

SWORDS INTO PLOWSHARES: NUCLEAR POWER AND THE ATOMIC ENERGY ACT'S PREEMPTIVE SCOPE IN *VIRGINIA URANIUM, INC. V. WARREN*

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I. INTRODUCTION

The dispute in *Virginia Uranium, Inc. v. Warren*¹ is over six billion years in the making: as the Earth formed from a cloud of matter produced in the aftermath of a supernova, uranium settled in the Earth's mantle, eventually migrated toward the surface, and formed concentrations in the Earth's crust.² One particularly massive concentration came to rest just beneath the surface of the Coles Hill estate in Pittsylvania County, Virginia.³ Shortly after the discovery of this deposit in the late 1970s, the Virginia General Assembly enacted a ban on uranium mining within its borders.⁴ Petitioners, who own the deposit, argue that Virginia's ban is preempted by the Atomic Energy Act ("AEA"),⁵ which reserves to the federal government the power to regulate public safety relating to radioactive materials.⁶ Respondents, the Commonwealth of Virginia, contend that the AEA

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2. See *The Cosmic Origins of Uranium*, WORLD NUCLEAR ASSOCIATION, <http://www.world-nuclear.org/information-library/nuclear-fuel-cycle/uranium-resources/the-cosmic-origins-of-uranium.aspx> (last visited Nov. 24, 2018).

3. See Joint Appendix at 39, *Va. Uranium, Inc. v. Warren*, No. 16-1275, 2018 WL 3546785 (Jul. 19, 2018) [hereinafter Joint Appendix] ("Virginia Uranium, Inc. . . . wants to mine the 119-million pound deposit of the radioactive ore in Pittsylvania County").

4. See Va. Code Ann. § 45.1-283.

5. Atomic Energy Act of 1946, Pub. L. No. 79-585, 60 Stat. 755.

6. See Brief for Petitioners at 11, *Va. Uranium, Inc. v. Warren*, No. 16-1275, 2018 WL 3546327 (Jul. 19, 2018) [hereinafter Brief for Petitioners].

does not preempt the ban, and that Virginia’s moratorium is permissible under current Supreme Court precedent.⁷

The Fourth Circuit Court of Appeals’ analysis of the AEA’s preemptive effect in *Virginia Uranium* relied on interpreting the meaning of “activities” in 42 U.S.C. § 2021(k).⁸ Concluding that uranium mining is not an “activit[y]” within the meaning of the statute, the panel upheld Virginia’s ban.⁹ In doing so, however, the panel overlooked Congress’s vital instruction, conveyed by the plain language of § 2021(k), that courts conduct a purposive inquiry into *why* a state may be regulating these “activities.”¹⁰

This commentary highlights the considerations the Supreme Court should attend to in construing § 2021(k), and in reviewing the Fourth Circuit’s reading of precedent from other circuits and from the Court’s prior opinions. Specifically, the Court must clarify how to interpret § 2021(k)’s activities component in concert with its “for purposes” language and determine the importance of the particular underlying activity the state seeks to regulate in a preemption analysis under the AEA. Clarification is necessary to ensure that courts properly effectuate Congress’s intent in regulating nuclear power, an important regulatory realm that implicates economic growth, technological development, and foreign policy.

II. FACTUAL BACKGROUND

Uranium ore is the primary source of fuel for nuclear power plants.¹¹ Conventional uranium mining involves three processes.¹² First, uranium ore is extracted from its natural source.¹³ Second, the ore is milled into usable form in a process that separates the uranium from the waste rock, or “tailings.”¹⁴ Third, the uranium is concentrated

7. See Brief for Respondents at 1–3, *Va. Uranium, Inc. v. Warren*, No. 16-1275, 2018 WL 4105540 (Aug. 27, 2018) [hereinafter Brief for Respondents].

8. See *Va. Uranium, Inc. v. Warren*, 848 F.3d 590, 595–97 (4th Cir. 2017).

9. See *id.*

10. See *id.* at 608 (Traxler, J. dissenting).

11. See *id.* at 593.

12. See Brief for Petitioners, *supra* note 6, at 9.

13. See *id.*

14. *Id.*

into “yellowcake”¹⁵ and sold to be enriched, while the tailings, which remain radioactive, are stored in a secure facility.¹⁶

Virginia Uranium, Inc. owns the largest natural deposit of uranium ore in the United States.¹⁷ Shortly after the discovery of the uranium deposit in Coles Hill, the Virginia General Assembly called for the state Coal and Energy Commission to “evaluate the environmental effects . . . and any possible detriments to the health, safety, and welfare of Virginia citizens which may result from uranium exploration, mining or milling.”¹⁸ Before the Commission reported its findings, the Assembly imposed a moratorium on uranium mining pending the creation of a statutory regime to govern the issuance of uranium mining permits.¹⁹ After a two-year inquiry, the Commission released its report and recommended lifting the ban.²⁰ Sixteen of the eighteen members of the Commission endorsed the report, while two members dissented.²¹ Despite the Commission’s findings that the benefits of mining uranium in Virginia “outweighed the costs 26 to 1,” the Assembly opted not to lift the moratorium.²²

Over the next twenty years, uranium prices fell significantly and Virginia Uranium did not pursue plans to further develop the Coles Hill deposit.²³ Lawmakers began reconsidering the mining ban in the mid-2000s,²⁴ and a bill was sponsored in 2013 to develop a licensing scheme for issuing uranium mining permits.²⁵ That bill was withdrawn without a vote; the moratorium remains in effect.²⁶

In 2015, Virginia Uranium sued the Commonwealth’s officers in the Western District of Virginia and sought a declaration that the ban was preempted by federal law and an injunction requiring the

15. Yellowcake consists of the concentrated and dried uranium product that is sold commercially and shipped to enrichment facilities. *See Va. Uranium*, 848 F.3d at 601 (Traxler, J. dissenting).

16. *See* Brief for Petitioners, *supra* note 6, at 9.

17. *See id.* at 8.

18. *Va. Uranium*, 848 F.3d at 593 (quoting 1981 Va. Acts. 1404).

19. *See Va. Uranium*, 848 F.3d at 593.

20. *See* Brief for Petitioners, *supra* note 6, at 17.

21. *See id.* at 17–18 (explaining that “radiological safety concerns raised by tailings management operations” formed the basis of the dissenters’ opposition).

22. *Va. Uranium*, 848 F.3d at 593 (referring to finding in Joint Appendix, *supra* note 3, at 133).

23. *See* Brief for Petitioners, *supra* note 6, at 17.

24. *See id.*

25. *See Va. Uranium*, 848 F.3d at 593.

26. *See id.*

Commonwealth to issue uranium mining permits.²⁷ The Commonwealth moved to dismiss the complaint and Virginia Uranium moved for summary judgment.²⁸ The district court granted Virginia's motion to dismiss,²⁹ a divided panel of the Fourth Circuit affirmed,³⁰ and the Supreme Court granted certiorari.³¹

III. LEGAL BACKGROUND

The issue presented in *Virginia Uranium* implicates the constitutional doctrine of preemption, the federal regulatory framework governing atomic energy, and a line of cases applying preemption principles to that framework. The specific statutory provision at issue is 42 U.S.C. § 2021(k), which reads, “Nothing in this section shall be construed to affect the authority of any State or local agency to regulate activities for purposes other than protection against radiation hazards.”³² The provision's express recognition of state authority permits the negative inference that states are preempted from regulating activities to “protect[] against radiation hazards.” In the past, the Court has read this provision to preempt states from regulating nuclear activities for radiological safety purposes while permitting states to regulate activities for non-safety reasons such as “need, reliability, cost, and other state-related concerns.”³³

The crux of the issue is that Virginia contends that its ban regulates uranium mining, which is not an activity within the meaning of the AEA. Virginia Uranium argues, however, that this regulation of mining, which it concedes falls within the traditional state police powers, is really a veiled regulation of milling and tailings management (two activities under the AEA) for radiological safety purposes and is therefore preempted.

27. *See id.* at 594.

28. *See id.*

29. *Va. Uranium, Inc. v. McAuliffe*, 147 F. Supp. 3d 462, 471 (W.D. Va. 2015) (finding that the Atomic Energy Act does not govern conventional mining of nonfederal uranium deposits and concluding that the Virginia statute imposing the moratorium is not preempted).

30. *See Va. Uranium*, 848 F.3d at 599.

31. *See Va. Uranium, Inc. v. Warren*, 138 S. Ct. 2023 (May 21, 2018) (No. 16-1275).

32. 42 U.S.C. § 2021(k) (2012) (emphasis added).

33. *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n*, 461 U.S. 190, 204 (1983).

A. *The Preemption Doctrine*

The preemption doctrine is rooted in the Supremacy Clause,³⁴ which dictates that when both federal and state law bear on one particular regulatory realm, or stand in conflict with one another, federal law preempts and invalidates the state law. Congress may either explicitly preempt state law through express statutory language or may do so implicitly.³⁵ In determining whether state law is preempted absent explicit statutory language, the primary inquiry is “whether Congress intended to displace state law”³⁶

State law may be implicitly preempted when it impinges on a “scheme of federal regulation so pervasive as to make reasonable the inference that Congress left no room to supplement it.”³⁷ This is known as field preemption.³⁸ State law may also be preempted where it stands in conflict with a federal regulation such that it imposes “an obstacle to the accomplishment and execution of the full purposes and objectives of Congress,”³⁹ or when “compliance with both federal and state regulations is a physical impossibility.”⁴⁰

B. *The Atomic Energy Act*

The development and history of the Atomic Energy Act evinces an incremental shifting of control over nuclear technology away from the United States military and towards private industry. The first version of the AEA was enacted a year after the end of World War II in 1946.⁴¹ The 1946 version of the AEA granted control of nuclear technology, previously held exclusively by the United States Army, to the federal government,⁴² and empowered the Atomic Energy Commission (now known as the Nuclear Regulatory Commission, or NRC) to issue licenses to non-federal parties seeking to transfer or deal in uranium.⁴³ In 1954, Congress amended the AEA to permit

34. U.S. CONST. art. VI, cl. 2 (“This Constitution, and the Laws of the United States which shall be made in Pursuance thereof . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.”).

35. *See Oneok, Inc. v. Learjet, Inc.*, 135 S. Ct. 1591, 1595 (2015).

36. *Wardair Canada, Inc. v. Fla. Dep’t of Revenue*, 477 U.S. 1, 6 (1986).

37. *Pacific Gas*, 461 U.S. at 203–04.

38. *Id.* at 204.

39. *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941).

40. *Fla. Lime & Avocado Growers, Inc. v. Paul*, 373 U.S. 132, 142–43 (1963).

41. *See* Pub. L. No. 79-585, 60 Stat. 755 (1946).

42. *See* Brief for Respondents, *supra* note 7, at 6.

43. *See id.*

“licensing of private construction, ownership, and operation of commercial nuclear power reactors . . . under strict supervision by the . . . Commission.”⁴⁴ Under the 1954 version of the AEA, the Commission retained its exclusive licensing authority over “the transfer, delivery, receipt, acquisition, possession, and use of nuclear materials.”⁴⁵ These activities take place *after* uranium is mined.

In 1959, Congress further amended the AEA to grant states a greater role in the development of nuclear power.⁴⁶ The provisions, now codified at 42 U.S.C. § 2021, facilitated regulatory cooperation between states and the NRC; the NRC retained “exclusive authority to license the . . . use of all nuclear materials.”⁴⁷ Under the 1959 version of the AEA, the NRC was permitted to enter into agreements with state executives “for the protection of the public health and safety from radiation hazards,”⁴⁸ only after ensuring that the state’s program is “compatible”⁴⁹ with federal regulations and “adequate to protect the public health and safety.”⁵⁰

Although, in the first stage of uranium production, mining, the NRC maintains only limited authority,⁵¹ the NRC has “exclusive jurisdiction” over the later stages, milling and tailings management.⁵² Under its exclusive jurisdiction, the NRC has extensively regulated milling and tailings management to protect public health and safety.⁵³ These types of regulations would be preempted if a state attempted to impose them because the NRC has sole jurisdiction over radiological safety concerns in connection with nuclear activities. The provision at issue in *Virginia Uranium* makes clear that “State[s] or local agenc[ies]” may “regulate *activities* for purposes other than protection against radiation hazards.”⁵⁴ Therefore, in order to reach such activities, a state must be regulating for purposes other than

44. *Duke Power Co. v. Carolina Env'tl. Study Grp.*, 438 U.S. 59, 63 (1978).

45. *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n*, 461 U.S. 190, 207 (1983).

46. *See id.* at 208–209.

47. *English v. Gen. Elec. Co.*, 496 U.S. 72, 81 (1990).

48. 42 U.S.C. § 2021(b) (2012).

49. 42 U.S.C. § 2021(d)(2) (2012).

50. *Id.*

51. *See Va. Uranium, Inc. v. Warren*, 848 F.3d 590, 595–97 (4th Cir. 2017).

52. Brief for Petitioners, *supra* note 6, at 12 (interpreting provisions such as 42 U.S.C. §§ 2097 and 2092 that empower the NRC to regulate uranium mining on *federal* lands and processes occurring “after [uranium’s] removal from its place of deposit in nature,” respectively).

53. *See id.* at 13 (citing 10 C.F.R. Pt. 40, App. A.).

54. 42 U.S.C. § 2021(k) (2012).

protection against radiation hazards. Such purposes could include economic justifications, costs, and quality of utility power production.

C. *Pacific Gas and Its Progeny*

In *Pacific Gas & Electric Co. v. State Energy Res. Conservation & Dev. Comm'n*,⁵⁵ the Supreme Court applied its preemption analysis to a California regulatory scheme governing the construction of new power plants in the state.⁵⁶ The regulatory scheme authorized California's energy commission to determine whether utilities seeking to build new nuclear power plants had adequate storage capacity for spent fuel rods.⁵⁷ A unanimous Court held that as "the federal government has occupied the entire field of nuclear concerns," the preemption test was "whether 'the matter on which the state asserts the right to act is in any way regulated by the federal government.'"⁵⁸ The Court reasoned that a state ban on "nuclear construction for safety reasons would . . . be in the teeth of the Atomic Energy Act's objective to insure that nuclear technology be safe enough for widespread development and use—and would be preempted for that reason."⁵⁹ Ultimately, the Court upheld California's regulatory scheme because it held that the scheme was adopted for economic reasons and not for radiological safety purposes.⁶⁰

The Court revisited the AEA's preemptive scope in *Silkwood v. Kerr-McGee Corp.*⁶¹ and *English v. General Electric Co.*⁶² *Silkwood* and *English* both presented AEA preemption theories regarding state tort law and the Court clarified the central holding of *Pacific Gas* on both occasions. In *Silkwood*, the Court asserted that "the federal government has occupied the entire field of nuclear safety concerns,"⁶³ and held that federal law did not preempt a state-law "award of punitive damages arising out of the escape of plutonium from a federally-licensed nuclear facility."⁶⁴ In *English*, the Court held that the state law in question was "not motivated by safety

55. 461 U.S. 190 (1983).

56. *See id.* at 197.

57. *See id.*

58. *Id.* at 212–13 (quoting *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 236 (1947)).

59. *Id.* at 213.

60. *See id.* at 222.

61. 464 U.S. 238 (1984).

62. 496 U.S. 72 (1990).

63. *Silkwood*, 464 U.S. at 249.

64. *Id.* at 241.

concerns.”⁶⁵ The state law did not have a “*direct and substantial effect* on the decisions by those who build or operate safety facilities concerning radiological safety levels.”⁶⁶ Therefore, it was not preempted.

Several circuit courts have interpreted and applied the *Pacific Gas* line of cases, and the purposes for which a state regulated nuclear power often dictate the outcome.⁶⁷ In this case, however, the Fourth Circuit declined to conduct the purposive inquiry and instead focused solely on the activity, conventional uranium mining, that the Virginia ban regulates.

IV. HOLDING

A divided panel of the Fourth Circuit construed the AEA provision at issue, considered the holdings of *Pacific Gas*, *Silkwood*, and *English*, distinguished persuasive authority from other circuits, and rejected Virginia Uranium’s assertion that the Commonwealth’s ban is preempted on three grounds. First, the majority held that because the NRC reasonably interprets the AEA to preclude the NRC’s regulation of conventional uranium mining on non-federal land, and because the power to regulate mining has traditionally been reserved to the states, conventional uranium mining is not an “activit[y]” under § 2021(k).⁶⁸ Further, notwithstanding the NRC’s admission that milling and tailings storage are “activities” under § 2021(k), the panel rejected the argument that the moratorium is

65. *English*, 496 U.S. at 84.

66. *Id.* at 85 (emphasis added).

67. See Brief for Petitioners, *supra* note 6, at 48–51, citing, *inter alia*, *Skull Valley Band of Goshute Indians v. Nielson*, 376 F.3d 1223, 1247–48 (10th Cir. 2004) (preempting a state law because the pretextual purpose for the regulatory scheme was grounded in safety concerns); *Entergy Nuclear Vt. Yankee, LLC v. Shumlin*, 733 F.3d 393, 403 (2d Cir. 2013) (preempting the measure because it was motivated by safety notwithstanding the legislature’s codified purpose of furthering the “larger societal discussion of broader economic and environmental issues”); *Ill. v. Gen. Elec. Co.*, 683 F.2d 206, 214–16 (7th Cir. 1982) (preempting Illinois law for interfering with the “federal atomic energy program” notwithstanding the residual authority granted to states under the Clean Air Act); *United States v. Ky.*, 252 F.3d 816, 823 (6th Cir. 2001) (preempting Kentucky’s attempt to regulate nuclear waste storage because the measure was based on health and safety concerns); *United States v. Manning*, 527 F.3d 828, 837–39 (9th Cir. 2008) (preempting a ballot initiative preventing storage of additional radioactive waste “to protect the health and safety of Washington residents and the environment”); *Jersey Cent. Power & Light Co. v. Lacey Twp.*, 772 F.2d 1103, 1112 (3d Cir. 1985) (preempting a local ordinance banning the importation of radioactive waste); *Abraham v. Hodges*, 255 F. Supp. 2d 539, 553 (D.S.C. 2002) (preempting a state executive order “prohibiting the transportation of plutonium within South Carolina”).

68. *Va. Uranium, Inc. v. Warren*, 848 F.3d 590, 594 (4th Cir. 2017).

preempted because its *effect* is to regulate milling and tailings storage out of safety concerns. In doing so, the Fourth Circuit reasoned that the “mining ban does not purport to regulate an activity within the [AEA]’s reach, and thus we need proceed no further.”⁶⁹ Finally, the Fourth Circuit rejected Virginia Uranium’s argument that the Commonwealth’s ban “stands as an obstacle” to Congress’s objectives with the AEA,⁷⁰ and affirmed the district court’s judgment in favor of the Commonwealth.

V. ARGUMENTS

A. *Petitioners’ Arguments*

Virginia Uranium’s primary argument is that the field preempted by the AEA is partially “defined...by reference to the motivation behind the state law” at issue.⁷¹ Petitioners contend that the preemptive scope of the AEA is defined by § 2021.⁷² Under 42 U.S.C. § 2021(b), states may obtain “authority to regulate the materials covered by the agreement for the protection of the public health and safety from radiation hazards.”⁷³ When there is no agreement to grant the states such authority, states are limited by 42 U.S.C. § 2021(k), which permits states “to regulate activities for purposes other than protection against radiation hazards.”⁷⁴ Because the Court held in *Pacific Gas* that when a state enacts a law grounded in radioactive safety concerns it “falls squarely within the prohibited field,” and because the ban is “motivated by the purpose of protecting against the radiological hazards of uranium milling and the storage of uranium tailings,”⁷⁵ the petitioners argue that the Commonwealth’s uranium mining ban is preempted.⁷⁶

Petitioners advance, furthermore, that the preemptive scope of the AEA is defined not only by the “activities” regulated by the NRC, but also by the purpose of the state law in question.⁷⁷ The Court in *Pacific Gas* gave effect to the entire text of § 2021(k) and scrutinized the

69. *Id.* at 598–99.

70. *Id.* at 599 (quoting *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941)).

71. Brief for Petitioners, *supra* note 6, at 27 (quoting *English*, 496 U.S. at 84).

72. *See id.*

73. 42 U.S.C. § 2021(b) (2012).

74. 42 U.S.C. § 2021(k) (2012).

75. *Id.* at 39.

76. *See id.* at 33.

77. *See id.* at 35.

activities that states may regulate under the AEA and the “*purposes* they may pursue when enacting regulations of *any* activity.”⁷⁸ Crucially, petitioners argue, the Court in *Pacific Gas* scrutinized the specific activity that California was regulating and “*why* the state was regulating it.”⁷⁹ According to petitioners, if the Commonwealth’s purpose was to regulate safety, as it conceded for the purpose of its motion to dismiss, then its moratorium intrudes on the preempted field notwithstanding its facial reference to an activity outside the NRC’s jurisdiction.⁸⁰

Petitioners also argue, based on *Arizona v. United States*,⁸¹ that the Commonwealth’s ban should be preempted because it stands as an obstacle to a comprehensive federal regulatory scheme.⁸² In *Arizona*, the state’s regulation was preempted for frustrating the purposes of federal immigration policy.⁸³ Here, the Commonwealth’s ban may similarly frustrate Congress’s purpose: Congress, by enacting and amending the AEA, has evinced its desire to “encourage the private development and use of uranium.”⁸⁴ Permitting one of the fifty states to ban uranium mining may not significantly upset Congress’s interest, petitioners claim, but if all fifty states enact similar bans, the states could collectively stymie Congress’s nuclear power policy goals.⁸⁵

Finally, petitioners contend that the Fourth Circuit’s approach frustrates the AEA’s chief purpose: promoting the productive use of nuclear power.⁸⁶ The Fourth Circuit’s approach enables state and local governments to impede the development of nuclear technology out of parochial safety concerns not shared by NRC experts.⁸⁷ Petitioners cite several circuit court decisions where state legislatures enacted carefully worded statutes (properly held to be preempted) that hindered the state-level development of nuclear power and were designed to disguise the state’s true purpose: regulating radiological safety.⁸⁸ If upheld, Virginia’s mining ban offers a roadmap for states

78. *Id.*

79. *Id.* at 36.

80. *Id.* at 40.

81. 567 U.S. 387, 401–402 (2012).

82. Brief for Petitioners, *supra* note 6, at 56–57.

83. *Arizona*, 567 U.S. at 402–403.

84. Brief for Petitioners, *supra* note 6, at 56–57.

85. *See id.* at 56–57.

86. *See id.* at 54.

87. *See id.* at 46–47.

88. *See id.* at 48–51, citing, e.g., *Skull Valley Band of Goshute Indians v. Nielson*, 376 F.3d 1223, 1247–48 (10th Cir. 2004) (preempting a state law because the pretextual purpose for the

seeking to regulate nuclear power for radiological safety purposes.⁸⁹ States can regulate activities within their purview that are upstream of activities regulated by the NRC, and in doing so can evade preemption so long as the measures they enact avoid mentioning the downstream, preempted activities. This bad legal consequence, according to petitioners, is also accompanied by grave practical risks.⁹⁰

B. Respondents' Arguments

The Commonwealth of Virginia maintains that its moratorium on uranium mining is not preempted because the AEA itself “does not begin to regulate uranium until ‘after its removal from its place of deposit in nature.’”⁹¹ Further, respondents contend that § 2021(k) does not preempt the ban or any other state activity, but rather cautions courts *not* to presume that state activities are preempted.⁹² They urge that this construction aligns with the legislative purpose of the 1959 AEA amendment, which focused on *enhancing* state regulatory authority over nuclear technology, rather than restricting it.⁹³ Likewise, respondents charge petitioners with omitting key language from *Pacific Gas* and *English* that indicates a preemptive scope limited to state laws that venture into health and safety in the context of “nuclear construction,” which “has always been a matter of intense federal concern and regulation.”⁹⁴ Respondents insist that the same cannot be said of uranium mining.⁹⁵

Respondents also argue that petitioners erroneously rely on respondents’ concession at the motion to dismiss stage that the moratorium was imposed out of concern for radiological safety.⁹⁶ If the Commonwealth did not in fact concede such a purpose,

regulatory scheme was grounded in safety concerns); *Entergy Nuclear Vt. Yankee, LLC v. Shumlin*, 733 F.3d 393, 403 (2d Cir. 2013) (preempting a measure on after finding it was motivated by radiological safety notwithstanding the state’s assurances that it was motivated instead by the “larger societal discussion of broader economic and environmental issues”).

89. *See id.* at 54–59.

90. *See id.* at 53–54. Petitioners warn that hindering the United States nuclear industry will force continued reliance on foreign sources, including “Russia and its client states” that currently supply nearly forty percent of the nation’s uranium.

91. Brief for Respondents, *supra* note 7, at 16 (quoting 42 U.S.C. § 2092 (2012)).

92. *See id.* at 23–26.

93. *See id.*

94. *Id.* at 28.

95. *Id.* at 29.

96. *See id.* at 36–37 (noting that respondents “are aware of no decision of this Court treating the identification of that ‘purpose’ [of a given law] as a matter of historical fact under Federal Rule of Civil Procedure 12(b)(6)”).

respondents argue, the Court is left with the tenuous task of discerning legislative intent. The Commonwealth warns of the “intractable problems”⁹⁷ introduced when courts assume that the purpose of a law is the same as the “subjective intentions of the state legislature.”⁹⁸ In sum, respondents contend that petitioners’ reading of § 2021(k)’s “for the purposes of” language is not quite as convincing as petitioners maintain.

Finally, respondents dismiss petitioners’ obstacle preemption argument rooted in *Arizona v. United States*.⁹⁹ Respondents reason that because the Court in *Arizona* confronted a “comprehensive federal scheme”¹⁰⁰ that regulated an activity that the state also sought to regulate, the state’s scheme stood as a direct obstacle to Congress’s objectives. Here, because the Commonwealth regulates uranium mining and the AEA has never regulated the same activity, the moratorium presents no obstacle to fulfilling Congress’s objectives.¹⁰¹ Respondents conjecture that a ruling in favor of Virginia Uranium would require the Court to decide that Congress implicitly and silently preempted all state authority in the realm of uranium mining, contrary to the principle that courts should infer that the historic police powers¹⁰² are “not to be superseded.”¹⁰³ Such a ruling would render uranium mining, which the NRC does not regulate under federal law, also unreachable by state regulation.¹⁰⁴ That construction, the Fourth Circuit quipped, “cannot be the law.”¹⁰⁵

97. *Id.* at 38.

98. *Id.* at 38–39 (quoting *Shady Grove Orthopedic Assocs., P.A. v. Allstate Ins. Co.*, 559 U.S. 393, 404 (2010) and summarizing the issues it raises: (1) there could be different outcomes for different states imposing identical laws; (2) many laws further more than one particular purpose; and (3) obtaining definitive proof of motive for a collective legislative body is particularly difficult).

99. 567 U.S. 387 (2012).

100. *Id.* at 406 (quoting *Puerto Rico Dep’t of Consumer Affairs v. Isla Petroleum Corp.*, 485 U.S. 495, 503 (1988)).

101. Brief for Respondents, *supra* note 7, at 51.

102. *Barnes v. Glen Theatre, Inc.*, 501 U.S. 560, 569 (1991) (“The traditional police power of the States is defined as the authority to provide for the public health, safety, and morals, and we have upheld such a basis for legislation.”); *Pa. Coal Co. v. Mahon*, 260 U.S. 393, 419–20 (1922) (Brandeis, J. dissenting) (generally characterizing a state’s regulation of mining operations as an “exercise of the police power”).

103. *Wyeth v. Levine*, 555 U.S. 555, 565 (2009) (quoting *Medtronic, Inc. v. Lohr*, 518 U.S. 470, 485 (1996)).

104. See Brief for Respondents, *supra* note 7, at 52.

105. *Va. Uranium, Inc. v. Warren*, 848 F.3d 590, 597 (4th Cir. 2017).

VI. ANALYSIS

A. *The Fourth Circuit Inadequately Addressed the Purposive Language of 42 U.S.C. § 2021(k)*

The Fourth Circuit potentially erred in its treatment of 42 U.S.C. § 2021(k) when it failed to give effect to the provision’s purposive language¹⁰⁶ and departed from the approaches pursued by other circuit courts.¹⁰⁷ The problem with this approach is not so much that it avoids the fool’s errand of inquiring into legislative purpose,¹⁰⁸ but that it disregards Congress’s plain instruction that states may only “regulate activities *for purposes other than* protection against radiation hazards.”¹⁰⁹ The Fourth Circuit properly discerned that conventional uranium mining is not an “activit[y],” but it did not finish the analysis: if an activity, unregulated by the NRC, is regulated by the state “for purposes other than” radiological safety, the inquiry ends.¹¹⁰ When the state’s purpose, however, is to regulate radiological safety in the management of milling and tailings storage (two activities that are regulated by the NRC), the state law may be within the prohibited field, and thus preempted.¹¹¹

At oral argument before the Fourth Circuit, petitioners used an analogy to convey the problem posed by the Commonwealth’s approach to impermissibly regulating activities that actually *are* under the purview of the NRC.¹¹² In prohibiting mining, an upstream activity, the Commonwealth has imposed a veiled regulation of downstream

106. *See id.* at 598 (“[W]e decline to examine why the Commonwealth chose to ban uranium mining, which it was plainly allowed to do.”).

107. *See id.* at 609 (Traxler, J. dissenting) (“Until today, each Court of Appeals addressing the issue since *Pacific Gas* has held that state statutes enacted to protect against the radiological dangers of activities the AEA regulates are preempted regardless of whether the statutory text reveals that purpose and regardless of whether the statute expressly prohibits [it].”); *see also supra* note 67.

108. *Shady Grove Orthopedic Assocs., P.A. v. Allstate Ins. Co.*, 559 U.S. 393, 404 (2010) (“[D]etermining whether state and federal rules conflict based on the subjective intentions of the state legislature is an enterprise destined to produce ‘confusion worse confounded.’” (quoting *Sibbach v. Wilson & Co.*, 312 U.S. 1, 14 (1941))).

109. 42 U.S.C. § 2021(k) (2012) (emphasis added).

110. *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm’n*, 461 U.S. 190, 199 (1983) (quoting 42 U.S.C. § 2021(k)).

111. *See id.*; *see also English v. General Elec. Co.*, 496 U.S. 72, 84 (1990).

112. *See Oral Argument at 9:53, Va. Uranium, Inc. v. Warren*, 848 F.3d 590 (4th Cir. 2017), <http://www.ca4.uscourts.gov/OAarchive/mp3/16-1005-20161028.mp3>. In the analogy, the father permits his son to borrow the car, but not the keys. The rationale behind the father’s policy is not that the keys are dangerous, but that the car is. His policy is facially about the keys, but its purpose and effect are to regulate his son’s use of the car out of safety concerns.

activities: milling and tailings management. The statute here refers to a ban on uranium mining, which is a prerequisite to the milling and tailings management that the state is preempted from regulating out of safety concerns. The court, however, refused to address the purposive language, allowing the state to find a clever way to regulate within the preempted field in a facially neutral way.¹¹³ But because Congress reached these scenarios with the purposive language in § 2021(k), the panel flouted Congress’s plain instruction by ending the preemption analysis once it decided that the regulated conduct was not an activity covered by the statute.¹¹⁴

Were the Supreme Court to affirm the Fourth Circuit’s judgment without deciding how the “activities” element balances with the “for purposes” element of the provision, it would do damage to the AEA and the entire federal regulatory scheme governing nuclear technology. The Court should clarify when, under the *Pacific Gas* approach, courts are to conduct the purposive inquiry, and, if it rules in favor of Virginia Uranium, it should remand for findings as to the Commonwealth’s true purpose behind the moratorium.¹¹⁵

The advocates grappled with these issues at oral argument before the Supreme Court, where the federal government joined petitioners as amicus curiae.¹¹⁶ The justices were particularly concerned about the proper test that would apply if it held that courts are to conduct a purposive inquiry under § 2021(k).¹¹⁷ The federal government argued that where the state provides “a plausible non-safety rationale and

113. See Brief of Nuclear Energy Institute as Amicus Curiae supporting Petitioners at 17, Va. Uranium, Inc. v. Warren, No. 16-1275, 2018 WL 3599465 (Jul. 26, 2018) (“A ban targeting the radiological risks of those activities interferes with the exclusive authority of the federal government and achieves something indirectly that a state could not do directly. Such a result turns preemption on its head, allowing a state to purposefully regulate radiological risks and short circuit federal regulation so long as the state does not mention safety in the language of the law.”).

114. *Pacific Gas*, 461 U.S. at 203 (finding that the California provision involving an “activit[y]” governed by the AEA was not ripe for review, yet still applying the full § 2021(k) analysis to the provision covering conduct *not* subject to NRC jurisdiction); see also Brief of United States as Amicus Curiae supporting Petitioners, Va. Uranium, Inc. v. Warren, No. 16-1275, 2018 WL 3599466 (Jul. 26, 2018).

115. This would allay the Commonwealth’s concerns, mentioned *supra* note 96, that petitioners assume too much about what the Commonwealth has conceded in this case.

116. See Adam Liptak, *Justices Seem to Support Virginia’s Uranium Mining Ban*, N.Y. TIMES (Nov. 5, 2018), <https://www.nytimes.com/2018/11/05/us/politics/supreme-court-virginia-uranium-mining.html>. Charles Cooper argued for petitioners and was joined by Solicitor General Noel Francisco, who argued for the federal government as amicus curiae.

117. See Oral Argument at 9:40, Va. Uranium, Inc. v. Warren, 138 S. Ct. 2023 (May 21, 2018) (No. 16-1275), <https://www.oyez.org/cases/2018/16-1275> [hereinafter, Oral Argument].

that rationale is not otherwise foreclosed by the text, legislative history, and historical context” of the legislative enactment, the state can permissibly regulate under § 2021(k).¹¹⁸ Alternatively, petitioners’ original appellate counsel advocated for a less deferential, actual-purpose standard.¹¹⁹ Proposing two varying degrees of inquiry was perhaps strategic on petitioners’ part: if the Court wants to avoid requiring lower courts to engage in the tenuous process of discerning legislative purpose that petitioners advanced, it can instead choose the more deferential standard proposed by the federal government.

Given that the Commonwealth arguably conceded its true motivation was radiological safety in milling and tailings management, petitioners could prevail under an actual motivation standard under an approach similar to *Arlington Heights*.¹²⁰ The justices, however, were highly skeptical of any approach requiring an expansive inquiry into legislative purpose,¹²¹ and seemed inclined to hold for respondents by determining that the purposive aspect of the provision does not apply unless the activity, as a threshold matter, is one governed by the NRC.¹²²

B. *The Fourth Circuit Unconvincingly Distinguished Entergy and Skull Valley from Virginia Uranium*

Notwithstanding the problems with discerning legislative purpose, the majority of circuit court opinions favor the petitioners,¹²³ and the Fourth Circuit inadequately distinguished *Skull Valley* and *Entergy* without addressing the other decisions.¹²⁴ In *Skull Valley*, the Tenth

118. *Id.* at 21:31.

119. *See id.* at 58:10 (“Is the purpose for the protection against radiological hazards? That’s what Congress wants you to decide. And not just is it any plausible purpose . . .”). *See also* *Washington v. Davis*, 426 U.S. 229, 247 (1976); *Vill. of Arlington Heights v. Metro. Hous. Dev. Corp.*, 429 U.S. 252, 270–71 (1977). The *Davis* and *Arlington Heights* line of cases instructs that when plaintiffs can establish that a prohibited purpose behind an enactment is the motivating factor, then the burden shifts to the state actor to prove that the measure would have been enacted even in the absence of the motivating factor.

120. *See* 429 U.S. at 270–71.

121. *See* Oral Argument, *supra* note 117, at 9:38 (Sotomayor, J. asked, “Is this going to require deposing every single legislative member?”).

122. *See id.* at 10:45 (Kagan, J. asked, “But you would concede, Mr. Cooper, that two states with exactly the same statutes, it could come out different ways because the legislative history was different in the two states?”); *id.* at 9:48 (Sotomayor, J. asked, “Because what do you look at? In a lot of these things, people just vote. They don’t say why. Or they do what one of my colleagues suggested, they give mixed motives. This is an odd way to read a preemption statute.”).

123. *See supra* note 67.

124. *See Va. Uranium*, 848 F.3d at 598–99.

Circuit defined the AEA's preemptive scope in relation to several Utah statutes, including one that governed access to a road near a nuclear facility.¹²⁵ Controlling road access in proximity to nuclear facilities does not directly interfere with any activity governed by the AEA.¹²⁶ However, the panel in that case struck down the Utah statute after looking to legislative history showing that the provision was enacted "as a means of regulating radiological hazards."¹²⁷ While the road access provisions targeted transportation, "a category traditionally subject to local control," they were nonetheless preempted because they were enacted for a purpose that the AEA preempts.¹²⁸

The Fourth Circuit majority emphasized that in *Skull Valley*, most of the provisions struck down specifically mentioned "spent nuclear fuel storage," which is regulated by the NRC.¹²⁹ The Fourth Circuit reasoned that the road access provision, properly contextualized within "a comprehensive scheme," was plainly governing an NRC-regulated activity even though the provision did not facially refer to one.¹³⁰ This line of reasoning supports petitioners' position. The Tenth Circuit properly inferred from context that the *purpose* behind the road access provision was to regulate an NRC-regulated activity, and it fortified its reasoning with legislative history.¹³¹ The Tenth Circuit was therefore conducting the *same* sort of purposive inquiry that petitioners urge here. A similar approach to *Virginia Uranium* would permit including extra-textual evidence in discerning the true purpose behind the legislature's enactment of the moratorium. If petitioners could establish that the Commonwealth actually sought to regulate milling and tailings management with its ban, and did so motivated by concerns about radiological safety, the ban would be preempted by the AEA.

Further, in *Entergy*, the Second Circuit held that the AEA preempted a Vermont law prohibiting nuclear plants from operating

125. *See Skull Valley*, 376 F.3d at 1251–52.

126. *See id.* at 1252.

127. *Id.* at 1248.

128. *Va. Uranium*, 848 F.3d at 610 (Traxler, J. dissenting).

129. *Id.* at 598.

130. *Id.*

131. *Skull Valley*, 376 F.3d at 1252 ("The state legislator who sponsored the Road Provisions explained that they established a moat around the proposed SNF site, and the Governor added that the Road Provisions will add substantially to our ability as a state to protect the health and safety of our citizens against the storage of high-level nuclear waste.") (citations and internal quotation marks omitted).

within the state without the legislature's approval.¹³² Even though the Vermont statute explicitly disavowed that nuclear safety concerns undergirded the law, the Second Circuit engaged in a purposive inquiry¹³³ and determined that Vermont *was* motivated primarily by nuclear safety concerns.¹³⁴ Here, the Fourth Circuit distinguished *Entergy* by focusing on its "straightforward application of *Pacific Gas*" and not on the extratextual inquiry the Second Circuit employed in analyzing the AEA's preemptive scope.¹³⁵ Properly treated, *Entergy* stands for the proposition that courts "do not blindly accept the articulated purpose of [a state statute] for preemption purposes."¹³⁶ In the preemption analysis, *Entergy* indicates that courts are to give effect to both articulated language *and* evidence of purpose. The Court could adopt a similar approach if it opted to rule for petitioners.

C. Nuclear Power is of Grave National Importance and the Conflict of Federalism in this Case Demands Clear Instruction from the Supreme Court

The promotion of nuclear power is an important federal interest and the primary objective of the AEA.¹³⁷ The AEA's legislative history expresses Congress's aim that government and private industry work in tandem to develop nuclear power for productive, non-military purposes.¹³⁸ In the years since the AEA's passage, Congress has legislated with the express desire to reduce reliance on natural gas and petroleum and to cultivate alternative energy sources

132. See *Entergy Nuclear Vt. Yankee, LLC v. Shumlin*, 733 F.3d 393, 422 (2d Cir. 2013).

133. See *id.* at 420 ("We need not repeat the entirety of the district court's examination, which included considering many hours of audiotapes of floor debates and committee meetings for which written transcriptions are not typically maintained, except to note the remarkable consistency with which both state legislators and regulators expressed concern about radiological safety and expressed a desire to evade federal preemption.").

134. See *id.* at 420–22.

135. *Va. Uranium*, 848 F.3d at 598–99.

136. *Entergy*, 733 F.3d at 416 (alteration in original).

137. *Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm'n*, 461 U.S. 190, 221 (1983).

138. See, e.g., S. REP. NO. 83-1699, 3457 (1954) ("Subject at all times to the paramount objective of assuring the common defense and security, the development and utilization of atomic energy shall, so far as practicable, be directed toward improving the public welfare, increasing the standard of living, strengthening free competition in private enterprise, and promoting world peace."); H.R. REP. NO. 83-2181, at 9 (1954) ("[O]ur legislative proposals aim at encouraging flourishing research and development programs under both Government and private auspices.").

like nuclear power.¹³⁹

Further, the political branches of the national government have emphasized the important interest in building a reliable supply of uranium for military and energy applications.¹⁴⁰ Ninety-three percent of the United States' domestic uranium supply is currently imported from foreign states.¹⁴¹ If the Supreme Court upholds Virginia's ban on uranium mining, it would permit states to enact policy directly at odds with these important national interests out of localist concerns. The situation tees up an important conflict of federalism: the Court must choose whether to preclude the state's exercise of a traditional police power in service of strong federal policy, or to permit a state to vindicate its own purposes at the expense of important national interests.

Finally, the stakes are high not only for the litigants of this dispute, but also for lower courts adjudicating similar cases in the future. Therefore, the Court must determine the proper meaning of 42 U.S.C. § 2021(k) against the backdrop of the parties' grave practical concerns¹⁴² and the lower courts' ability to administer the statutory construction the Court ultimately holds to be correct.¹⁴³

VII. CONCLUSION

Contextualizing a new age for nuclear technology, Justice White opened the Court's opinion in *Pacific Gas* with reference to "the turning of swords into plowshares."¹⁴⁴ The awe-inspiring power of

139. See, e.g., Price-Anderson Nuclear Industries Indemnity Act, 71 Stat. 576, 42 U.S.C. § 2210 (2012) (limiting private liability for nuclear accidents; passed in 1954 and renewed in 2005 for twenty years); Powerplant and Industrial Fuel Act of 1978, 92 Stat. 3291, 42 U.S.C. § 8301 *et. seq.* (2012) (providing that no new baseload electric powerplant may be constructed or operated without the capability to use coal or another alternate fuel as a primary energy source).

140. See Brief for Petitioners, *supra* note 6, at 54 (citing 42 U.S.C. §§ 2296b-3(a), 2296b-6(a) (2012); Final List of Critical Minerals 2018, 83 Fed. Reg. 23, 295 (May 18, 2018)).

141. See Uranium Marketing Annual Report, U.S. ENERGY INFORMATION ADMINISTRATION, <https://www.eia.gov/uranium/marketing/> (last visited Nov. 24, 2018).

142. See Brief for Petitioners, *supra* note 6, at 8 ("The development of this massive resource would also be economically advantageous for the region on a vast scale, leading to the creation of an estimated 1,052 annual jobs and nearly \$5 billion of net revenue for local businesses."); Brief for Respondents, *supra* note 7, at 25 ("Virginia's power to regulate such activities within its borders 'is a fundamental aspect of the sovereignty which [Virginia] enjoyed before the ratification of the Constitution and which [it] retain[s] today.'" (quoting *Alden v. Maine*, 527 U.S. 706, 713 (1999))) (alteration in original).

143. *Cf.* *Life Techs. Corp. v. Promega Corp.*, 137 S. Ct. 734, 741 (2017) (opting, by 7-0 majority, for a particular statutory construction in part because it is more "administrable" than the alternative).

144. *Pacific Gas*, 461 U.S. at 193. Here, the Court made reference to *Isaiah* 2:4: "And He

nuclear energy carries with it a legacy of destruction.¹⁴⁵ But as the modern world faces increasing uncertainty in problems of climate, international relations, and the allocation of natural resources, putting nuclear power to more widespread, productive use provides attractive solutions. *Virginia Uranium* is about preemption doctrine and nuclear technology, but it also reflects broader societal and legal paradigms that arise when these important issues become the subject of litigation: the tensions between the global and the provincial, textualism and purposivism, federalism and states' rights. As the justices interpret the AEA's preemptive scope in *Virginia Uranium*, they would do well to keep these paradigms, and their principles, front of mind.

will judge between the nations, And will render decisions for many peoples; And they will hammer their swords into plowshares and their spears into pruning hooks. Nation will not lift up sword against nation, And never again will they learn war."

145. See W.H. Lawrence, *Atom Bomb Loosed on Nagasaki*, N.Y. TIMES, Aug. 9, 1945, at A1 ("The great bomb, which harnesses the power of the universe to destroy the enemy by concussion, blast and fire, was dropped on the second enemy city . . .").