapter of the AEA was later repealed in 1977. *See* Pub. No. 95-110, 91 Stat. 884 (1977).

57. Atomic Energy Act of 1954 § 202.

58. Goldsmith, *supra* note 36, at 164 n.14 (quoting HAROLD P. GREEN & ALAN ROSENTHAL, GOVERNMENT OF THE ATOM 271 (1963)).

civilian program.[59] The Supreme Court called this change a "turning of swords into plowshares," wherein private industry became increasingly involved in the design and development of nuclear power.[60] Accordingly, the nuclear industry grew rapidly in the 1960s as utility companies saw this powerful new form of energy as economically beneficial, environmentally clean, and relatively safe.[61] But by the 1970s and 1980s, growth slowed in light of mounting concerns over the safety and environmental impacts of nuclear reactors and the waste they generate.[62]

What exactly is nuclear waste? In a nuclear reactor, the fission reaction splits the uranium atom in a *fuel assembly* to create the desired heat and energy.[63] To make those fuel assemblies, thumbnail-sized ceramic pellets enriched with uranium dioxide are placed in 12- to 15-foot hollow metal rods.[64] Those rods are bound together to form a larger fuel assembly.[65] The fission reaction occurring within the assemblies also creates radioactivity in the form of radioisotopes, or split and unstable atomic configurations.[66] The radioisotopes remain in the fuel assembly after the nuclear reaction consumes the uranium fuel.[67] Radioactivity eventually deteriorates once those unstable radioisotopes decay, but this can take many thousands of years.[68] Until then, the spent nuclear fuel—those hot radioactive bundles of rods full of ceramic pellets—remains highly hazardous.[69]

The nuclear power industry designed and constructed commercial plants to *temporarily* store some of the spent fuel they generate because those hot fuel assemblies must cool off before shipment and disposal.[70] Notably, the

59. 2021 GAO Report, *supra* note 11, at 52.

60. *Pac. Gas & Elec. Co*., 461 U.S. 190, 193 (1983).

61. History of Nuclear, *supra* note 21, at 9.

62. *Id.*

63. *See supra* notes 21–29 and accompanying text (describing the fission reaction and how it generates energy).

64. *E.g.*, 2021 GAO Report, *supra* note 11, at 6.

65. *Id.*; *see also* BLUE RIBBON COMM'N ON AMERICA'S NUCLEAR FUTURE, *Report to the Sec'y of Energy*, 10 (2012), https://www.energy.gov/sites/default/files/2013/04/f0/brc_finalreport_jan2012.pdf [hereinafter BRC Report].

66. *E.g.*, 2021 GAO Report, *supra* note 11, at 6.

67. *Id.*

68. *Id.*

69. *Id.*

70. A typical commercial nuclear power reactor in the United States can contain between 200 to 500 fuel assemblies. *Id.* at 6, 10. The spent fuel is initially stored immersed in pools of water designed to cool and isolate it from the environment. *Id.* at 8. Generally, waste mangers store the spent nuclear fuel in these pools "for at least 5 years or until the fuel has cooled enough to transfer to dry cask storage." *Id*. at 8; *see also* U.S. NUCLEAR REGUL. COMM'N., *What is Spent Nuclear Fuel?*, https://www.nrc.gov/reading-rm/basic-ref/students/science-101/what-is-an-spent-fuel.html (last updated Mar. 19, 2020).

plants are not specifically designed or constructed for long-term waste storage.[71] Until permanent disposal—and while the spent fuel is stored on site—plant operators must actively monitor and manage the fuel assemblies to prevent radioactive contamination.[72] So for now, radioactive spent fuel remains stranded in *interim* storage at nuclear power plants throughout the country since the beginning of commercial nuclear energy production.[73]

The AEC began identifying spent fuel disposal solutions in the 1940s.[74] In 1957, the National Academy of Sciences identified *geologic repository*[75] as the safest disposal method.[76] In 1970, the AEC officially announced that it would explore using an abandoned salt mine in Lyons, Kansas as the Nation's first potential disposal site.[77] But within a year, significant public opposition and a number of technical problems related to the site geology emerged.[78] By 1972, the AEC abandoned the project and announced that it would seek alternative sites for long-term disposal. That search continued throughout the decade.

2. State Efforts to Manage the Waste

Meanwhile, frustrated and concerned states began to exercise their own authority to regulate and manage the nuclear fuel cycle, despite the Court's deferential holding in *Vermont Yankee*. In California, the matter rose to the Supreme Court once again in *Pacific Gas & Electric Co. v. State Energy*

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71. *See, e.g.*, BRC Hearing, *supra* note 15, at 2 (statement of Hon. Thomas R. Carper).

> [T]he technology we have to store spent nuclear fuel, called dry cask storage, can be safe for another 50 to as many as 100 years, perhaps even longer. However, our nuclear reactors were not designed to keep the spent fuel onsite forever. And as our reactors age and are decommissioned, we must find an alternate resting place for our nuclear spent fuel.

Id.

72. *E.g.*, 2021 GAO Report, *supra* note 11, at 6.

73. *See supra* notes 15–16 and accompanying text.

74. BRC Report, *supra* note 65, at 19.

75. As later defined in the Nuclear Waste Policy Act of 1982, a "repository" is:

> [A]ny system licensed by the Commission that is intended to be used for, or may be used for, the permanent deep geologic disposal of high-level radioactive waste and spent nuclear fuel, whether or not such system is designed to permit the recovery, for a limited period during initial operation, of any materials placed in such system. Such term includes both surface and subsurface areas at which high-level radioactive waste and spent nuclear fuel handling activities are conducted.

Nuclear Waste Policy Act of 1982, Pub. L. No. 97-425, 96 Stat. 2204, Sec. 2(18) (codified as amended at 42 U.S.C. § 10131).

76. *E.g.*, 2021 GAO Report, *supra* note 11, at 52.

77. BRC Report, *supra* note 65, at 20.

78. *Id.*

Resources Conservation & Development Commission.[79] In 1974, California passed a law imposing a moratorium on new nuclear plants until the federal government identified and approved "a demonstrated technology or means for the disposal of high-level nuclear waste."[80] A commercial electric utility company then sued the state, arguing that it had no such authority under the AEA to regulate the nuclear field.[81] The case is typically cited for its discussion of federalism and preemption, but the opinion underscores the gravity of the spent fuel problem.[82] The Court sympathized with California's predicament, noting "[i]n recent years, the problem has taken on special urgency. Some 8,000 metric tons of spent nuclear fuel have already accumulated, and it is projected that by the year 2000 there will be some 72,000 metric tons of spent fuel."[83]

Ruling in favor of California, the Court held that, despite federal preemption of nuclear safety issues, the AEA "left sufficient authority in the states to allow the development of nuclear power to be slowed or even stopped for economic reasons."[84] Here, California's law was not preempted because the State was operating within its traditional police power to make threshold decisions about public utilities and the kinds of energy used.[85] While explaining the contours of federal and state authority, the Court further identified the policy-making shortcomings of the agency: "While the [Nuclear Regulatory Commission (NRC)] does evaluate the dangers of generating nuclear power, it does not balance those dangers against the risks,

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79. 461 U.S. 190 (1983).

80. *Id.* at 198.

81. *Id.*

> In 1978, petitioners Pacific Gas and Electric Company & Southern California Edison Company filed this action in the United States District Court, requesting a declaration that numerous provisions of the Warren-Alquist Act, including the two sections challenged here, are invalid under the Supremacy Clause because they are preempted by the Atomic Energy Act.

Id.

82. That Court held that,

> Congress, in passing the 1954 [Atomic Energy] Act and in subsequently amending it, intended that the Federal Government should regulate the radiological safety aspects involved in the construction and operation of a nuclear plant, but that the States retain their traditional responsibility in the field of regulating electrical utilities for determining questions of need, reliability, cost, and other related state concerns.

Id. at 205.

83. *Id.* at 195.

84. *Id.* at 223.

85. *Id.* at 225.

costs, and benefits of other choices available to the State or consider the State's standards of public convenience and necessity."[86]

This is an important statement. The Court is observing that the NRC is not considering the totality of the policy considerations related to nuclear energy—considerations that are imperative to a state's obligation to provide for the health, safety, and general welfare of its citizenry. The Court in turn acknowledged that states should not be "forced to ignore the undeniable fact that nuclear power entails certain risks."[87] Because the spent fuel is still accumulating, these risks remain.[88]

Soon after California passed the moratorium, Vermont enacted a similar law in 1975.[89] Like other comparable state laws, the Vermont moratorium gives its legislature an opportunity to deny a proposed nuclear power plant in the State.[90] Governor Salmon explained that he signed the bill into law because of "overwhelming" public pressure.[91] Representing the citizenry, state lawmakers passed the law out of "total frustration" and "distrust of government" related to nuclear issues.[92] Governor Salmon defended Vermont's action against nuclear power, citing the "Federal Government's inability to develop a national energy policy with adequate citizen input . . . ."[93]

3. Early Federal Responses

Hearing those concerns, the federal government attempted to identify a suitable long-term disposal option in the late 1970s—a dizzying time for energy policy in the United States. In 1978, the Department of Energy (DOE) began examining the now-infamous Yucca Mountain location as a geologic

86. *Id.*

87. *Id.* at 225.

88. *See infra* notes 99–101 and accompanying text (describing the current ad-hoc system of nuclear waste management and the attendant concerns).

89. *See, e.g.*, THE ENERGY POLICY PROJECT, THE NAT'L CONFERENCE OF STATES LEGISLATURES, ENERGY: THE STATES' RESPONSE, ENERGY LEGISLATION JANUARY – JULY 1975 (1975) (highlighting Vermont's H. 127 of 1975, which provided that, before a proposed nuclear plant can obtain a certificate of public good for construction, the project must secure "the approval of the general assembly and the assembly's determination that the construction of the proposed facility will promote the general welfare").

90. *See* VT. STAT. ANN. tit. 30, § 248.

91. *Salmon's Nuke Decision Hailed*, BENNINGTON BANNER (Apr. 4, 1975), https://newspaperarchive.com/bennington-banner-apr-04-1975-p-14/.

92. *Id.*

93. Gov. Thomas P. Salmon, *Letter to the Editor, National Energy Policy: New England's Case*, N.Y. TIMES (Mar. 7, 1975), https://timesmachine.nytimes.com/timesmachine/1975/03/07/76538482.html?pageNumber=34.

repository.[94] But in 1979, a partial meltdown of the nuclear reactor at the Three Mile Island commercial plant did little to ease the nerves of an energy-anxious nation.[95] The accident reactivated public alarm over nuclear power and spent fuel storage.[96] Plus, the Nation also grappled with an energy crisis and escalating threats of nuclear warfare.[97] In response, the federal government exercised strong ownership over many aspects of energy policy with a flurry of federal action aimed at energy infrastructure, security, and conservation.[98]

Also 1979, an Interagency Review Group (IRG) on Nuclear Waste Management sent a memo to President Carter that "address[ed] this very complex social, technical and political problem."[99] The IRG identified two main nuclear waste problems facing the federal government: "(1) minimizing any present hazards due to the storage of radioactive wastes and (2) providing safe and environmentally acceptable isolation of the longest lived wastes for

94. 2021 GAO Report, *supra* note 11, at 52.

95. *See, e.g.*, U.S. NUCLEAR REGUL. COMM'N., *Backgrounder on the Three Mile Island Accident*, https://www.nrc.gov/reading-rm/doc-collections/fact-sheets/3mile-isle.html (last updated Nov. 21, 2022).

96. At the time, the accident seemed "destined to threaten . . . the future of nuclear power itself—an accident that would generate a week of doomsday fear, panicky flight, conflicting statements, noisy demonstrations and intense confusion." B. Drummond Ayres, Jr., *Three Mile Island: Notes From a Nightmare*, N.Y. TIMES (Apr. 16, 1979), https://www.nytimes.com/1979/04/16/archives/three-mile-island-notes-from-a-nightmare-three-mile-island-a.html. By the end of the decade, "[s]o widespread is public concern about the lack of a solution that it has become a major barrier, three decades into the nuclear age, to the continued development of nuclear power in the United States." David Burnham, *Growing Waste Problem Threatens Nuclear Future*, N.Y. TIMES (July 9, 1979), https://www.nytimes.com/1979/07/09/archives/growing-waste-problem-threatens-nuclear-future-increasing-problem.html. Senator Gary Hart, chairman of the Nuclear Regulation Subcommittee, said that "[i]f the word 'scandal' can be attached to nuclear power, it is that this industry has been permitted to expand for two and a half decades without an acceptable solution for waste disposal." *Id.*

97. This Note does not attempt to unpack the complexity of these crises, but this chapter in history merits more than a meager footnote. *See generally* William M. Wiecek, *America in the Post-War Years: Transition and Transformation*, 50 SYRACUSE L. REV. 1203, 1205 (2000) (explaining how the Cold War and the nuclear arms race changed the fundamental functioning of our nation's institutions).

98. For instance, in 1975, President Ford signed the Energy Policy and Conservation Act in 1975, which controlled the price of oil, mandated car fuel efficiency standards, and created a strategic petroleum reserve. OFF. OF LEGACY MGMT., U.S. DEP'T OF ENERGY, *Timeline of Events: 1971 to 1980*, https://www.energy.gov/lm/doe-history/doe-history-timeline/timeline-events-1971-1980 (last visited Apr. 14, 2023) [hereinafter DOE Timeline]. In 1977, President Carter announced National Energy Plan, calling for the establishment of an energy department. *Id.* This would later become the Department of Energy. In 1978, President Carter signed the sweeping National Energy Act, which included the National Energy Conservation Policy Act, the Power Plant and Industrial Fuel Use Act, the Public Utilities Regulatory Policy Act, the Energy Tax Act, and the Natural Gas Policy Act. *Id.*

99. INTERAGENCY REV. GRP., *Background Notebook on Nuclear Waste Management and Interagency Review Group (IRG) Findings*, Tab A at 1 (Sept. 5, 1979) (memo for President Carter), https://www.jimmycarterlibrary.gov/digital_library/sso/148878/130/SSO_148878_130_01.pdf [hereinafter IRG Memo].

hundreds to thousands of years."[100] While exploring policy solutions to those problems, the IRG's Memo to President Carter planted important seeds that would inform future nuclear waste legislation.

First, the IRG Memo identified and prioritized geologic repository as the Nation's preferred disposal method.[101] This came after the industry and regulators examined other methods, including "deep seabed emplacement," to the conceptually attractive "literally launching spent fuel rods into space in the direction of the sun."[102] But while the Memo identified geologic repository as the most feasible front-runner, the policy recommendations did not foreclose other disposal options.

The IRG Memo also identified the main roadblock on the path to a disposal solution: local, state, and federal cooperation.[103] The IRG discarded "major technical questions" as the primary challenge, and instead noted that "the most difficult aspects of the waste management problem are largely *institutional* in nature."[104] The Memo cautioned that "successful waste disposal will not be achieved unless the concerns of a multitude of individuals, agencies and organizations at the local, State and Federal levels are addressed . . . ."[105] So, to make real progress on siting a repository, the IRG recommended that the Carter Administration develop a framework for state and federal cooperation.[106] The Memo proposed a comprehensive but tangled suite of procedures to promote local, state, and federal cooperation.[107]

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100. *Id.*

101. *Id.* at Tab E at 1.

> After having examined the status of knowledge relevant to disposal in mine repositories and by such other technical options as placement in deep ocean sediments, placement in very deep holes, placement in a mined cavity in a manner that leads to rock melting, partitioning of reprocessing waste and transmutation of transuranic elements, and ejection into space, we conclude that near-term program activities should be predicated on the tentative assumption made for interim planning purposes that the first disposal facilities will be mined repositories.

Id.

102. Mark E. Rosen, *Nevada v. Watkins: Who Gets the Shaft?* 10 VA. ENVT'L. L.J. 239, 241 (1991); U.S. OFF. OF TECHNOLOGY ASSESSMENT, OTA-O-171, MANAGING THE NATION'S COMMERCIAL HIGH-LEVEL RADIOACTIVE WASTE, 52–53 (John Burns & Kathryn Van Wyk eds., 1985).

103. IRG Memo, *supra* note 99, at Tab A at 3.

104. *Id.* (emphasis added).

105. *Id.*

106. *Id.*

107. For example, to address the "need to implement an overall framework for interagency coordination to assist DOE in its lead agency responsibilities" the IRG recommends:

> A comprehensive nuclear waste management plan for each type of radioactive waste. This would include multi-year plans for programs, budgets and regulatory review, with biannual updates. These plans would be coordinated among the agencies with waste management responsibilities, and would incorporate comments from the public and the State Planning Council. These plans would have

Relatedly, the IRG Memo then identified—as its first strategic element—that "[t]he approach to permanent disposal of nuclear waste should proceed on a stepwise basis . . . ."[108] The IRG doubled-down on this policy recommendation and stressed that "[t]he IRG wishes to reiterate in the strongest possible way its commitment to the *careful* application of . . . *stepwise decision-making processes*."[109] After observing decades of early efforts to manage nuclear waste, industry experts and policy advisors underlined the importance of meaningful stakeholder participation and incremental decision-making. As the Nation still grapples with the policy impasse, these original IRG recommendations remain relevant.

Overall, the 1970s presented a dizzying array of policy problems for Congress—a global energy crisis, growing public concern over nuclear reactor safety, local opposition to proposed repositories, imminent shortages of spent fuel storage capacity at operating reactors, and now critical calls-to-action. In response, Congress enacted a big law.

C. The Nuclear Waste Policy Act

In 1983, after four years of political debate, a buoyant President Reagan signed the Nuclear Waste Policy Act (NWPA) into law.[110] Claiming the political victory, he said that the law "provides the long overdue assurance that we now have a safe and effective solution to the nuclear waste problem."[111] Passing the law was remarkable; it was the Nation's first comprehensive nuclear waste legislation after 25 years of legislative effort.[112] President Reagan emphasized that the NWPA finally "allows the Federal Government to fulfill its responsibilities concerning nuclear waste in a timely and responsible manner."[113] To allow the federal government to fulfill its responsibility, the NWPA did three important things.

First, following the IRG's recommendation, the NWPA formally identified deep geologic repository as the Nation's nuclear waste disposal choice and assigned responsibility to the federal government to dispose of

> increased broad scientific and public participation including subjecting the comprehensive plan to public comment.

Id. at Tab C at 22.

108. *Id.* at Tab H at 4.

109. *Id.* at Tab E at 3 (emphasis added).

110. DOE Timeline, *supra* note 98.

111. Ronald Reagan, 40th President of the United States, Remarks on Signing the Nuclear Waste Policy Act of 1982 (Jan. 7, 1983) (transcript provided by UC Santa Barbara American Presidency Project), https://www.presidency.ucsb.edu/documents/remarks-signing-the-nuclear-waste-policy-act-1982.

112. DOE Timeline, *supra* note 98.

113. Ronald Reagan, *supra* note 111.

the waste.[114] The NWPA established procedures for the DOE to identify three candidate repository sites and recommend those sites to the president.[115] The president would in turn submit two candidate sites to Congress for construction authorization.[116] These multiple sites would avoid the perception that any one community would bear the entire burden of the Nation's spent nuclear fuel management.[117]

Second, the NWPA established a timetable and key milestones for the federal government to identify a geologic repository.[118] Most notably, the law mandated that the DOE recommend three sites to the president by 1985.[119] By 1990, the federal government was to select the country's repositories.[120] Additionally, the DOE submits site characterization plans of the candidate sites to the NRC for construction authorization.[121] The NRC then has three years after that application to issue a final decision.[122]

Third, the NWPA prescribed the interactions between states and the federal agencies while selecting repository sites.[123] The Law included a long list of procedural requirements that mirrored the recommendations in the IRG Memo to President Carter.[124] For example, the Law mandates that the DOE will "consult and cooperate" with the affected state to resolve the concerns about the environment, public safety, or economic impacts of a repository.[125] But even after this negotiation, the states and affected tribes may still disapprove of the president's site recommendation to Congress.[126] This is the so-called *state veto*, where a state has 60 days following the president's submission of a site to Congress to "disapprove the site designation."[127] A state's ability to veto DOE siting decisions resulted from congressional political compromise; this is important for understanding why the Nation has not made progress on siting a repository.[128]

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114. Nuclear Waste Policy Act of 1982, Pub. L. No. 97-425, 96 Stat. 2207, § 111(b)(1)–(2) (codified as amended at 42 U.S.C. § 10131).

115. *Id.* § 114(a)(2).

116. *Id.*

117. *E.g.*, BRC Report, *supra* note 65, at 20.

118. Nuclear Waste Policy Act of 1982 § 112–14.

119. *Id.* § 114(a).

120. *Id.* § 114(a)(2)(A).

121. 42 U.S.C. § 10134(d).

122. *Id.*

123. Nuclear Waste Policy Act of 1982 § 114(a)(1).

124. *See supra* note 103–13 and accompanying text (explaining the policy basis for these procedures that ensure cooperation at different levels of government).

125. Nuclear Waste Policy Act of 1982 § 117(b)–(c).

126. 42 U.S.C. § 10136(b)(2).

127. *Id.*

128. *See infra* notes 166–69 and accompanying text (explaining how Nevada exercised the state veto to prevent progress at Yucca Mountain); *see also* BRC Report, *supra* note 65, at 22 (noting that

The NWPA initially offered hope. In this watershed moment in the Nation's nuclear waste management effort, Congress finally "[came] to grips with the politically unwelcome problem of radioactive waste disposal."[129] But only one year after enacting the law, lawmakers and federal agencies alike were already anticipating non-compliance.[130] By December 1983, the repository search was already behind schedule.[131] The agencies realized that the NWPA's original timelines and cost assumptions were unrealistic.[132] Despite its mandate to recommend the first repository site to the president by March 1987, the DOE admitted that this would not be possible until December 1990.[133] And even when that happened, the NRC claimed that it would be impossible to issue a final decision on the DOE's repository application within three years under its existing licensing procedures.[134]

The political landscape was also deteriorating.[135] Nationally, many remained guarded about the locations the DOE were to select, if any. One attorney representing the Yakima Indian Tribe reported that there was "no doubt that whoever is going to get selected is very likely to oppose it."[136] Utah Governor Matheson attacked the DOE for moving too fast in developing guidelines for a candidate repository and noted that there was "too little time for public input."[137]

So, four years after the NWPA's enactment, the Law was amended. Congress passed the Nuclear Policy Amendments Act in 1987 (Amendment), in order to streamline the repository siting process.[138] The Amendment canceled the second repository program and directed the DOE to cease

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"while the federal government's performance on nuclear waste management has left a lot to be desired, state opposition has played a significant role in the federal government's failures.").

129. U.S. OFF. OF TECH. ASSESSMENT, *supra* note 102; Ben A. Franklin, *Atom Waste Disposal Issue Still Unwelcome in Congress*, N.Y. TIMES (Aug. 25, 1982), https://www.nytimes.com/1982/08/25/us/atom-waste-disposal-issue-still-unwelcome-in-congress.html.

130. Matthew L. Wald, *No Nuclear Dump Sites In Sight Yet*, N.Y. TIMES (Jan. 29, 1984), https://www.nytimes.com/1984/01/29/weekinreview/no-nuclear-dump-sites-in-sight-yet.html.

131. *Id.*

132. BRC Report, *supra* note 65, at 22.

133. Wald, *supra* note 130.

134. U.S. GOV'T ACCOUNTABILITY OFF., GAO/RCED-89-22FS, QUARTERLY REPORT ON DOE'S NUCLEAR WASTE PROGRAM AS OF SEPTEMBER 30, 1988, 3 (Nov. 1988) [hereinafter 1988 GAO Report].

135. Wald, *supra* note 130.

136. *Id.*

137. *Id.*

138. *E.g.*, 1988 GAO Report, *supra* note 134, at 9 ("On December 22, 1987, the Nuclear Waste Policy Amendments Act of 1987 was signed into law. The amendments, [were] contained within the Budget Reconciliation Act for Fiscal Year 1988 (P.L. 100-203).") The amendments make substantial changes to NWPA and the manner in which DOE conducts its nuclear waste disposal program. *Id.* One of the most significant changes directs DOE to characterize the Yucca Mountain site and terminate all site-specific activities. *Id.*

research in all geologic formations in the United States except for one: Yucca Mountain in Nevada.[139] This "widely political" decision to make Yucca Mountain the Nation's sole repository provoked fierce opposition from the State.[140] The Amendment was soon after called the "screw Nevada bill."[141]

In the end, the original NWPA and its Amendment were a formula for failure. There are many facets to the complex legal, financial, and principled shortcomings of the NWPA and its Amendment, but two are most relevant to the issue of public mistrust.

1. Pre-supposed Geologic Repository at Yucca Mountain

First, these laws pre-supposed a nuclear waste management policy for the Nation without including the public. The Board on Radioactive Waste Management reported a worldwide scientific consensus that deep geological disposal "is the best option."[142] Nonetheless, the Board warned that "the U.S. program, as conceived and implemented over the past decade, is unlikely to succeed."[143]

How can this be? Even though geologic repository at Yucca Mountain may be the best waste disposal method, the American public never had the opportunity to take ownership of this choice. The IRG Memo itself acknowledged that other disposal options may be viable, and that any progress should be made in a step-wise manner that includes meaningful public participation.[144] The federal government should have engaged that community while identifying the site, and then intentionally sought concurrence with the result. Instead, the American public watched as Nevada vigorously argued that the laws were a "naked power play by certain members of Congress who brokered their arrangement, out of the public eye."[145] The state immediately questioned the scientific and legal integrity of Congress's decision.[146] Nevada lawmakers argued that Congress chose

139. BRC Report, *supra* note 65, at 22.

140. *Id.*

141. John Fialka, *The 'Screw Nevada Bill' and How it Stymied U.S. Nuclear Waste Policy*, N.Y. TIMES (May 11, 2009), https://archive.nytimes.com/www.nytimes.com/cwire/2009/05/11/11climatewire-the-screw-nevada-bill-and-how-it-stymied-us-12208.html.

142. COMM'N ON GEOSCIENCES, ENV'T, & RES., *Rethinking High-Level Radioactive Waste Disposal*, NAT'L ACADS. (1990), https://nap.nationalacademies.org/read/10293/chapter/1#ii.

143. *Id.*

144. *See supra* notes 107–13 and accompanying text (highlighting the relevant policy recommendations of the IRG Memo to President Carter).

145. Rosen, *supra* note 102, at 280 (internal quotation marks omitted).

146. *See, e.g.*, 2021 GAO Report, *supra* note 11, at 12.

> The Yucca Mountain repository has long experienced state and tribal opposition. Nevada state officials have expressed opposition to the Yucca Mountain project,

Yucca Mountain because political necessity demanded progress on a repository, and Nevada had the "smallest and weakest" delegation.[147]

But Congress's decision not only excluded public participation—it also happened too fast. The Radioactive Waste Management Board noted that the Nation's program under the NWPA "insist[ed] on defining in advance" the technical requirements of the geologic repository installation.[148] Contrary to the IRG's step-wise policy recommendation, the NWPA and its Amendment predicted the fate of nuclear waste into the distant future.[149] Under the laws, Congress asked "the public to expect absolute certainty about the safety of the repository for 10,000 years."[150] But even more unrealistic, it also asked the DOE to "pretend that they can provide it."[151]

This pre-supposed top-down policy mandate from Congress damaged the public's trust in the nuclear waste program. Experience suggests that policy solutions are more successful when the public takes ownership over the idea or the process.[152] The *decide-announce-defend* strategy frequently fails because it does not gain or sustain social acceptance.[153] Any attempt "to force a top-down federally mandated solution over the objections of a State or community, far from being more efficient, will take longer, cost more, and have lower odds of ultimate success."[154]

> citing concerns about excessive water infiltration, earthquakes, volcanoes, and other technical issues. In addition, Yucca Mountain is located within the Western Shoshone Nation, and according to the Shoshone and Paiute Tribes, they oppose the Yucca Mountain repository on cultural and scientific grounds as a form of environmental racism. In contrast, there was support from local communities within Nevada, including from Nye County—the county in which the proposed facility would be located, which supported the repository's development.

Id.

147. Rosen, *supra* note 102, at 2.

148. COMM'N ON GEOSCIENCES, ENV'T, & RES., *supra* note 142, at 1.

149. *Id.*

150. *Id.*

151. *Id.*

152. BRC Hearing, *supra* note 15, at 8–9 (statement of Gen. Brent Scrowcroft).

153. 2018 Reset Report, *supra* note 9, at 5.

> Nearly one-half of the initiatives ended prematurely because the projects failed to gain and sustain social acceptability. Those abandoned attempts typically adopted a strategy of "decide-announce-defend," in which the implementer, with little or no consultation, identified potential candidate locations, informed the recipient communities, and dismissed objections and criticism as they emerged.

Id. (emphasis omitted).

154. BRC Hearing, *supra* note 15, at 9 (statement of Gen. Brent Scrowcroft).

2. Excessively Prescriptive Bureaucratic Procedures

Second, the laws created excessively prescriptive procedures and formal mechanisms for coordination and interaction among the localities and with the agencies. Not only was the process cumbersome, but it made public participation inflexible and unresponsive to regional idiosyncrasies.[155] The NWPA and its Amendment may have addressed a "need for political credibility," but it ultimately created a "loss of public confidence" when bureaucratic procedures inevitably delayed progress.[156]

Those excessive procedures also delayed progress simply because agency capacity buckled beneath the sheer weight of paperwork alone. The Chief Administrative Judge at the NRC's Atomic Safety and Licensing Board Panel predicted that a repository licensing proceeding under the NWPA "would be the largest administrative proceeding ever conducted."[157] Estimates anticipated that by 1990, the agency would produce between 9.8 to 11.1 million pages of required documents.[158] Document production alone would require 12–18 months of manual effort.[159]

Rigid and excessive procedures also erode public confidence when they interfere with government performance.[160] Public trust is a function of satisfaction with the federal government.[161] Accordingly, public trust increases when people perceive that the government is performing efficiently and effectively.[162] But the NWPA and its Amendment handed a mammoth administrative task to agency personnel; they carried the burden of government accountability, thus stymieing agency performance.

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155. *See* COMM'N ON GEOSCIENCES, ENV'T, & RES., *supra* note 142, at vii.

156. *Id.*

157. 1988 GAO Report, *supra* note 134, at 13.

158. *Id.*

159. In 1988, the GAO noted that proceeding discovery alone would require "hundreds to thousands of requests for information and the preparation and filing of multiple interrogatories, depositions, affidavits, and testimony, which would require significant time and resources to request, search for, retrieve, develop, copy, and mail thousands of documents." *Id.*

160. *See generally* Nurgul R. Aitalieva, *Bureaucracy and Public Trust, in* GLOBAL ENCYCLOPEDIA OF PUBLIC ADMINISTRATION, PUBLIC POLICY, AND GOVERNANCE 2, 9 (Ali Farazmand ed., 2018).

> The research shows that citizens who perceive government as performing well report higher levels of trust in public institutions. For example, . . . citizens who are satisfied with the treatment they receive from the public health, employment, and social services generally have a higher level of trust in public institutions than citizens who are not satisfied with their treatment.

Id.

161. *Id.*

162. *Id.* ("Citizens trust government because government is working for them. Citizen trust in government can be increased by improving citizens' perceptions of government performance.").

D. "A Mountain of Trouble"

The Nation is still dealing with the fallout of the NWPA and its Amendment. Between 1988 and 2002, the DOE extensively studied the Yucca Mountain repository site under Congress's mandate.[163] Still, the focus on Yucca Mountain was problematic for many. One reporter explained how Congress selected this "Mountain of Trouble" following a "stormy, decades-long, multibillion-dollar search that crisscrossed much of the nation and eliminated dozens of other potential sites, often for reasons of politics rather than science."[164]

On February 14, 2002, after the federal government spent $8 billion on the 40-year search, the agency formally recommended the Yucca Mountain site to President George W. Bush for approval.[165] But Nevada immediately warned that it would exercise its state veto and reject the DOE's recommendation.[166] Not only did state officials reject becoming the host site to the Nation's nuclear waste, but they also launched a campaign convincing other states to prohibit waste shipment to Yucca Mountain.[167] The pithy Las Vegas Mayor Oscar B. Goodman commented on the proposal: "What a Valentine's day gift. Cupid shot nuclear-tipped arrows at the 43 states along the proposed transportation routes. What an expression of love for the country."[168] By April 2002, Nevada Governor Kenny Guinn submitted a notice of disapproval to Congress, thus using the state's veto to block progress at Yucca Mountain.[169] This suspended any progress on the Yucca Mountain effort.

E. The Blue Ribbon Commission and Consent-Based Siting

Political battles and controversy mired the process until 2009, when President Obama finally halted congressional appropriations towards Yucca Mountain.[170] Taking a bold step in a different direction, the Obama

163. 2021 GAO Report, *supra* note 11, at 14.

164. William J. Broad, *A Mountain of Trouble*, N.Y. TIMES MAG. (Nov. 18, 1990), https://www.nytimes.com/1990/11/18/magazine/a-mountain-of-trouble.html.

165. Matthew L. Wald, *Energy Department Recommends Yucca Mountain for Nuclear Waste Burial*, N.Y. TIMES (Feb. 15, 2002) [hereinafter *Yucca Mountain Recommended*], https://timesmachine.nytimes.com/timesmachine/2002/02/15/640263.html; *see also* 2021 GAO Report, *supra* note 11, at 14.

166. *See supra* note 127–128 and accompanying text (describing the NWPA's state veto mechanism).

167. *See* Wald, *supra* note 165.

168. *Id.*

169. 2021 GAO Report, *supra* note 11, at 14.

170. *Id.*

Administration established the Blue Ribbon Commission on America's Future (BRC) to develop a new nuclear waste policy.[171]

By this point, the need for a new policy was obvious. In a Senate hearing on the BRC in 2012, Senator Carper summarized the state of the Nation's nuclear waste: "After years of study and debate, we find ourselves 30 years later at what is really a dead end. We have no functioning nuclear waste repository and none in the foreseeable future."[172] Importantly, Senator Carper also noted that, "I believe that one of the biggest mistakes that we made is that we were unable to get consent from all parties on the location of disposal."[173] This idea inspired the distinctive policy proposal of the BRC's 2012 report—consent-based siting.[174]

The BRC recommended that Congress amend the NWPA to authorize a new consent-based process for selecting and evaluating candidate disposal sites.[175] Based on its findings, the BRC reported that "we believe this type of approach can provide the flexibility and sustain the public trust and confidence needed to see controversial facilities through to completion."[176] The report outlines the major qualities of a consent-based siting process, it should: result from a "complex and perhaps extended" series of negotiations; include a flexible and substantial incentive program; result in a legally enforceable agreement; and provide a "meaningful consultative role" for all affected levels of government.[177]

While the report clarified the principles behind consent-based siting, it offered little guidance on what the process should look like. The report identified transparency, flexibility, patience, responsiveness, and "a heavy emphasis on consultation and cooperation" as necessary to a consent-based siting process.[178] But the BRC also admitted that any process "prescribed in detail up front is unlikely to work."[179] For purposes of siting a nuclear waste repository, outlining a consent-based process is—by its very nature—elusive. The BRC reasoned that defining consent is ultimately the job of the candidate host community, "using whatever means and timing it sees fit."[180] Fundamentally, "[o]nly with open communication will we be able to re-

171. *See, e.g.*, CONG. RSCH. SERV., RL33461, CIVILIAN NUCLEAR WASTE DISPOSAL 1 (2018); *see also* BRC Report, *supra* note 65, at 1.

172. BRC Hearing, *supra* note 15, at 2 (statement of Hon. Thomas R. Carper).

173. *Id.*

174. BRC Report, *supra* note 65, at vii.

175. *Id.*

176. *Id.* at ix.

177. *Id.*

178. *Id.*

179. *Id.*

180. *Id.*

establish the public trust and confidence that is needed to solve our nuclear waste disposal issues once and for all."[181]

Unfortunately, these 2012 BRC aspirations were never realized. In 2017, the DOE pursued the BRC's recommendations and issued a draft consent-based siting process for storage and disposal of commercial spent fuel.[182] But political will changed when the Trump Administration took office in 2016, and the DOE's proposed strategy was shelved. Consequently, the NWPA and the Yucca Mountain project remain the law governing nuclear waste management. This is troublesome because the Yucca Mountain's future is uncertain—judicial challenges, political scraps, and licensing delays immobilized the effort.[183] Further casting the project into legal purgatory, Congress has not funded activities related to Yucca Mountain since 2009, despite the NWPA mandate.[184] This is the legal wasteland that the Nation inherited.

II. CURRENT STATUS OF THE SPENT FUEL IMPASSE

A. The Current "Ad Hoc" System

Even though the Nation stands at policy impasse, the commercial nuclear reactors nonetheless continue to generate and accumulate spent nuclear fuel. And without anywhere to go, the spent fuel remains stranded at reactor sites.[185] Many call this our "ad hoc" system for managing nuclear waste.[186] And the problem is not small; the Nation's inventory of nuclear waste "ranks among the largest and most diverse on the globe."[187]

At the start of the nuclear age, Congress's original policy to merely *try* nuclear energy while *eventually* figuring out the details lead to this ad hoc system.[188] Such a system is problematic because it adversely impacts future

181. BRC Hearing, *supra* note 15, at 3 (statement of Hon. Thomas Carper).

182. 2021 GAO Report, *supra* note 11, at 53.

183. *See, e.g.*, BRC Report, *supra* note 65, at 23 ("At this point, with key decisions by the courts and the NRC still pending, the future of the Yucca Mountain project remains uncertain.").

184. 2021 GAO Report, *supra* note 11, at 23.

185. *See infra* note 205.

186. *See* 2018 Reset Report, *supra* note 9, at 43 ("More than 35 years later, an *ad hoc* system for managing spent fuel has replaced this strategy; there has been no reprocessing of commercially generated nuclear fuels, and there is no geologic repository in sight.").

187. NUCLEAR WASTE TECH. REV. BD., SIX OVERARCHING RECOMMENDATIONS FOR HOW TO MOVE THE NATION'S NUCLEAR WASTE MANAGEMENT PROGRAM FORWARD 3 (2021) [hereinafter NWTRB Recommendations].

188. *See supra* note 30–58 and accompanying text (describing Congress's policy approach embodied in the Atomic Energy Act in the early years of the nuclear age).

disposal decisions, increases costs, and erodes public confidence.[189] The 2018 report titled, "Reset of America's Nuclear Waste Management Strategy and Policy" explains the implications: "Instead of a planned, coherent system, we have the confusion of an unplanned, less than optimal system with each player focused only on their own small piece of the larger system."[190]

B. Spent Fuel in Vermont

The former Vermont Yankee Nuclear Power Plant is one piece of the larger ad hoc system. Located on a 125-acre site in Vernon, the Vermont Yankee Nuclear Power Station (Vermont Yankee) operated from 1972 until 2014.[191] At that time, its owner, Entergy Corporation, allowed the operating license to expire and announced that it would shut down the plant by the end of the year.[192] In 2019, the company sold the plant to Northstar for industrial decommissioning.[193] Currently, Northstar continues to manage the demolition of the buildings, infrastructure, and nuclear reactor components.[194] Plant operators removed the last of the fuel rods from the reactor in 2015, and all of the spent fuel remains onsite in dry-cask storage.[195] In all, this means that 42-years-worth of radioactive spent fuel resides in large concrete and steel cylinders on a concrete pad by the Connecticut River.[196]

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189. 2021 GAO Report, *supra* note 11, at 27.

190. 2018 Reset Report, *supra* note 9, at 43.

191. Press Release, Entergy, Entergy Completes Sale of Vt. Yankee to NorthStar (Jan. 11, 2019) (available at https://www.entergynewsroom.com/news/entergy-completes-sale-vermont-yankee-northstar/).

192. *See, e.g.*, *Landscape Inventory of the Vermont Yankee Decommissioning Site*, TOWN OF VERNON, VT. (Dec. 7, 2020), https://vernonvt.org/wp-content/uploads/2021/02/Landscape-Inventory-of-the-Vermont-Yankee-Decommissioning-Site.pdf.

193. Press Release, Entergy, *supra* note 191; *Decommissioning Facts*, NORTHSTAR, https://vydecommissioning.com/decommissioning-facts/ (last visited Mar. 10, 2023).

> Decommissioning is a multi-step process that begins when a nuclear plant is retired from service. It has several key steps as the facility and systems are secured for long-term storage, carefully decontaminated and dismantled and the land restored for future use. The Nuclear Regulatory Commission (NRC), together with state and local authorities, oversees each phase of the decommissioning process. Under NRC regulations, a plant must be decommissioned within 60 years of the permanent cessation of operations.

Id.

194. *See* NORTHSTAR, *supra* note 193.

195. *Vermont Yankee Nuclear Power Station, Site Status Summary*, U.S. NUCLEAR REGUL. COMM'N., https://www.nrc.gov/info-finder/decommissioning/power-reactor/vermont-yankee.html (last updated Mar. 9, 2021) [hereinafter VY Status Summary].

196. Smallheer, *supra* note 13; *see also Dry Cask Storage*, U.S. NUCLEAR REGUL. COMM'N., https://www.nrc.gov/waste/spent-fuel-storage/dry-cask-storage.html (last updated Jan. 9, 2023).

This is not ideal. Radioactive hazards to the local area aside, the presence of spent fuel precludes complete site redevelopment. The Vermont Yankee site contains the so-called independent spent fuel storage installation (ISFSI).[197] Vernon will host the spent fuel at this ISFSI until the DOE identifies a storage or disposal option for the waste.[198] Because of this reliance on DOE action, former nuclear plant sites are unique in that redevelopment into economically productive reuse may take a very, very long time.[199]

Site redevelopment is important to the well-being of Vernon. One goal in the 2018 Vernon Town Plan is to "chart a course for development that will benefit the Town and its future generations."[200] Vernon already faced economic downturn after skilled Vermont Yankee laborers left when the plant shut down.[201] Underscoring the burden on communities hosting the stranded fuel, the Town also supports working with the Vermont

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> Dry cask storage allows spent fuel that has already been cooled in the spent fuel pool for at least one year to be surrounded by inert gas inside a container called a cask. The casks are typically steel cylinders that are either welded or bolted closed. The steel cylinder provides a leak-tight confinement of the spent fuel. Each cylinder is surrounded by additional steel, concrete, or other material to provide radiation shielding to workers and members of the public. Some of the cask designs can be used for both storage and transportation.

Id.

197. An ISFSI is the term used by the NRC to define these spent fuel storage areas at reactor sites. *See Independent Spent Fuel Storage Installation (ISFSI)*, U.S. NUCLEAR REGUL. COMM'N., https://www.nrc.gov/reading-rm/basic-ref/glossary/independent-spent-fuel-storage-installation-isfsi.html (last updated Mar. 9, 2021); *see also* VY Status Summary, *supra* note 195 (explaining the spent fuel status at the Vermont Yankee site).

198. *See, e.g.*, VY Status Summary, *supra* note 195.

199. *See generally* WINDHAM REGIONAL COMMISSION, THE WINDHAM REGION EXPERIENCE WITH THE CLOSURE OF VERMONT YANKEE 6 (Apr. 10, 2019).

> Assume the site will not be available for redevelopment within a time horizon that will mitigate closure impacts. A possible exception could be a situation where the plant site is extraordinarily large. Precedent indicates that spent fuel storage on the site of the dismantled plant will preclude redevelopment. At a minimum, assume that the site will not be available for redevelopment for a period of at least 10 years after the intent to cease operations is announced.

Id.

200. TOWN OF VERNON, *supra* note 3, at 4.

201. *See id.* at 11.

> In the final months of 2014 Entergy Vermont Yankee permanently ceased operation. In the subsequent two years over 450 employees left the power plant; 85 of them lived in Vernon. Many families relocated. Skilled labor left for comparable jobs in the nuclear field, and some families have remained with "weekend" parents, struggling to maintain a home in Vernon while working in power plants far away. Housing values have decreased (see housing chapter), leaving many residents with mortgages higher than market value.

Id.

congressional delegation to pass legislation that would "compensate municipalities such as Vernon that are required to host ISFSIs in the absence of a central storage solution, and any other legislation that would benefit communities that host nuclear power facilities."[202]

The DOE is aware of this quagmire. On February 28, 2022, representatives from the DOE Office of Nuclear Energy presented at a special meeting of the Vermont Nuclear Decommissioning Citizens Advisory Panel (VT NDCAP).[203] The purpose of the meeting was to discuss the recent consent-based siting request for information (RFI), and allow the citizen panelists to vote on draft language to submit as comments.[204] Dr. Kim Petry, the Deputy Assistant Secretary for Spent Fuel and Waste Disposition, noted that "while the spent nuclear fuel is stored safely all across the United States, the communities that have [the] spent fuels including yours never agreed to host the material long term."[205] Dr. Petry acknowledged that "it is our responsibility to those communities, like yours, to move and send [the spent] nuclear fuel to an interim storage facility. And the time to start work on that is now."[206]

Indeed, Vernon is not alone; other communities are also part of the ad hoc management system.[207] Nine other shut down commercial power plant sites currently store spent fuel a total of 2,800 metric tons of fuel rod assemblies.[208] To support these communities, Senator Tammy Duckworth introduced S. 1290, or the STRANDED Act, in 2021.[209] The Bill found that "decommissioning a commercial nuclear power plant is often catastrophic for the host community because nuclear power plants are major employers

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202. *Id.* at 13.

203. *See Vermont Nuclear Decommissioning Citizens Advisory Panel (VT NDCAP)*, VT. DEP'T. PUB. SERV., https://publicservice.vermont.gov/electric/ndcap (last visited Mar. 15, 2023).

204. Brattleboro Community TV, *VT Nuclear Decommissioning Citizens Advisory Panel: VT NDCAP-2/28/22 Mtg*, YOUTUBE (Feb. 28, 2022), https://www.youtube.com/watch?v=W7ZAHGUaD4M [hereinafter Dr. Kim Petry].

205. *Id.*

206. *Id.*

207. *See, e.g.,* Richard B. Stewart & Jane B. Stewart, *Solving the Spent Nuclear Fuel Impasse*, 21 N.Y.U. ENVT'L. L. J. 1, 56–57 (2014).

> [T]ribes and communities with such sites bear SNF storage burdens without obtaining offsetting benefits and are partners in a 'deal' to which they did not agree. There is broad support in principle for moving SNF at shut-down reactors to consolidated storage, thus freeing their 'host' communities from SNF storage burdens and allowing the reactor sites to be converted to beneficial use.

Id. at 57.

208. *Id.* at 57.

209. The STRANDED Act is shorthand for "Sensible, Timely Relief for America's Nuclear Districts' Economic Development" Act. *See* S. 1290, 117th Cong. (1st Sess. 2021).

and the primary source of local tax revenue."[210] Additionally, the stranded waste is a "profound obstacle to future economic growth" because it deters potential employers and residents from moving to that community.[211] If passed, the Bill would have established noncompetitive grants to "offset the economic and social impacts of stranded nuclear waste" in host communities.[212] Still, with or without federal support, these communities cannot fully redevelop the site until the DOE transfers the spent fuel.

In its decommissioning oversight and licensing, the NRC assumes that the DOE will take the spent fuel in 2052, at which point the entire site may be returned to Vernon for redevelopment.[213] But this date is arbitrary—the DOE has not confirmed that spent fuel will be removed from the concrete pad by any exact date. Until that happens, any future redevelopment must coexist with the spent fuel casks, and towns like Vernon must ensure the safety and management of this area.[214]

So, Vernon inadvertently became part of the Nation's ad hoc system for managing its nuclear waste. Such communities are "partners in a 'deal' to which they did not agree."[215] Witnessing this does little to inspire trust in the federal government.

III. CONGRESS MUST ACT TO RESOLVE THE IMPASSE

A. "What goes around comes around"

On November 30, 2021, the DOE announced in a press release that the agency issued a RFI in the Federal Register for a consent-based siting process to identify spent fuel storage sites.[216] Once again, the DOE seeks public input

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210. *Id.* § 2(5).

211. *Id.* § 2(6)–(7).

212. *Id.* § 6(a).

213. *Independent Spent Fuel Storage Installation*, *supra* note 197.

214. *See Landscape Inventory*, *supra* note 192.

> The storage of spent nuclear fuel will remain on site until the US Department of Energy (DOE) determines an alternative storage facility for all nuclear waste in the United States. A section of undefined use, displayed in yellow, is incorporated in the scenarios to account for the safe storage of spent fuel in purpose-built Independent Spent Fuel Storage Installation (ISFSI). The future redevelopment will coexist with these ISFSI and the Town of Vernon will ensure the safety and management of this area.

Id.

215. Stewart & Stewart, *supra* note 207, at 57.

216. Press Release, Dep't of Energy, DOE Restarts Consent-Based Siting Program for Spent Nuclear Fuel, Requests Input on Interim Storage Process (Nov. 30, 2021) (available at https://www.energy.gov/articles/doe-restarts-consent-based-siting-program-spent-nuclear-fuel-requests-input-interim).

so that it may develop the Nation's nuclear waste management strategy "in an equitable way."[217]

This step is in the right direction—since the 2012 BRC report, many have called upon the federal government to adopt a consent-based approach to managing nuclear waste.[218] But the approach is nonetheless inadequate for at least one main reason: The Nation needs cohesive action from Congress, not the DOE.

The DOE's efficacy and responsiveness is hamstrung by the NWPA. Under the law, the DOE may only pursue Yucca Mountain geologic repository for long-term nuclear waste disposal, thus limiting the agency's ability to pursue consolidated interim storage of the stranded fuel. To the extent that the DOE is unable to identify and implement a comprehensive solution to the nuclear waste problem, it is because bad law lurks behind the agency. The Government Accountability Office (GAO) explains why an act of Congress is necessary: "If Congress were to take these actions to break the impasse, Congress could then direct DOE to more fully develop and implement an integrated waste management strategy, which nearly all of the experts we interviewed said was needed."[219]

In 2012, New Mexico Senator Udall conceded that nuclear waste policy has a "poor history in Congress."[220] As evidence, he recalled that Congress cut the site selection process short in the NWPA Amendment and mandated Yucca Mountain over state objection.[221] Foreshadowing the inevitable and difficult work facing Congress, he warned that "[w]hat goes around comes around."[222]

With the DOE's RFI, the nuclear waste policy impasse is coming back around to Congress. Congress enacted the AEA without fully considering all of the policy implications of expanding civilian nuclear power development.[223] Congress later enacted the NWPA and its Amendment,

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217. *Id.*

218. *See* 2018 Reset Report, *supra* note 9, at 6 ("The Steering Committee recommends the adoption of a consent-based siting process that (1) establishes strong bonds of trust between localities, tribes, and states on the one hand and the implementer and that (2) fairly reallocates power among the parties."); *see also* NWTRB Recommendations, *supra* note 187, at 19 (calling for "a consent-based process to select disposal sites (or at least a process that includes public engagement)").

219. U.S. GOV'T ACCOUNTABILITY OFF., GAO-21-603, COMMERCIAL SPENT NUCLEAR FUEL: CONGRESSIONAL ACTION NEEDED TO BREAK IMPASSE AND DEVELOP A PERMANENT DISPOSAL SOLUTION 23 (2021).

220. BRC Hearing, *supra* note 15, at 7 (statement of Sen. Tom Udall).

221. *Id.*

222. *Id.*

223. *See supra* notes 43–50 and accompanying text (describing how Congress ushered into the nuclear age without doing all of its policy homework).

which are in many ways a formula for failure.[224] Congress should now assume its role as the Nation's lawmaking body and right the course of nuclear waste policy. To accomplish this, Congress should enact new legislation that repeals or amends the NWPA. This new legislation must abandon previous top-down policy decisions and instead mandate a new consent-based siting process in statute, instead of leaving it to agency rulemaking. While this would be a big lift for Congress, lawmakers will not be starting from scratch.

B. "Quick & Piecemeal" Legislative Attempts

In recent years, federal lawmakers proposed several bills that attempted to resolve the nuclear waste policy impasse. For example, H.R. 1524, the Nuclear Waste Informed Consent Act of 2021, requires the DOE "to obtain the consent of affected State and local governments" before making an expenditure towards a nuclear waste repository.[225] H.R. 2699, the Nuclear Waste Policy Amendments Act of 2019, amends the NWPA and directs the DOE to initiate a program to store consolidated commercial spent nuclear fuel during the development and operation of a permanent repository.[226] That Bill also creates a Stranded Nuclear Waste Task Force to study funding options for communities hosting stranded fuel.[227]

But the bills fall short because they are "quick and piecemeal" solutions; they do not define and establish a truly consent-based siting process that will break the policy impasse.[228] H.R. 1524 does not define what "consent" means at all, and only mandates that the DOE "has entered into an agreement for a repository" with the locality.[229] H.R. 2699 also fails to define "consent," and does not mandate any new process for identifying a repository beyond Yucca

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224. *See* discussion *supra* Part I.C–E (describing how key elements in the NWPA and its Amendment were a formula for failure).

225. Nuclear Waste Informed Consent Act, H.R. 1524, 117th Cong. (2021).

226. Nuclear Waste Policy Amendments Act of 2019, H.R. 2699, 116th Cong. (2019).

227. *Id.* § 608(a).

228. Seth P. Tuler & Thomas Webler, *A Better Way to Store Nuclear Waste: Ask for Consent*, BULL. OF THE ATOMIC SCIENTISTS (Apr. 21, 2021) https://thebulletin.org/2021/04/a-better-way-to-store-nuclear-waste-ask-for-consent/.

> Legislative proposals have also emphasized quick and piecemeal solutions (e.g., S. 1234, H.R. 2699) that reduce consent to agreement by elected state and host community officials. Together, these efforts are likely to exacerbate challenges to developing a socially acceptable, cohesive, and effective strategy for managing spent nuclear fuel and high-level radioactive waste. They undermine conditions necessary for consent in a holistic systems-oriented solution.

Id.

229. H.R. 1524, 117th Cong. § 3 (2021).

Mountain. Indeed, these disjointed "solutions" may exacerbate the problem because they would further delay meaningful progress.

However, one bill gets somewhat close to a solution. In 2019, Senator Lisa Murkowsi introduced S. 1234, the Nuclear Waste Administration Act.[230] It establishes "a consensual process for siting nuclear waste facilities," and creates a new organization that would manage the Nation's nuclear waste.[231] Still, the language of S. 1234 distills the concept of consent down to mere agreement and in turn ignores the complexity of achieving consent in the context of broken public trust.

So, the looming question remains—what does consent mean in this context, and how should it translate into law? The DOE first took on the challenge of drafting a consent-based siting process in 2015, following the BRC's 2012 report.[232] After receiving public input, the agency issued its Draft Consent-Based Siting Process report in January 2017 (2017 Draft Process), which identified ten design principles and proposed a new siting process.[233] But with the change in presidential administrations, the 2017 Draft Process, like the 2012 BRC Report, was shelved.[234]

C. "The Realm of Social Experimentation"

By this point, defining consent in the context of the nuclear waste management has captured the attention of many researchers, industry experts, and academics. Seth Tuler and Thomas Webler from the Social and Environmental Research Institute examined the concept of consent in other contexts to understand what it means for siting nuclear waste facilities.[235] They note that "calls for consent-based siting have not proceeded with a clear grounding in the theoretical history of this concept, which, in our opinion, should inform its application to ensure it is not reduced simplistically to the

230. Nuclear Waste Administration Act of 2019, S. 1234, 116th Cong. (2019).

231. *Id.*

232. U.S. DEP'T OF ENERGY, DRAFT CONSENT-BASED SITING PROCESS FOR CONSOLIDATED STORAGE AND DISPOSAL FACILITIES FOR SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE 2 (Jan. 12, 2017) [hereinafter 2017 DOE Draft Process].

233. Those ten principles are: "prioritization of safety; environmental responsibility; regulatory requirements; trust relationships with Indian Tribes; environmental justice; informed participation; equal treatment and full consideration of impacts; community well-being; voluntariness/right to withdraw; transparency; and stepwise collaborative decision-making that is objective and science-based." *Id.* at 6–7 (cleaned up). Subsequent sections of this Note also explore some of these principles and discuss their merits and shortcomings. *See infra*, notes 304–16 and accompanying text.

234. *See supra,* notes 182–83 (describing the policy change that accompanied the Trump Administration).

235. Seth P. Tuler & Thomas Webler, *Unpacking the Idea of Democratic Community Consent-based Siting for Energy Infrastructure*, J. OF RISK RSCH 94, 95 (Nov. 5, 2020).

concept of acceptance."[236] So, Tuler and Webler turned to consent as it is understood in political theory and found the work of democratic theorist Robert Dahl to be enlightening.[237]

Dahl identified four distinguishing criteria of a democratic process that are applicable to the consent-based siting process: (1) effective participation; (2) voting equality at the decisive stage; (3) enlightened understanding; and (4) control of the agenda.[238] These principles should be the bedrock of the consent-based siting landscape because both processes produce similar results. Both democratic and consent-based siting processes count the voice of each citizen as valid, and they both lead to binding decisions about policy and management.[239] If the federal government truly wishes to build public trust and adopt a consent-based process, then it should find credence in these foundational democratic principles.

But translating the principles to action is no small task given the current NWPA requirements, the formal roles of the federal agencies, the current ad hoc management system, and brooding mistrust in government. The Nation faces a "complex sociotechnical systems challenge," requiring coordinated performance "over very long periods of time within evolving social and technical contexts."[240] Because experience of how this will work is limited, "we are in the realm of social experimentation with institutional arrangements and procedures."[241] If creating a consent-based siting process that is rooted in principles of democracy is an experiment, then it would behoove lawmakers to find examples of what this process might look like. This is where Vermont—the self-identified "brave little state"—may step in.[242]

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236. *Id.*

237. *Id.* at 98.

238. ROBERT DAHL, DEMOCRACY AND ITS CRITICS 108–15 (Martin Ash 1989).

239. *Id.* at 108.

240. Seth P. Tuler & Roger E. Kasperson, *Social Distrust: Implication and Recommendation for Spent Nuclear Fuel and High Level Radioactive Waste Management, A Technical Report Prepared for the Blue Ribbon Commission on America's Nuclear Future*, 2 (Jan. 29, 2010) https://cybercemetery.unt.edu/archive/brc/20120620221531/http:/www.brc.gov/sites/default/files/documents/brc.social_trust.17feb11.pdf.

241. *Id.*

242. The moniker came from a speech President Calvin Coolidge delivered in 1928, entitled "Vermont is a State I Love," wherein he said: "If ever the spirit of liberty should vanish from the rest of the Union, it could all be restored by the generous store held by the people of this brave little State of Vermont." President Calvin Coolidge, *Vermont is a State I Love* (Sept. 21, 1928), https://coolidgefoundation.org/resources/speeches-as-president-1923-1929-21/.

D. "The first Tuesday of March"

Vermont has a special tradition dating back to before the State even existed.[243] State law provides that a "meeting of the legal voters of each town shall be held annually on the first Tuesday of March for the election of officers and the transaction of other business."[244] Vermonters call this day *Town Meeting*.[245]

Town Meeting is not to be confused with a form of public meeting, debate style, or election-campaign strategy. Rather, Town Meeting is itself "a legislature, a policy-making institution."[246] Once a year, a town's registered voters assemble on the first Tuesday of March to govern the town, consider important issues, and conduct other business. As such, every registered voter becomes a legislator: "you *are* the government in a Vermont town."[247] Important things happen on Town Meeting Day that is relevant to understanding and defining consent in the nuclear waste context.

Primarily, citizens of a town directly participate in the decision-making process and conduct the town's official business.[248] In the 1700s, such official business included whether to let pigs run free or whether smallpox vaccinations should be allowed.[249] Now, citizen-voters hear and approve of reports from town officers, elect new officials, establish leash laws and speed limits, and approve the town's budget.[250] Town Meeting may seem quaint, but it deserves attention because of the important ideological implications: "Town Meeting remains the one place in the United States where the

243. "The first town meeting was held in Bennington in 1762, 15 years before Vermont was created. In the late 1700s, as today, town citizens in Vermont held meetings so that they could address the problems and issues they faced collectively." VT. SEC. OF STATE, A CITIZEN'S GUIDE TO VERMONT TOWN MEETING 3 (2008), https://outside.vermont.gov/dept/sos/Elections%20Division/election%20info%20and%20resources/town%20meeting%20and%20local%20elections/citizen-guide-text-2.pdf

244. VT. STAT. ANN. tit. 17, § 2640(a).

245. SUSAN CLARK & FRANK BRYAN, ALL THOSE IN FAVOR: REDISCOVERING THE SECRETS OF TOWN MEETING AND COMMUNITY 13 (2005) ("For us this way of resolving human problems humanely, this way of combining our natural and inescapable longings for both liberty and community, this way of common enterprise – this way of peace – is a way of life. The world calls it democracy. We call it town meeting.").

246. *Id.* at 22.

247. *Id.* (emphasis added).

248. *See* VT. SEC'Y. OF STATE, *supra* note 243, at 4 ("Vermont town meetings . . . are the practice of direct democracy. That is, eligible citizens of the town may vote on specific issues that are announced through a warning.").

249. *Id.* at 3.

250. *Id.* at 12.

individuals can participate directly in the formation of public policy through legislative action."[251]

This pure democracy in action has certain benefits. First, democratic self-governance generates ownership in the business and policies of the municipality.[252] When people are a part of the decision-making process, there is more acceptance of the outcome or proposal.[253] For instance, one Middlebury town moderator who presided over Town Meeting for 33 years noted that "when a resident complains about a local issue, such as taxes, it's usually someone who didn't attend town meeting."[254] This community ownership and acceptance is essential in the context of siting a nuclear waste repository. Town Meeting also has the benefit of creating social capital through face-to-face interactions among neighbors and fellow citizen decision-makers.[255]

Those familiar with Vermont's Town Meeting know that it is more than the romanticized vision of well-behaved citizens conversing politely. Rather, this unadulterated form of self-governance is decidedly untidy. People pack into drafty town halls or school gyms and sit on uncomfortable metal chairs for hours. Many expect disagreement and discomfort, and community leaders often look for ways to make the day more palatable for citizen attendees.[256] Plus, some Town Meetings consume the entire day. In 2019, the Brattleboro Town Meeting began at 8:30 a.m. and ended at 9:27 p.m.[257] A recent survey revealed that 70% of attendees believe that the meetings have become "untenable" because they are so lengthy.[258] Such a long day can take its toll—people often feel "captive to constant harangues by the same people."[259]

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251. ANDREW NUQUIST, TOWN GOVERNMENT IN VERMONT 5 (1964).

252. CLARK & BRYAN, *supra* note 245, at 38.

253. *See generally* Sven Ove Hansson, *Informed Consent out of Context*, 63 J. OF BUS. ETHICS 149, 153 ("In a democratic society, it is not sufficient to find ways to 'draw forth' acceptance pf the ready-made plans and proposals of an elite. Instead, public participation on equal terms should be sought in all phases of decision-making.").

254. Anne Wallace Allen, *Democracy How? The Pandemic Has Weakened—but Not Killed—Vermont's Grand Town Meeting Day Tradition*, SEVEN DAYS (Feb. 23, 2022), https://www.sevendaysvt.com/vermont/democracy-how-the-pandemic-has-weakened-but-not-killed-vermonts-grand-town-meeting-day-tradition/Content?oid=34956153.

255. VT. SEC'Y OF STATE, *supra* note 243, at 4.

256. *See generally* Kevin O'Connor, *Brattleboro Town Meeting to Debate Feeding Itself a $2,500 Tax-funded Lunch*, VTDIGGER (Mar. 16, 2022) https://vtdigger.org/2022/03/16/brattleboro-town-meeting-to-debate-feeding-itself-a-2500-tax-funded-lunch/ ("'There's a tradition in some Vermont towns for having lunch,' Millicent Cooley, chair of the Representative Town Meeting Steering Committee, recently told local leaders. 'It's community building and helps break up tensions between people who may be disagreeing.'").

257. *Id.*

258. *Id.*

259. *Id.*

Because of this, some may argue that the Town Meeting tradition is not a viable model for a consent-based process.

Still, Vermonters will turn out for their "March tradition that has been bringing community members together in Vermont for nearly 250 years."[260] Why? Citizens will participate if they know the "political arena is small enough for them to make a difference and there are issues at stake that really matter."[261] Vermont's Town Meeting may seem quaint, but the lessons are good advice for larger national issues.

E. Applying the Principles and Proposing New Language

Vermont's Town Meeting tradition can also exemplify and demonstrate Dahl's four criteria for democratic processes.[262] After explaining the criteria and providing a practical example of what it may look like, this section proposes statutory language for a consent-based siting process.

1. Effective Participation

Effective participation means that throughout the process of making binding decisions, parties have an equal and adequate opportunity to express their preferences.[263] Dahl writes that this criteria is linked to the principle of equal consideration of interests—"to deny any citizen adequate opportunities for effective participation means that because their preferences are unknown or incorrectly perceived, they cannot be taken into account."[264] Tuler and Webler note that effective participation occurs through deliberative processes, where citizens draw on their experience and knowledge to convince their peers to support a given measure.[265] In this way, effective participation means that citizens are bringing a plurality of perspectives, experience, and knowledge to the discussion.[266] So, people must not only be afforded the opportunity to participate, but they must *actually* participate in a meaningful way.

Town Meeting epitomizes effective participation; the entire purpose of the day is to gather and deliberate with fellow citizen-lawmakers. To be sure, this is not easy work. Effective and *civil* participation requires a high level of

260. Anne Wallace Allen, *supra* note 254.

261. *Id*.

262. *See supra* note 238 and accompanying text (identifying Robert Dahl's four criteria that are necessary for a truly democratic process).

263. DAHL, *supra* note 238, at 109.

264. *Id.*

265. Tuler & Webler, *supra* note 235, at 99.

266. *Id.*

effort and interaction—possibly a "lost art" in modern day.[267] In the Town Meeting format, citizens are consciously opting to spend time working to solve problems and discuss contentious issues.[268] Floor discussions in a community space allow people to learn the reasons behind other points of view.[269] This open exchange of a plurality of ideas is the effective participation that Dahl prescribes to achieve consent by the governed.

S. 1234, the Nuclear Waste Administration Act of 2019, attempted to address the need for effective participation. The bill stated that, in siting nuclear waste facilities, the agency shall employ a process that "is open to the public and allows interested persons to be heard in a meaningful way."[270] The language is a good start, but it is too vague and lacks adequate guidelines for ensuring "meaningful" participation.

The DOE's 2017 Draft Process gets closer to outlining an effective participation process.[271] One of the design principles in that Draft is *Equal Treatment and Full Consideration of Impacts*, wherein the siting process is conducted with full consideration of the interests of affected parties.[272] The whole process then proceeds in a way that identifies and shares potential impacts.[273]

Congress should enact the following language that would outline how citizens may effectively participate in the siting process:

> In siting nuclear waste facilities under this Act the [implementing organization] shall employ a process that—
>
> (1) allows affected communities to decide whether, and on what terms, the affected communities will host a nuclear waste facility, wherein:
>
> (A) the community is given reasonable opportunity to understand the implications of being a host community,

267. Anne Wallace Allen, *supra* note 254.

268. *Id.*

269. *Id.*

270. S. 1234, 116th Cong. § 304(2) (2019).

271. *See supra* notes 232–33 and accompanying text (explaining how the DOE developed with Draft Process and its current status).

272. 2017 DOE Draft Process, *supra* note 232, at 6.

273. *Id.*

> (B) members of the community are given reasonable opportunity to participate in public meetings about the terms of becoming a host community;
>
> (2) allows interested persons to be heard in a meaningful way, in a process that—
>
> (A) is consistently open to the public, at venues convenient to members of the public, scheduled in consultation with the community,
>
> (B) encourages public participation, based on the needs and qualities of the community,
>
> (C) is designed to understand the range of impacts and interests involved within the affected communities,
>
> (D) is responsive and flexible to the needs and qualities of the community, and
>
> (E) provides opportunity for participation and comments in addition to the open public meetings;

If Congress adopted this language, then the Nation would have an interactive process by which citizens in potential host communities can effectively express their preferences, interests, and share their knowledge. Because of the various levels of government or different organizations present for these discussions, this may not necessarily mean that the consent-based siting process proceeds in some kind of open public forum like Town Meeting. Instead, the language requires meeting procedures specifically designed to capture the plurality of perspectives within the affected community, whatever they may be. The appropriate meeting format would vary depending on the nature of the potential host community and the partnering institutional organizations.

Relatedly, some may argue that Town Meeting is a poor public participation example for the nuclear waste context. Specifically, such an open process would be inappropriate for siting a nuclear waste facility because it will not promote effective participation in the adversarial context—and siting a nuclear waste facility can be downright legally

adversarial.[274] It can be argued that face-to-face interactions in Town Meeting is only beneficial when people's goals and motivations are in harmony.[275] When motivations are in harmony, then this personal and deliberative process reinforces "common purpose and friendship."[276] So, Town Meeting is essentially distinguishable from nuclear waste siting because the goals and motivations are not necessarily in harmony; the federal government and a host community may not have frictionless goals. When there is disagreement or conflict, a Town Meeting format could then "stifle dialogue" because people come simply to argue for their point of view.[277] In that situation, "people do not really hear one another."[278] Naturally, this is antithetical to a true consent-based siting process.

But this concern is addressed by enacting language that allows for different participation processes that are responsive to the needs of different communities. If the community can design the nuclear facility siting process, then they can account for any relevant relational idiosyncrasies. Furthermore, the concern can be addressed if the federal government assures the public that they share some similar goals and motivations. Dr. Petry explained that the DOE's definition of successful outcome to the VT NDCAP, which "could [look like] a negotiated consent agreement defined by the community in collaboration with the Department; or a determination that, after exploring the options, the community is simply not interested. We consider both to be successful outcomes."[279] The language that outlines a consent-based siting process should similarly assure host communities that the federal

274. For example, in 2021, the NRC approved a license application for a consolidated *interim* storage facility submitted by the private company Interim Storage Partners in Andrews County, Texas. RECORD OF DECISION, INTERIM STORAGE PARTNERS LLC LICENSE APPLICATION FOR A CONSOLIDATED INTERIM STORAGE FACILITY, ANDREWS COUNTY, TEXAS. U.S. NUCLEAR REG. COMM. (Sept. 13, 2021), https://www.nrc.gov/docs/ML2122/ML21222A214.pdf. That proposed facility would store 40,000 tons of nuclear waste from around the country (traveling by rail), until the DOE identifies a permanent repository. Soon after the decision, Governor Greg Abbott said, "I will not let Texas become America's dumping ground for deadly radioactive waste," and the State filed suit against the NRC's decision in 2022. Press Release, Governor Abbott Petitions Fifth Circuit To Keep Spent Nuclear Fuel Out Of The Permian Basin, OFF. OF THE TEXAS GOVERNOR, GREG ABBOTT (Feb. 8, 2022) https://gov.texas.gov/news/post/governor-abbott-petitions-fifth-circuit-to-keep-spent-nuclear-fuel-out-of-the-permian-basin. In its brief filed with the Fifth Circuit Court of Appeals, the State argued that the NRC violates the NWPA because, "Congress has never authorized the Commission to license a private waste facility like the one it approved." Brief for State Petitioners at ii, Texas v. Nuclear Regul. Comm'n, No. 21-60743 (5th Cir Feb. 7, 2022), https://gov.texas.gov/uploads/files/press/Texas_v._NRC_Petition_(5th_Cir_.)_.pdf.

275. RICHARD C. BOX, CITIZEN GOVERNANCE: LEADING AMERICAN COMMUNITIES INTO THE 21ST CENTURY 89 (1998).

276. *Id.*

277. *Id.*

278. *Id.*

279. Dr. Kim Petry, *supra* note 204.

government considers a thoughtful process—not only a single outcome—a success.

2. Voting Equality at the Decisive Stage

Voting equality means that each citizen has an equal opportunity to express a choice that will be weighed equally against others.[280] Those choices are considered only when making formal decisions (notably, not during preceding stages).[281] Dahl notes that a citizenry may reasonably decide to weigh the interests of some person more heavily during earlier informal stages in the decision-making process.[282]

Town Meeting is illustrative because it shows the positive benefits of equalizing power dynamics in the nuclear waste decision-making process. In the mediation field, many researchers agree that if power is unequal, parties will not negotiate—"[p]arties must perceive interdependence and be constrained from acting unilaterally."[283] During Town Meeting, all citizens and participants are able to see and experience their equal power play out in real-time through the voting process.

However, Tuler and Webler warn that while voter equality may seem straightforward, numerous questions remain.[284] For example, some communities are more accustomed to operating by consensus, while others may choose majority vote.[285] This may be especially important and complex in the context of siting decisions because of the various levels of government at play. Should a municipal selectboard have the same voting power as a state agency? Do the citizens have a vote at all stages of the siting process?

The language in S. 1234 once again suggests an answer to these questions, but ultimately does not deliver. The Bill states that the siting process must be "flexible and allow decisions to be reviewed and modified in response to new information or new technical, social, or political developments."[286] The Bill is otherwise silent on *how* the siting process should include the voice or votes of relevant parties.

To address how voting equality occurs, Congress should enact the following language:

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280. DAHL, *supra* note 238, at 109.

281. *Id.* at 110.

282. *Id.*

283. J. WALTON BLACKBURN & WILLA MARIE BRUCE, MEDIATING ENVIRONMENTAL CONFLICTS: THEORY AND PRACTICE 30–31 (1995).

284. Tuler & Webler, *supra* note 235, at 99.

285. *Id.* at 100.

286. S. 1234, 116th Cong. § 304(3) (2019).

> In siting nuclear waste facilities under this Act the [implementing organization] shall employ a process that—
>
> (1) allows affected communities to decide whether, and on what terms, the affected communities will host a nuclear waste facility, wherein:
>
> . . .
>
> (C) the process is responsive to the decision-making processes of the affected levels of government in the community,
>
> (D) voting equality is endorsed and supported as reasonable and appropriate for the affected community,
>
> (E) the community is given opportunity to determine the appropriate mechanisms for registering consent and agreement at key decisional points,

That language allows the affected community to decide two important elements related to voting equality. It allows them to determine the relevant and affected entities that should have an equal vote, and when those entities should participate in the decision-making process (i.e., at which key, formal decisional points). This proposed language also interprets voting equality broadly to allow for different circumstances; it allows the community to identify the appropriate mechanisms for registering consent. In other words, a host community can decide how their voice will be heard in the siting process. Empowering the host community with this robust voting power and equality is critical to rebuilding the broken public trust in the federal government's nuclear waste management.

3. Enlightened Understanding

The enlightened understanding criterion for a democratic process is somewhat controversial—Dahl himself admits that "I think the citizens are not as well qualified as they might be."[287] People are often mistaken about the right means to an end, which could be especially true in the highly-technical nuclear waste siting context. Still, the ultimate goal is to create a "process of inquiry and learning where beliefs can be challenged, confirmed,

287. DAHL, *supra* note 238, at 111.

disconfirmed, or altered by the practical reasoning of others."[288] The learning process—not the end result—is emphasized here because that is a necessary element of rebuilding trust.

Town Meeting procedures demonstrate how enlightened understanding promotes trust and ownership in the decision-making process. For example, wise community leaders are careful to present new information in a way that is inclusive and engaging to citizen lawmakers. When community leaders "offer an elaborate Power Point presentation on the budget or darken the room for a slide show on the proposed truck purchase," it impliedly excludes citizens from a process of inquiry.[289] That format gives people "the uncomfortable impression that a decision has already been made and set in stone."[290] Instead, community leaders should present the information citizens need to make a decision, and "then let the discussion begin."[291] This is especially salient when considering the problems associated with top-down policymaking in the nuclear waste context.[292]

Related to enlightened understanding, S. 1234 provides that the siting process be "flexible and allows decisions to be reviewed and modified in response to new information."[293] It also requires that the process be "based on sound science and meets public health, safety, and environmental standards."[294] Of course these standards are necessary, but this language does not specifically mandate that the scientific information is shared with the community. The DOE's 2017 Draft Process, on the other hand, included *Informed Participation* as one of the design principles.[295] It plainly states that "[c]onsent is not meaningful unless it is informed."[296] In truth, consent is simply not consent unless it is informed.

Creating this learning environment is all the more critical because of a unique psychological characteristic of nuclear issues. People often hold strong and firm convictions about nuclear issues because the perceived risk from nuclear technology is much greater than for other problems.[297] Transparent information-sharing is therefore a key element in the dialogue;

288. Tuler & Webler, *supra* note 235, at 99.

289. CLARK & BRYAN, *supra* note 245, at 69.

290. *Id.*

291. *Id.*

292. *See supra* notes 138–54 and accompanying text (explaining how the top-down siting decision made at Yucca Mountain contributed to the NWPA's failure).

293. S. 1234, 116th Cong. § 304(3) (2019).

294. *Id.* § 304(4).

295. 2017 DOE Draft Process, *supra* note 232, at 6.

296. *Id.*

297. BLACKBURN & BRUCE, *supra* note 283, at 128.

more information is needed to adjust risk perception related to nuclear waste. Adjusting risk perception may lead towards more social acceptance.

Currently, the DOE appears to understand the importance of enlightened understanding in this context. In the meeting with the VT NDCAP, Dr. Petry answered a question about the purpose of a preliminary funding opportunity for potential host communities.[298] Dr. Petry clarified that the funds are not to find "willing host communities right out of the gate."[299] Instead, those funds are to be given to start a collaborative process to share information.[300] The first phase would be "an opportunity for communities to learn more about what it might mean to host an interim storage facility."[301] So, at least under the DOE's current approach, initial investments would be made in the community's learning process. Congress should now adopt a similar approach.

To do so, Congress should enact the following language:

> In siting nuclear waste facilities under this Act the [implementing organization] shall employ a process that—
>
> . . .
>
> (3) is flexible and allows decisions to be reviewed and modified in response to new information or new technical, social, or political developments, in a process that—
>
> (A) promotes and endorses information-sharing among the relevant parties, as reasonable and appropriate to provide for informed decision-making,
>
> (B) provides reasonable financial and technical resources to the community to enable informed decision-making, including the hiring of independent subject-matter experts,
>
> (C) allows the community to share information about the opportunities and challenges related to facility siting with the implementing organization,

298. Dr. Kim Petry, *supra* note 204.
299. *Id.*
300. *Id.*
301. *Id.*

> (D) enables additional or alternative decision-making procedures, if needed, to allow for learning or information-gathering, and
>
> (E) proceeds in a transparent manner, with respect to how decisions are made and information is shared.

By enacting this language, Congress would create a consent-based siting process by making information-sharing, learning, and discovery deliberate and accessible stages in the decision-making process. It also ensures that all parties have equal access to relevant information, and that the localities have access to resources that would allow them to hire their own independent experts. At the same time, the law should also provide for joint fact-finding, should the applicable parties decide that was proper. But overall, no procedure in the consent-based siting process is justifiable if it suppresses access to information. Doing so would increase the existing trust deficit between the public and the federal government.[302]

4. Control of the Agenda

In a democratic process, the citizenry must have the exclusive opportunity to decide which matters are on the agenda, and which of those should be democratically decided.[303] Dahl underscored that the body must be able to "effectively retrieve any matter for decision by itself."[304] Decision makers should pay attention to the way agendas are built; in a truly democratic process, participants should always have an equal opportunity to amend and finalize an agenda before final decisions are made.[305]

Being able to control the agenda also affords the necessary flexibility within a consent-based siting process—procedural flexibility in deciding matters is important for such deliberations and agreement negotiations.[306] In contrast, the excessively-prescriptive procedures built into the NWPA and its

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302. *See supra* notes 188–90 and accompanying text (explaining how the trust deficit is worsened by the current ad-hoc system of management).

303. DAHL, *supra* note 238, at 113.

304. *Id.*

305. Tuler & Webler, *supra* note 235, at 99–100.

306. GORDON MEEKS, JR., MANAGING ENVIRONMENTAL AND PUBLIC POLICY CONFLICTS: A LEGISLATORS GUIDE xii (Sharon Bjorkman ed., 1985)

> The overall consensus . . . is that no single 'best way' exists to conduct or institutionalize it. Successful negotiation depends more on the situation and the personalities involved than on the structure of the process or administrative mechanism. The institutional environment, however, can either support of hamper use of conflict management alternatives.

Id.

Amendment hurt the siting process because parties were not able to adapt the agenda based on their needs.[307] On the other hand, procedural flexibility is a well-known feature in Town Meeting. Citizens following *Robert's Rules of Order* may decide to amend the agenda at the start of the day, or raise motions to formally vote on matters discussed.[308] During the deliberative process, citizens often offer information or insights that may change the course of the conversation or potential vote. In Dover, the Town Clerk commented that "Town Meeting is a treasure, and it's not because it's quaint or it's precious as a legacy."[309] Instead, the magic comes largely from control of the agenda: "The vote is the little tiny last endpiece of the process. The process of getting to what to vote *on* is the whole thing."[310]

S. 1234 impliedly allows for control of the agenda by creating flexibility that "allows decisions to be reviewed and modified in response to new information."[311] But this language should be sharpened to explicitly include collaborative agenda-setting. Here, the IRG's policy recommendations are instructive; by proceeding in the deliberative, step-wise manner, affected communities would have ample opportunity to raise concerns or issues as they arise.[312]

With this in mind, Congress should enact the following language:

> In siting nuclear waste facilities under this Act the [implementing organization] shall employ a process that—
>
> . . .
>
> (3) is flexible and allows decisions to be reviewed and modified in response to new information or new technical, social, or political developments, in a process that—
>
> . . .

307. *See supra* notes 138–54 and accompanying text (explaining why the NWPA's excessively-prescriptive procedures for government and local interaction ultimately disserved the siting effort).

308. *See* ROBERT'S RULES OF ORDER, https://robertsrules.com (last visited Apr. 23, 2023) (providing resources and information about the procedural rules).

309. Anne Wallace Allen, *supra* note 254.

310. *Id.*

311. S. 1234, 116th Cong. § 304(3) (2019).

312. *See supra* notes 108–09, and accompanying text (highlighting the IRG's Memo, which strongly endorsed adopting a step-wise and incremental repository siting process).

> (F) considering any institutional or process limitations, reasonably allows the host community to determine which matters should be included in the decision-making process,
>
> (G) in collaboration with the implementing organization, reasonably allows the host community to decide the issues that require a binding party agreement,
>
> (H) enables the host community to determine when they may delegate decision-making authority to another entity.

With this language, Congress would allow the host community and relevant parties to control the agenda of both the individual meetings and broader phases of the siting process itself. While there should be some institutional benchmarks that may guide the process, the host community must be able to decide how and when matters are placed on the agenda. Importantly, this ability is different from being qualified to decide every question requiring a binding decision.[313] Instead, the community may also determine when they could delegate the decision to another trusted entity that would have the specialized knowledge. By proceeding in a step-wise manner and by allowing the community to control the agenda, the process naturally keeps options open for all parties; thereby rebuilding trust in the siting process.

CONCLUSION

On December 1, 2021, the DOE asked the Nation to help inform a new consent-based siting process for nuclear waste management. Presumably, the federal government will eventually be asking communities to volunteer to become host sites for the Nation's nuclear waste. Given the federal government's poor record in nuclear waste management, this is a big ask. The American public has many good reasons not to trust the government's ability to manage this program, and so any future process must be considered in the context of this mistrust.

While the DOE's current effort is admirable, it nonetheless falls short and is unlikely to make meaningful progress. To resolve the impasse, Congress needs to take bold action and amend the NWPA and its Amendment. Agency rulemaking alone cannot succeed because of the constrained legal landscape that it must operate within. Instead, Congress

313. DAHL, *supra* note 238, at 114.

needs to enact a law that abandons the top-down approach of the past and establishes a truly consent-based process for siting future nuclear waste facilities.

This Note does not discount the mammoth task ahead. Enacting this kind of legislation seems improbable and unlikely in a time characterized by polarization, divisiveness, and adversarial democracy.[314] The political divisiveness compounds with a lack of trust between Americans and their government. In 2019, 84% of surveyed Americans said that "the level of confidence Americans have in the federal government can be improved."[315]

So, how realistic is congressional action here? It seems doubtful that lawmakers will agree on the proposed language, given how radically it departs from the legal and theoretical status quo. Lawmakers may also deny that an antiquated annual caucus in Vermont is a worthwhile example of a modern consent-based process for siting nuclear waste facilities in the Nation.

This Note's siting proposal based in traditional Town Meeting may be blue-sky thinking, but there's reason for hope. Some surveyed Americans believe that "their neighborhoods are a key place where interpersonal trust can be rebuilt if people work together on local projects, in turn radiating trust out to other sectors of the culture."[316] An authentic consent-based siting process, one that embodies the fundamental principles of democracy, can be the mechanism that builds trust within a community that can then inspire a more productive partnership with the federal government. At least a few of us, perhaps in Vermont and beyond, believe this is possible.

Anyway, is blue-sky thinking so wrong in this case? Considering the faulty NWPA, continued failed efforts by the DOE, political challenges, and broken trust, what may seem like the radically naïve nuclear option may be the best way forward. At least, what other option do we have?

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314. *See generally Political Polarization*, PEW RSCH. CTR., https://www.pewresearch.org/topic/politics-policy/political-parties-polarization/political-polarization/ (last visited Apr. 23, 2023) (highlighting different studies of deep political divisions).

315. Lee Rainie et al., *Trust and Distrust in Government*, PEW RSCH. CTR. (July 22, 2019), https://www.pewresearch.org/politics/2019/07/22/trust-and-distrust-in-america/.

316. *Id.*