State Authority to Regulate Nuclear Power: Federal Preemption Under the Atomic Energy Act (AEA)

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Summary

A number of states have recently sought to take action to assure that nuclear power plants within their borders are operating safely. Most visibly, the State of Vermont has suggested that it will not approve the continued operation of the Vermont Yankee nuclear power plant, despite the Nuclear Regulatory Commission's (NRC's) approval of an extension to the plant's operating license. The dispute may have profound effects on establishing the scope of state control over nuclear power—including whether states have the authority to shut down a federally licensed and long operating nuclear power plant. However, while safety concerns may prompt states to assert influence over nuclear power plants, federal law severely limits the extent to which states can regulate nuclear power. Indeed, the Supreme Court has expressly held that, while states retain authority over "questions of need, reliability, cost, and other related State concerns," federal preemption prevents states from regulating radiological safety aspects of nuclear power production.

Whether Vermont, or any other state, can act to prevent a nuclear power plant from operating, despite the fact that the plant has been authorized by the NRC, will depend principally on whether the state law or regulation in question is preempted by the Atomic Energy Act (AEA). Although there is "no one crystal clear distinctly marked formula" for determining whether a state law is preempted by federal law, the Supreme Court has established three general classes of preemption: express preemption, conflict preemption, and field preemption. In each instance however, "the question of preemption is one of determining Congressional intent."

Much of the debate surrounding federal preemption of state regulation of nuclear power has centered on field preemption. Under existing Supreme Court precedent, an analysis of whether a state law is preempted under the AEA requires a consideration of both the purpose and effect of the state law in question. Thus, any state law grounded in radiological safety concerns or that has a "direct and substantial" effect on the safety of nuclear plant "construction and operation," falls within the field exclusively occupied by the NRC and is therefore preempted.

This report will look at general constitutional principles of preemption, analyze the Supreme Court's interpretation of the scope of federal preemption under the AEA, and apply established preemption principles to the Vermont Yankee licensing dispute.

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Introduction

The federal government first relinquished its monopoly on atomic energy in 1954 by permitting the private development of nuclear power production for peaceful purposes. After an initial surge in the development of commercial nuclear power, the nuclear industry suffered a long period of dormancy due, at least in part, to political barriers, an unfavorable economic climate, prohibitive construction costs, and reactor accidents accompanied by a corresponding decline in the public's perception of nuclear energy's overall safety. However, after a 30-year lull in development following the Three Mile Island and Chernobyl accidents, the last half decade has generated what many have considered to be a "nuclear renaissance."[1] This resurgence in enthusiasm for commercial nuclear power has been triggered by a number of factors, including a streamlined regulatory environment, the availability of economic incentives for construction and research development, and the absence of a major nuclear accident in the United States. In addition, increasing energy demand and national concerns about climate change and energy security have prompted considerable presidential and congressional support for the expansion of nuclear power, including the establishment of significant loan guarantee authority for the construction of new nuclear power plants. Moreover, as evidence of the "renaissance," license applications for more than two dozen new commercial reactors have been submitted to the Nuclear Regulatory Commission (NRC) since 2007—the first U.S. reactor applications since the 1970s.

Recent events, however, have the potential to slow the current growth period. Most importantly, the earthquake and tsunami that caused significant damage to the Fukushima Dai-ichi nuclear power plant in Japan have heightened nuclear safety concerns in the United States.[2] In addition, congressional and media focus on the federal government's failure to develop a disposal solution for the nation's growing stockpile of nuclear waste;[3] reports of radioactive tritium leaks from nuclear reactors in various states;[4] and a threat to a federal nuclear facility in New Mexico due to wildfires[5] have all reinforced the health and safety concerns associated with nuclear power.[6] Also, significant controversy has surrounded the NRC, the independent regulatory commission charged with ensuring the safety of nuclear power in the United States, relating to the Commission's role in determining whether to license the proposed Yucca Mountain nuclear waste facility.[7] These

[1] *See, e.g.*, Matthew L. Wald, *U.S. Backs Construction of Reactors*, N.Y. Times, February 17, 2010 at B1; Lisan Rein and Christy Goodman, *Little Outcry on Nuclear Reactor Proposal*, Wash. Post, August 4, 2008 at B1; Robert Manor, *Nuclear Energy Nearing Revival: 30 New Reactors are Being Considered as Power Demands Rise*, December 24, 2006.

[2] *See, e.g.*, Nuclear Regulatory Commission, *Recommendations for Enhancing Reactor Safety in the 21st Century*, The *Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident*, July 12, 2011 (concluding that "continued operation and continued licensing activities do not pose an imminent risk to public health and safety."); Andy Grimm, *Trust, Concerns Near Illinois Nuclear Plants*, Chic. Trib., March 15, 2011, at C1.

[3] *See*, CRS Report R40996, *Contract Liability Arising from the Nuclear Waste Policy Act (NWPA) of 1982*, by (name redacted).

[4] *See, e.g.*, Lorraine McCarthy, *New Jersey Tries to Force Exelon to Act on Tritium Leak at Nuclear Power Plant*, BNA Daily Environment Report, May 5, 2010; *Showdown at Indian Point*, N.Y. Times, April 6, 2010, at A26; Matthew L. Wald, *Radioactive Leak Fixed at Vermont Plant*, N.Y. Times, March 26, 2010, at A18.

[5] *Los Alamos Evacuates as Wildfire Approaches*, L.A. Times, June 28, 2011, at AA1. In addition to these recent events, there remain longstanding contamination concerns at the Hanford Nuclear Reservation in the state of Washington.

[6] In addition to safety concerns, economic barriers such as high construction costs continue to play a major role in inhibiting the growth of nuclear power.

[7] *See, e.g.*, CRS Report R41675, *Closing Yucca Mountain: Litigation Associated with Attempts to Abandon the Planned Nuclear Waste Repository*, by (name redacted).

various forces have culminated in increased concern over the safety of nuclear power generally—all during a period in which operating licenses for 18 reactors will expire by 2020 if not renewed.

Given these recent events, a number of states have sought to take action to assure that power plants within their borders are operating safely.[8] Most visibly, the State of Vermont has suggested that it will not approve the continued operation of the Vermont Yankee nuclear power plant, despite the NRC's approval of an extension to the plant's operating license. The dispute may have profound effects on establishing the scope of state control over nuclear power—including whether states have the authority to shut down a federally licensed and long-operating nuclear power plant. However, while safety concerns may prompt states to assert influence over nuclear power plants, federal law severely limits the extent to which states can regulate nuclear power. Indeed, the Supreme Court has expressly held that, while states retain authority over "questions of need, reliability, cost, and other related State concerns," federal preemption under the Atomic Energy Act (AEA) prevents states from regulating nuclear power for the purposes of radiological safety.[9] However, the exact scope of the AEA's preemptive effects, and therefore the extent to which states can regulate nuclear facilities, has long been litigated and remains disputed.

This report will look at general constitutional principles of preemption, analyze the Supreme Court's interpretation of the scope of federal preemption under the AEA, and apply established preemption principles to the Vermont Yankee licensing dispute.

The Principle of Preemption

The legal doctrine of preemption is grounded in the established constitutional principle that federal law takes precedence over inconsistent state law. Under Article VI, cl. 2: "[t]he Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land."[10] The Supremacy Clause, therefore, "elevates" the U.S. Constitution, federal statutes, federal regulations, and ratified treaties above the laws of the states.[11] Thus, where a state law is in conflict with a federal law, the federal law must prevail.

A state law, however, need not be utterly incompatible with federal law in order to be preempted. Where Congress has expressed an intent to displace state authority within a given subject matter by establishing exclusive federal authority, state action in the field will be deemed preempted and therefore invalid.[12] Often, the mere decision by Congress to legislate (or by an agency to regulate) comprehensively in an area is enough to supplant state authority in a particular field. Additionally, in evaluating whether a state law has been preempted by federal law, a court often seeks to

[8] For example, New York, New Jersey, Vermont and other states have raised safety concerns relating to reactors within their states. *See*, Lorraine McCarthy, *New Jersey Tries to Force Exelon to Act on Tritium Leak at Nuclear Power Plant*, BNA Daily Environment Report, May 5, 2010; Danny Hakim, *Cuomo Takes Tough Stance on Nuclear Reactors*, N.Y. Times, June 28 2011. In New York, for example, Governor Cuomo has stated that he is determined to close the Indian Point nuclear power plant. *Id*. Operating licenses for the two reactors at Indian Point expire in 2013 and 2015.

[9] Pacific Gas & Elec. Co. v. State Energy Resources Conservation and Development Commission, 461 U.S. 190, 205 (1983) (hereinafter *Pacific Gas*).

[10] U.S. Const., Art. VI, cl. 2.

[11] Northern States Power Co. v. Minnesota, 447 F.2d 1143, 1145 (8th Cir. 1971).

[12] Local government ordinances are subject to preemption under the same standards as state law. Hillsborough County v. Automated Medical Laboratories, 471 U.S. 707 (1985).

prevent "conflicting regulation of conduct by various official bodies which might have some authority over the subject matter."[13] The doctrine of preemption, therefore, serves two purposes: first, to enforce federal supremacy over state law; and second, to reduce the burden of compliance with multiple, at times inconsistent, regulatory regimes.[14]

Although there is "no one crystal clear distinctly marked formula" for determining whether a state law is preempted by federal law, the Supreme Court has established three general classes of preemption: express preemption, conflict preemption, and field preemption.[15] In each instance, however, "the question of preemption is one of determining congressional intent."[16] Express preemption exists where the language of a federal statute explicitly states the degree to which related state laws are superseded by the federal statute.[17] In including such language, Congress has expressed its clear intent that the federal statute preempt state attempts to legislate on the subject matter. For example, the Employment Retirement Income Security Act of 1974 contained an unusually broad express preemption provision, stating that the act "supersede[d] any and all State laws insofar as they may now or hereafter relate to any employee benefit plan."[18]

Congress, however, does not always articulate its view as to a statute's intended impact on state laws. Nonetheless, a court may *imply* preemption if there is evidence that Congress intended to supplant state authority.[19] Even absent specific preemptive language, preemption is generally implied in two situations. First, under conflict preemption, a state law is preempted "where compliance with both federal law and state regulations is a physical impossibility ... or where state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."[20] Thus, where one cannot simultaneously comply with both state and federal law, or where the state law directly frustrates the purpose of a federal law, the state law is preempted. Second, under field preemption, a state law is preempted where a "scheme of federal regulation is so pervasive as to make reasonable the inference that Congress left no room for the States to supplement it...."[21] Where Congress has established a substantial regulatory framework, any state law falling within the occupied field—even if consistent with federal law—may be preempted. Congress can sufficiently occupy the field so as to displace state law either through statute or pursuant to a delegation to an agency to regulate extensively in the field. Much of the debate surrounding federal preemption of state regulation of nuclear power has centered on field preemption.

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[13] Motor Coach Employees v. Lockridge, 403 U.S. 274, 285-86 (1971).

[14] Additionally, the Supremacy Clause ensures federal control over policy areas in which a single, uniform national standard is desirable. *See*, Skull Valley Band of Goshute Indians v. Nielson, 376 F.3d 1223, 1239 (10th Cir. 2004) (The Supremacy Clause "embodies the fundamental principle that in certain areas the United States must act as a single nation, led by the federal government, rather than as a loose confederation of independent sovereign states.").

[15] Hines v. Davidowitz, 312 U.S. 52, 67 (1941); *See also*, English v. General Elec. Co., 496 U.S. 72, 79 (1990) ("By referring to these three categories, we should not be taken to mean that they are rigidly distinct.").

[16] Skull Valley Band of Goshute Indians v. Nielson, 376 F.3d 1223, 1240 (10th Cir. 2004) (citing Wardair Canada, Inc. v. Florida Dep't of Revenue 477 U.S. 1 (1986)).

[17] *See, e.g.*, Norfolk & Western Ry. v. American Train Dispatchers' Ass'n, 499 U.S. 117 (1991).

[18] 29 U.S.C. §1144.

[19] However, where Congress legislates in an area displacing "the historic police powers of the States," courts should imply preemption only where it is the "clear and manifest purpose of Congress." Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947).

[20] *See*, Gade v. National Solid Waste Management Assn., 505 U.S. 88, 98 (1992).

[21] Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230 (1947).

Of the various forms of preemption, field preemption can be the most difficult to apply. Although the notion that Congress has exclusively "occupied" a field may be simple in theory, identifying the boundaries of the field that has been occupied by federal law, and whether a given state statute or regulation falls into that field, can be incredibly complex in application.[22] In considering whether Congress intended to exclusively occupy a given field, courts will typically consider additional factors, such as whether Congress is regulating in an area of traditional federal responsibility; whether Congress intended to eliminate dual federal and state regulations; whether allowing state regulation in the area would interfere with the goals of the federal regulatory scheme; and, whether the state can assert an important and traditional state interest.[23]

Preemption Under the Atomic Energy Act

Prior to 1954, the federal government maintained a complete monopoly on the use, control, and ownership of nuclear technology.[24] However, the Atomic Energy Act of 1954 (AEA) marked a clear shift away from public ownership towards the private development of nuclear energy for peaceful purposes.[25] In effectuating this transfer, the AEA encouraged private development of nuclear power pursuant to a strict federal licensing and regulatory regime. Accordingly, while private entities were granted the authority to own, construct, and operate commercial nuclear power reactors, they would do so under the extensive supervision of the Atomic Energy Commission (AEC or Commission). With a focus on ensuring national security and maintaining the public health and safety, the AEA provided the Commission with exclusive jurisdiction over the license, transfer, delivery, receipt, acquisition, possession, and use of all nuclear materials. Although states retained their traditional and established role over the "generation, sale, or transmission of electric power,"[26] given the Commission's exclusive and comprehensive regulatory authority over nuclear materials, "no significant role was contemplated for the states."[27]

In 1959, however, Congress amended the AEA to provide the states with greater authority in regulating nuclear materials and nuclear power.[28] The amendments, which contained three key preemption-related provisions, were passed for the express purpose of "clarify[ing] the respective responsibilities ... of the States and the [Federal Government] with respect to ... nuclear materials."[29] First, the amendments authorized the AEC to enter into agreements with states for the "discontinuance" of AEC authority over byproduct materials, source materials, and special nuclear materials in quantities not sufficient to form a critical mass (enough material to create a nuclear chain reaction).[30] The provision provided the states with an explicit avenue for asserting

[22] For a survey of the many varying outcomes federal courts have reached in preemption cases under the Atomic Energy Act see, James L. Buchwalter, *Preemption Issues Under Atomic Energy Act of 1954*, 198 A.L.R. Fed. 147 (2009).

[23] Erwin Chemerinsky, Constitutional Law: Principles and Policies (3rd ed. 2006) at 408.

[24] The federal monopoly was motivated principally by a concern over the potential military uses of nuclear materials.

[25] Atomic Energy Act of 1954 (hereinafter AEA), P.L. 83-703 *codified at* 42 U.S.C. §§2011 et seq.

[26] AEA §271.

[27] English v. General Elec. Co., 496 U.S. 72, 81 (1990).

[28] P.L. 86-373 (1959) *codified at* 42 U.S.C. §2021.

[29] 42 U.S.C. §2021(a).

[30] 42 U.S.C. §2021(b). The provision did not permit, for instance, states to enter into an agreement with the NRC to regulate spent nuclear fuel produced by nuclear power plants. *See*, Dan M. Berkovitz, *Modernizing the Atomic Energy* (continued...)

increased regulatory authority, but only in limited circumstances and only with the consent of the AEC. Second, the amendments made clear that notwithstanding the limited jurisdiction available to states through approved agreements, the AEC "shall retain authority and responsibility" over the "construction and operation" of nuclear power plants as well as the "disposal of such other byproduct, source, or special nuclear material as the Commission determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed of without a license from the Commission."[31] Finally, the amendments attempted to reaffirm states' traditional role in the regulation of power generation while simultaneously asserting the AEC's exclusive authority over radiological safety, providing that "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 legislative history suggests that the decision to invest the AEC with exclusive authority over radiological safety was "premised on [Congress's] belief that the [AEC] was more qualified [than the states] to determine what type of safety standards should be enacted in this complex area."[33] Pursuant to the authority delegated under the AEA, the Commission—along with its successor agency the Nuclear Regulatory Commission[34]—has promulgated detailed and comprehensive regulations with respect to the operation of nuclear facilities and the storage of nuclear waste.[35]

The intent of the 1959 amendments was to clearly delineate the roles of state and federal government in the regulation of nuclear power. However, in practice, the actual impact of the amendments was only to muddy the waters dividing state and federal authority. Although Congress had intended a clear division in regulatory authority that granted the AEC exclusive jurisdiction over safety concerns related to radiation hazards, and the states authority over other non-radiological aspects of the generation and transmission of nuclear power, the federal courts have not interpreted the preemptive effects of the statute in such a straightforward manner.[36] Indeed, the intricacies of the ostensibly simple division of authority have challenged courts for decades.[37]

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Act: Updating the Role of the States in Regulating the Construction and Operation of Nuclear Power Plants and the Disposal of Nuclear Wastes, In *State Regulation of Nuclear Power: An Overview of Current State Regulatory Activities,* Committee Print No. 13, Committee On Interior and Insular Affairs (1992) at 44 ("The activities which the state would be allowed to regulate would be those that did not involve either the use or production of nuclear materials in nuclear reactors or the disposal of nuclear wastes that the [NRC] determined were required to be exclusively regulated by the [NRC].).

[31] 42 U.S.C. §2021(c).

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

[33] Silkwood v. Kerr-McGee Corp., 464 U.S. 238, 250 (1984).

[34] The AEC was abolished in 1974 and all of its licensing and regulatory authority was transferred to the newly created Nuclear Regulatory Commission. Energy Reorganization Act of 1974, P.L. 93-438 §5841(f).

[35] *See*, 10 C.F.R. parts 52, 54, 55, and 70.

[36] *See*, *Pacific Gas*, 461 U.S. at 208 ("[S]tatements on the floor of Congress confirm that while the safety of nuclear technology was the exclusive business of the federal government, state power over the production of electricity was not otherwise displaced."). It should also be noted that states are authorized to regulate nuclear plant emissions under the Clean Air Act. 42 U.S.C. §7412.

[37] *See*, *Buchwalter*, *supra* note 22 (surveying the varying preemption decisions reached by lower federal courts).

The Supreme Court's Interpretation of the Preemptive Scope of the Atomic Energy Act

The Supreme Court first directly addressed the AEA's preemptive scope in 1983.[38] In *Pacific Gas & Electric v. State Energy Resources Conservation and Development Commission*, the Court heard a challenge to a California law that prohibited the construction of any new nuclear power plant until the California Energy Commission "finds that there had been developed and that the United States through its authorized agency has approved and there exists a demonstrated technology or means for the disposal of high-level nuclear waste."[39] The law, which remains in force, has amounted to an effective moratorium on the construction of any new nuclear power plant in the state. Importantly, California argued that the law was necessary to avoid the economic consequences of a critical nuclear waste build-up, which could result in "unpredictably high costs to contain the problem or, worse, shutdowns in reactors."[40] The law was not, the state argued, motivated by radiological safety concerns.

In upholding the California law, the Court accepted the state's economic purpose and held that the law was outside the preemptive scope of the AEA.[41] In discussing the division of authority between federal and state government under the AEA, the Court asserted that Congress had intended for the continued "dual regulation of nuclear-powered electricity generation."[42] Pursuant to this regime, state and federal government would exercise concurrent, yet distinct, regulatory authority over the nuclear power industry. In enacting the AEA, Congress 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."[43] For example, states retain the authority to make the initial determination regarding the need for nuclear power.

The Court then employed Congress's intended division of authority to determine the preemptive scope of the AEA. In doing so the Court established two instances in which state law was preempted. First, almost in passing, the Court noted that any state statute which sought to regulate

[38] In 1971, the Supreme Court affirmed, *per curiam*, the U.S. Court of Appeals for the Eighth Circuit (Eighth Circuit) decision in *Northern States Power Co. v. Minnesota*, 447 F.2d 1143 (8th Cir. 1971). *Northern States* involved a challenge to a Minnesota state agency's attempt to regulate the level of radioactive discharges from a nuclear power plant. The Eighth Circuit held that Congress intended to preempt state regulation pertaining to the construction and operation of nuclear reactors. In determining that the state regulation was preempted, the court found "an implied congressional intention to pre-empt this area by pervasiveness of the federal regulatory scheme which Congress directed and which the AEC has carried into effect through the promulgation and enforcement of detailed regulations governing the licensing of atomic power plants." *Id*. at 1152-53. The Eighth Circuit concluded that the "federal government has exclusive authority under the doctrine of pre-emption to regulate the construction and operation of nuclear power plants, which necessarily includes regulation of the levels of radioactive effluents discharged from the plant." *Id*. at 1154.

[39] 461 U.S. 190 (1983). Cal. Pub. Res. Code Ann §25524.2 (1977). The federal government has yet to develop a permanent means for disposing of nuclear waste.

[40] *Pacific Gas*, at 214.

[41] *Id*. at 216.

[42] *Id*. at 212.

[43] *Id*. at 205. Under the AEA, "the federal government maintains complete control of the safety and 'nuclear' aspects of energy generation; [and] the States exercise their traditional authority over the need for additional generating capacity, the type of generating facilities to be licensed, land use, ratemaking, and the like." *Id*. at 212.

the "construction and operation" of a nuclear power plant, even if enacted out of nonsafety concerns," would "directly conflict with the NRC's exclusive authority over plant construction and operation."[44] Thus, any state law seeking to regulate the "construction or operation" of a nuclear power plant would be preempted, either as in "conflict" with federal law, or as within a field exclusively occupied by the NRC. Without elaborating, the Court concluded that the California statute did not attempt to regulate the "construction or operation" of a nuclear reactor.

Second, the Court established that state regulations motivated by radiological safety concerns are broadly preempted by the AEA, as the "Federal Government has occupied the entire field of nuclear safety concerns...."[45] Thus, under field preemption, state attempts to regulate nuclear power that are grounded in safety concerns are invalid, as Congress has delegated comprehensive authority over nuclear safety to the NRC. However, the Court determined that where a non-safety rationale can be established, the state law may be able to avoid preemption.[46] Because the California statute was based on the potential economic consequences of a buildup of nuclear waste, rather than safety issues associated with that buildup, the law did not fall within the prohibited field. Although the petitioners pointed to other "indicia" suggesting that the California legislature was actually motivated by safety concerns rather than the proffered economic concerns, the Court rejected any further investigation into the state's intent and accepted California's "avowed economic purpose as the rationale for enacting" the restrictive provision.[47] The Court refused to "become embroiled in attempting to ascertain California's true motive," as any "inquiry into legislative motive is often an unsatisfactory venture."[48]

Third, the Court held that the California statute was not in conflict with NRC's regulation of nuclear waste disposal. Although the NRC had concluded that "progress toward the development of disposal facilities" was sufficient to allow for the continued licensing of nuclear reactors,[49] the Court made clear that the NRC's determination "indicates only that it is safe to proceed with such plants, not that it is economically wise to do so." Accordingly, a state is free to prevent the construction of new nuclear power plants until the state is satisfied that the ultimate disposal of nuclear waste does not pose an economic obstacle to the reactor's ability to provide power to the state. Importantly, the California law also did not "impose its own standards on nuclear waste disposal," as the regulation of nuclear waste disposal was a field "occupied by the federal government." Rather, the Court interpreted the statute as acknowledging exclusive federal responsibility in regulating how nuclear waste is stored.

Finally, the Court rejected the petitioners' argument that the California statute should be preempted as "an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."[50] Although the Court determined that the "primary purpose" of the AEA was to promote the development of nuclear power for peaceful purposes, that goal was not to be

[44] *Id*. at 212.

[45] *Id*. at 212. Except for those "limited powers expressly ceded to states" through 42 U.S.C. §2021. *Id*.

[46] *Id*. at 212-13.

[47] *Id*. at 216.

[48] *Id*. (citing U.S. v. O'Brien, 391 U.S. 367 (1968)).

[49] *Id*. at 218. For more on the litigation associated with NRC's determination of the risks to public health and safety posed by the disposal of nuclear waste see, Natural Resources Defense Council, Inc. v. NRC, 582 F.2d 166 (2nd Cir. 1978).

[50] *Pacific Gas*, at 220.

accomplished "at all costs."[51] While the California law may have undercut the continued development of nuclear power, the Court noted that "the legal reality remains that Congress has left sufficient authority in the States to allow the development of nuclear power to be slowed or even stopped for economic reasons."[52] Significantly, the Court determined that the objective of the AEA was to encourage, but not mandate, the development of nuclear power.

Pacific Gas remains the authoritative case in assessing the preemptive scope of the AEA. The legacy of the case can be reduced to a number of key principles. First, the AEA established a division of authority between federal and state government such that states retain substantial authority over the threshold decision of the need for nuclear power. Second, the AEA's goal of encouraging the development of nuclear power does not supersede a state's economic decision to restrict that development. Finally, and perhaps most importantly, a state or local statute or regulation that either seeks to regulate the processes for the construction and operation of a nuclear power plant, or that is otherwise motivated by radiological safety concerns, falls within the preempted field exclusively occupied by the NRC.

In its next term, the Supreme Court subsequently narrowed the field, albeit in a limited way, occupied by the federal government under the AEA. In *Silkwood v. Kerr-McGee*, the Court held that a state's award of punitive damages as a consequence of a radiological leak from a nuclear facility was not preempted by the AEA.[53] The Court determined that Congress, in enacting both the AEA and the Price-Anderson Act—a statute which provided a scheme for liability in the case of a nuclear disaster—did not intend to prohibit the states from awarding otherwise available remedies to individuals injured by radiological elements.[54] The Court, therefore, concluded that state-awarded damages for radiation injuries do not fall within the radiological safety field occupied by the federal government as defined in *Pacific Gas*. Nor did the Court find that a state award for damages for radiation injuries created an "irreconcilable conflict between the federal and state standards" or frustrated the "objectives" of federal law.[55]

In its most recent consideration of the scope of preemption under the AEA, the Supreme Court held that a state claim by an employee of a nuclear power plant for intentional infliction of emotional distress also did not lie within the preempted field of the AEA.[56] In *English v. General Electric Co.*, the employee had claimed that the defendant nuclear power company had engaged in "extreme and outrageous conduct" after she had made repeated nuclear safety complaints.[57] The actual holding in *English* was predictable given its similarity to *Silkwood*, as it "would be odd, if not irrational, to conclude" that Congress intended to preempt "tort actions stemming from retaliation against whistleblowers, but not tort actions arising from radiation damage."[58] However, the Court's interpretation of the then seven-year-old decision in *Pacific Gas* was significant. *English* can most reasonably be characterized as an expansion of the Court's existing field preemption standards.[59] The Court held that although *Pacific Gas* had determined that a state law

[51] *Id*. at 221.

[52] *Id*. at 223.

[53] 464 U.S. 238 (1984).

[54] *Id*. at 251-258.

[55] *Id*. at 256.

[56] English v. General Elec. Co., 496 U.S. 72 (1990).

[57] *Id*. at 71-78.

[58] *Id*. at 86.

[59] The *English* court, however, would likely characterize its decision as a clarification of the scope of the preempted (continued...)

"grounded in safety concerns" was *sufficient* to trigger field preemption, the opinion "[D]id not suggest that a finding of safety motivation was *necessary* to place a state law within the preempted field.... Thus, even as the Court suggested that part of the pre-empted field is defined by reference to the purpose of the state law in question, it made clear that another part of the field is defined by the state law's actual effect on nuclear safety."[60]

English, therefore, established that an analysis of whether a state law was preempted under the AEA required a consideration of both the purpose and effect of the state law in question. Thus, any state law motivated by radiological safety concerns or that has a "direct and substantial" effect on the safety of nuclear plant "construction and operation" falls within the field exclusively occupied by the NRC and is preempted. The Court determined that the tort law in question was neither motivated by safety concerns, nor was the effect of the law on radiological safety concerns "direct nor substantial enough to place petitioner's claim in the preempted field."[61] The Supreme Court has not addressed preemption under the AEA since its 1990 decision in *English*.

Two more recent U.S. courts of appeals opinions also warrant discussion, and may assist in clarifying the federal courts' current view of preemption under the AEA. In *Skull Valley Band of Goshute Indians v. Nielson*, the United States Court of Appeals for the Tenth Circuit (Tenth Circuit) held that a series of Utah statutes regulating the storage and transportation of spent nuclear fuel were preempted by the AEA.[62] Principally, the Utah statutes established state licensing requirements for the storage of nuclear waste and required counties to address nuclear waste storage and transportation concerns in their land use planning provisions. The Tenth Circuit struck down the statutes as "grounded in safety concerns" and therefore preempted under *Pacific Gas*.[63] The court looked to the language included within the statute that expressed the state's concerns over the "effects of nuclear waste on the health and welfare of Utah citizens."[64] Additionally, the court noted that "unlike the state officials in *Pacific Gas*, the Utah officials here have failed to offer evidence" that the statutes were "supported by a non-safety rationale."[65] Thus, under Tenth Circuit case law, the burden is on the state to present evidence of its non-safety

(...continued)

field already established under *Pacific Gas*. *English* did highlight some confusion with respect to the Court's discussion of conflict preemption and field preemption. In holding that "even as the Court [in *Pacific Gas*] suggested that part of the pre-empted field is defined by reference to the purpose of the state law in question, it made clear that another part of the field is defined by the state law's actual effect on nuclear safety," the *English* court cited to the statement in *Pacific Gas* that a state attempt to regulate "construction or operation of a nuclear power plant ... even if enacted out of nonsafety concerns, would nevertheless *directly conflict* with the NRC's exclusive authority over plant construction and operation." That statement in *Pacific Gas* could reasonably be interpreted as pertaining to conflict preemption rather than field preemption. However, perhaps in order to remove any confusion between conflict and field preemption, in citing the *Pacific Gas* language, the *English* Court conspicuously removed the reference to "conflict" and replaced it with "infringe upon"—a phrase more compatible with the principles of field preemption. Thus the *English* Court stated: "[S]tate regulation of matters directly affecting the radiological safety of nuclear-plant construction and operation, 'even if enacted out of nonsafety concerns, would nevertheless [infringe upon] the NRC's exclusive authority.'" *English*, 496 U.S. at 84 (citing Pacific Gas, 461 U.S. at 212). Nevertheless, the *English* court clearly expanded the preemptive field to include laws with "some direct and substantial effect on the decisions made by those who build or operate nuclear facilities concerning radiological safety." *Id*. at 85.

[60] *Id*. at 84.

[61] *Id*. at 85.

[62] 376 F.3d 1223 (10th Cir. 2004).

[63] *Id* . at 1254.

[64] *Id*. at 1246.

[65] *Id*.

rationale, rather than on the opposing party to prove that the statute was motivated by safety concerns.

Finally, in the 2008 decision of *U.S. v. Manning*, the U.S. Court of Appeals for the Ninth Circuit (Ninth Circuit) struck down the Washington State Cleanup Priority Act (CPA) that required the mitigation of "mixed waste" contamination before additional waste could be stored within the state.[66] The State of Washington is home to the Department of Energy's Hanford Nuclear Reservation, which houses over 53 million gallons of mixed radioactive and nonradioactive waste—at least one million gallons of which has leaked into the surrounding groundwater.[67] In considering the state law, the Ninth Circuit directed that field preemption under the AEA is triggered where "(1) the purpose of the CPA is to regulate against radiation hazards, or (2) if the CPA directly affects decisions concerning radiological safety."[68] The court determined that the CPA was preempted on both grounds, as the purpose of the law was to "regulate the treatment, storage, and disposal of radioactive materials, among other materials, in order to protect the health and safety of Washington residents and the environment."[69] In reaching that determination, the court gave great weight to language of the CPA—including the general "policy" section of the statute and the structure of the law—which included state permit conditions on the disposal of nuclear waste. The court also found that the CPA would "directly and substantially impact[] the DOE's decisions on the nationwide management of nuclear waste."[70]

Application of Established Preemption Principles to the Vermont Yankee Relicensing

Although the Supreme Court has restricted a state's ability to regulate nuclear reactors within its borders for the purposes of safety, the preemptive scope of the AEA has not entirely closed off state regulation of nuclear power. States retain authority in traditional areas of state control, such as "the need for additional generating capacity, the type of generating facilities to be licensed, land use, rate making, and the like."[71] Additionally, it is clear that states retain longstanding authority over the sale and transmission of electric power generated by nuclear power plants. Accordingly, states that have sought to assert authority over nuclear power production have done so by avoiding laws related to radiological safety and laws regulating how nuclear plants are operated and constructed—focusing instead on the initial determination of whether a need for nuclear power exists, and whether nuclear power is economically feasible.[72] These longstanding state statutes are wide ranging. For example, Minnesota has enacted an outright prohibition on new nuclear power plants.[73] Many states, like California, have enacted laws that condition the

[66] 527 F.3d 828 (9th Cir. 2008).

[67] *Id*. at 831. Much of the high-level waste stored at the Hanford facility is from the original Manhattan Project.

[68] Id. at 836.

[69] Id. at 838.

[70] *Id*. at 839.

[71] *Pacific Gas*, 461 U.S. at 212.

[72] *See*, Wisconsin Legislative Council Staff Memorandum, State Laws Limiting the Construction of New Nuclear Power Plants, November 29, 2006. Available at http://legis.wisconsin.gov/lc/committees/study/2006/npowr /files/memo2_npowr.pdf.

[73] Minn. Stat. §216B.243 Subd. 3b. ("The commission may not issue a certificate of need for a new nuclear-powered electric generating plant.").

construction of new nuclear power plants upon certain findings of a state regulatory body.[74] The required finding is often associated with the existence of a viable means for the disposal of nuclear waste.[75] Other states require that the construction of a new plant be economical.[76] Still others require ratification—either by the state legislature or through statewide referendum—before establishing a new nuclear power plant.[77] These types of state laws, however, act to prevent the establishment of new nuclear power plants. They do not attempt to assert ultimate control over *existing* plants.

Significant controversy has surrounded Vermont's attempt to prevent the continued operation of the state's only nuclear power plant—Vermont Yankee, located in Vernon. Under Vermont law, a power generator must obtain a certificate of public good (CPG) from the state Public Service Board (PSB) before constructing any new power plant.[78] As to nuclear power plants specifically, before a CPG for new construction may be granted, the PSB must first obtain the approval of the Vermont General Assembly.[79] Recently, however, Vermont has enacted a series of statutes that provide the General Assembly with the authority to decide whether Vermont Yankee, which has been operating for almost 40 years, operates beyond March 21, 2012.

Vermont Relicensing

Vermont has suggested that it may attempt to stop the operation of Vermont Yankee nuclear power plant by preventing the PSB from providing the power plant with the necessary CPG to both operate and to store new nuclear waste. The factual background to the licensing of the Vermont Yankee plant is long and complicated. Entergy Nuclear purchased the plant in 2002. At the time, the plant was authorized by the NRC to operate until March 21, 2012. The purchase, however, had to be approved by the Vermont Public Service Board before it could be finalized.[80] In support of gaining this approval, Entergy entered into a Memorandum of Understanding with the Vermont Department of Public Service.[81] In exchange for the Department's support of the sale, Entergy agreed to acknowledge the PSB's authority to determine whether the plant would be allowed to operate beyond March 21, 2012, and also agreed not to challenge the PSB's authority to make that operation decision on the grounds that it is preempted under the AEA.[82]

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[74] *See, e.g.,* Wis. Stat. §196.493; Ky. Rev. Stat. Ann. §278.605; Conn. Gen. Stat. §221-136.

[75] *See, e.g.*, Ky. Rev. Stat. Ann. §278.605("No construction shall commence on a nuclear power facility in the commonwealth until the Public Service Commission ... has identified and approved a demonstrable technology or means for the disposal of high level nuclear waste.").

[76] *See*, W. Va. Code §16-27A(Requiring a finding that "the construction of any nuclear facility in this state will be economically feasible for West Virginia rate payers.").

[77] *See, e.g.,* Me. Rev. Stat. §4302 ("Prior to the construction of any nuclear power plant within the State, the question of approving that construction must be submitted to the voters of the State....").

[78] Vt. Stat. Ann. tit. 30, §248(a)(2).

[79] Vt. Stat. Ann. tit. 30, §248(e).

[80] *See*, Memorandum of Law in Support of Plaintiffs' Motion for Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. April 22, 2011) at 9.

[81] Memorandum of Understanding Among Entergy Nuclear Vermont Yankee, LLC and the Vermont Department of Public Service. Available at http://publicservice.vermont.gov/dockets/6545/MOUfinal40305.PDF.

[82] Whether Entergy could have waived its preemption claim by entering into the Memorandum of Understanding is beyond the scope of this report. Nevertheless, the district court did not reference the agreement at all in its decision on Entergy's request for a preliminary injunction. See, Memorandum and Order on Plaintiffs' Motion for a Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. July 18, 2011).

At the time, Vermont law prohibited the construction of any facility for the storage of nuclear waste without first obtaining the approval of the Vermont General Assembly.[83] Aware that the plant would exceed its existing storage capacity by 2008, Entergy sought permission from the General Assembly to construct additional waste storage, which authorized the Public Service Board to approve additional storage through the passage of Act 74 in 2005, but only up to March 21, 2012.[84] Act 74 expressly stated that the "storage of spent fuel derived from the operation of Vermont Yankee after March 21, 2012 shall require the approval of the general assembly."[85] Thus, the act required that Entergy return to the General Assembly for approval to store waste created after the March 21, 2012, deadline.

In 2006, the General Assembly passed Act 160 which prohibited the PSB from issuing a CPG for the continued *operation* of the Vermont Yankee plant beyond March 21, 2012, without the approval of the General Assembly.[86] The statute provided that the General Assembly "shall consider concurrently the issue of storage of spent nuclear fuel derived ... after March 21, 2012 ... and the operation of Vermont Yankee after March 21, 2012...."[87] Accordingly, Entergy would be required to obtain legislative approval to both operate beyond 2012 and to store nuclear waste created after 2012. In a third statute passed in 2008, Act 189 called for a "comprehensive vertical audit and reliability assessment" of the Vermont Yankee plant "in order to determine if it should be authorized to operate in this state beyond the expiration of its current operating license on March 21, 2012."[88]

On March 21, 2011, after an extensive environmental and safety review, the NRC renewed the Vermont Yankee operating license, authorizing plant operation through March 21, 2032.[89] The Governor of Vermont, however, has suggested that the state will not grant the approval for the plant's continued operation beyond 2012, and the Vermont Senate has rejected legislative proposals that would authorize the PSB to provide Entergy with the CPG necessary for continued operation.[90]

Entergy has challenged the state's authority to prevent the Vermont Yankee plant from operating—arguing that Acts 74, 160, and 189 are preempted by the AEA.[91] In filing its claims before the U.S. District Court for the District of Vermont, Entergy also asked the court to grant a preliminary injunction that would immediately, but temporarily, prohibit Vermont from forcing Entergy to cease operations.[92] Entergy asserted that it needed confirmation of whether the state could shut down the plant's operation before Entergy purchased $60 million in nuclear fuel

[83] Vt. Stat. Ann. tit. 10, §6501.

[84] Act 74 (2005).

[85] Act 74 §2 (2005) (*amending* Vt. Stat. Ann. tit. 10, §6522).

[86] Act 160 (2006) (*amending* Vt. Stat. Ann. tit. 30, §248).

[87] Act 160 (2006).

[88] Act 189 (2008).

[89] Vermont Yankee Nuclear Power Station: License Renewal Application. Available at http://www.nrc.gov/reactors/operating/licensing/renewal/applications/vermont-yankee.html.

[90] Matthew L. Wald, *State Senate in Vermont Votes to Close Nuclear Plant*, N.Y. Times, February 25, 2010, at A14.

[91] In addition to Entergy's claim that the statutes are preempted under the AEA, the plaintiffs also brought claims under the Federal Power Act and the Commerce Clause. Memorandum of Law in Support of Plaintiffs' Motion for Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. April 22, 2011).

[92] Memorandum of Law in Support of Plaintiffs' Motion for Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. April 22, 2011).

needed for the continued operation of the plant.[93] The district court recently denied the request for an injunction, holding that Entergy had failed to show that the company would suffer "irreparable harm" between now and the merits trial, currently scheduled for September 12, 2011.[94]

Preemption Analysis

Whether Vermont, or any other state, may act to prevent a nuclear power plant from operating, despite the fact that the plant has been authorized by the NRC, will depend principally on whether the state law or regulation in question is preempted by the AEA. Although federal courts have previously considered state laws that have the effect of preventing new nuclear power plants from being constructed, until now, a federal court has not considered an attempt by a state to shut down a currently licensed and operating nuclear power plant. Thus, the Vermont controversy raises a novel legal issue which could have a substantial impact on states' abilities to determine the fate of existing nuclear plants within their borders. Although predicting the outcome of the Vermont Yankee case at such an early stage is difficult, it is important to understand the legal analysis the district court, and other courts facing challenges to state attempts to regulate nuclear power, will likely apply. In asserting that Vermont has intruded on the NRC's exclusive authority under the AEA, Entergy has focused on two principal arguments: that the Vermont statutes are inappropriately grounded in radiological safety concerns; and that Vermont is preempted from shutting down a federally licensed and currently operating nuclear power plant.[95]

Grounded In Safety Concerns

The court's primary determination will be whether the Vermont statutes, which provide the General Assembly with the authority to prevent Vermont Yankee from operating, "address matters of radiological safety."[96] Pursuant to *Pacific Gas*, "a state moratorium grounded in safety concerns ..., a state judgment that nuclear power is not safe enough to be further developed ... [or] a state prohibition on nuclear construction for safety reasons" all fall within the field occupied by the federal government.[97] Accordingly, if the court determines that safety was indeed the purpose behind the statutes, then the law in question will be deemed preempted. In determining the purpose of the laws, the court will likely consider the statutory language included within the "findings" or "legislative purpose" sections, as well as the substantive provisions of the enacted

[93] *Id*. at 38.

[94] Memorandum and Order on Plaintiffs' Motion for a Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. July 18, 2011). Because the district court's order focused principally on whether Entergy could prove that it would suffer "irreparable harm" if the preliminary injunction were not granted, there is little to be gleaned from the order in regard to the merits of the claim. However, the court did note that it was "unclear to the Court how a legislative scheme that does not require final determination of a renewal petition for a nuclear power plant is compatible with the safe decommissioning of a plant." *Id*. at 3. This language may suggest a concern by the court that an immediate termination of operations at Vermont Yankee without proper preparation may be in tension with established NRC decommissioning regulations. In a separate footnote, the court also noted that "the legislative history of the challenged enactments contains numerous references to 'safety,' some of which may be problematic, some of which may merely reflect legislators' responsible recognition that Vermont cannot regulate radiological health and safety." *Id*.

[95] Memorandum of Law in Support of Plaintiffs' Motion for Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. April 22, 2011).

[96] Skull Valley Band of Goshute Indians v. Nielson, 376 F.3d 1223, 1246 (10th Cir. 2004).

[97] *Pacific Gas*, 461 U.S. at 213.

statutes.[98] Additionally, the court may look to the legislative history to determine legislative intent, although the Supreme Court has warned that courts "should not become embroiled in attempting to ascertain [a state's] true motive."[99]

The district court's determination of whether the Vermont statutes are grounded in safety concerns may raise three key questions. First, to what extent does the language and purpose of Act 189 taint the language and purpose of Acts 75 and 160? Courts have repeatedly struck down state laws relating to the operation of nuclear power plants or the storage of nuclear waste where there is evidence that the law was motivated by safety concerns.[100] However, very little in the text of either Act 74 or 160 explicitly suggests that the statutes were passed for the purpose of radiological safety. The findings section of Act 74 suggests that the General Assembly's purpose was a desire to ensure that the state's future power supply is "diverse, reliable, economically sound, and environmentally sustainable," and the state's need to invest in "clean energy resources in order to permit adequate power supply diversity."[101] Additionally, prior to granting a CPG for nuclear waste storage, Act 74 mandated that the Public Service Board determine that "adequate financial assurance exists for the management of spent fuel at Vermont Yankee for a time period reasonably expected to be necessary...."[102] The state was also concerned with the eventual removal of the stored waste "consistent with applicable federal standards."[103]

Likewise, the "legislative policy and purpose" section of Act 160 specifically states that the General Assembly should consider "the state's need for power, the economics and environmental impacts of long-term storage of nuclear waste, and choice of power sources among various alternatives," as well as assess "the potential need for the operation of the facility and its economic benefits, risks, and costs," and "alternatives that may be more cost-effective or that otherwise may better promote the general welfare."[104] However, Act 160 does direct that the Department of Public Service arrange for studies that "in general, shall…identify, collect information on, and provide analysis of long-term environmental, economic, and *public health* issues…."[105] In acting on a petition for the continued operation of a nuclear power plant, the PSB "shall consider…the general and specific issues that the studies are required to address."[106] Thus, long-term public health, which may or may not implicate radiological safety, was a factor to be considered by the PSB in determining whether Vermont Yankee may continue to operate. Nevertheless, both Act 74 and 160, on their face, seem to be primarily grounded in permissible

[98] *See e.g.* U.S. v. Manning, 527 F.3d 828, 836-38 (9th Cir. 2008) (analyzing the "Policy" section and other substantive sections of the Cleanup Priority Act in determining the statutes' purpose).

[99] *Pacific Gas*, 461 U.S. at 216.

[100] *See e.g.* U.S. v. Manning, 527 F.3d 828, 836-38 (9th Cir. 2008) ("The purpose of the CPA is evident in these provisions: to regulate the treatment, storage, and disposal of radioactive materials ... in order to protect the health and safety of Washington residents and the environment."); Skull Valley Band of Goshute Indians v. Nielson, 376 F.3d 1223, 1246 (10th Cir. 2004) ("[T]hese provisions address matters of radiological safety that are addressed by federal law and that are the exclusive province of the federal government."); U.S. v. Kentucky, 252 F.3d 816 (6th Cir. 2001) ("Because the challenged permit conditions regulate materials covered by the AEA, they are therefore preempted."); County of Suffolk v. Long Island Lighting Co.. 728 F.2d 52 (2nd Cir. 1984) ("To the extent that these safety concerns pervade the complaint, appellants claims are preempted.").

[101] Act 74 (2005).

[102] *Id*.

[103] *Id*.

[104] Act 160 (2006).

[105] *Id*. (emphasis added)

[106] *Id*.

state concerns such as ensuring diverse power generation, financial costs associated with waste storage, the need for additional power, and general economic concerns.

Vermont's most recently enacted statute, however, could be interpreted as suggesting that the General Assembly may base its ultimate decision on whether to approve the continued operation of Vermont Yankee on safety concerns. Act 189 called for an "independent comprehensive reliability assessment" of the Vermont Yankee power plant.[107] The assessment, which has been completed, included various investigations, many of which touch on the reliability of radiological safety systems. For example, the audit was to include an assessment of the plant's core cooling system, primary containment system, heat removal system, and the "separation of safety systems."[108] Act 189 also called for a "physical examination" of the entire plant—an action the U.S. Court of Appeals for the Second Circuit has previously said "obviously invade[s] the NRC's exclusive regulatory province ... whether it be for safety or non-safety purposes."[109] A "public oversight panel" was also created and given access to "records and documents consulted and generated in developing and conducting the comprehensive reliability assessment."[110] Importantly, the panel was directed to report its findings, which presumably are based on the "comprehensive reliability assessment" to the General Assembly "for the purpose of informing the legislature in making its determination whether Entergy Nuclear Vermont Yankee plant should be authorized to operate in the state beyond the expiration of its current license...."[111] Thus, Act 189 could be interpreted as principally concerned with the continued operational safety of Vermont Yankee.[112] If the general assembly exercises its authority to prohibit the continued operation of Vermont Yankee based on a "reliability assessment" that includes a judgment of the adequacy of the plant's safety systems, such an action would likely be preempted under the AEA.[113]

Vermont, however, could argue that any decision to prohibit the continued operation of Vermont Yankee would be based on the *reliability* of the plant rather than the *safety* of the plant. *Pacific Gas* expressly held that states "retain their traditional responsibility in the field of regulating electrical utilities for determining questions of ... reliability...."[114] California, for instance, was concerned about the reliability of nuclear power as an energy source in the sense that a nuclear waste buildup could lead to "shutdowns in reactors" with significant economic consequences once a plant's storage capacity was reached.[115] California's primary concern was not that reactors would shut down because the buildup of waste was unsafe, but rather that the buildup would have

[107] Act 189 (2008).

[108] *Id*.

[109] *Id*.; The circuit court's discussion was limited to a "court ordered inspection." County of Suffolk v. Long Island Lighting Co., 728 f.2d 52, 60 (2nd Cir. 1984).

[110] Act 189 (2008).

[111] *Id*.

[112] Indeed, an earlier version of Act 189 was entitled, "An Act Relating to an Independent Safety Assessment of the Vermont Yankee Nuclear Facility."

[113] In *Pacific Gas*, for instance, the Court gave weight to the Reassessment Report that California relied upon to inform its passage of the moratorium. 461 U.S. at 213-16. The issue of the Vermont General Assembly's use of information gathered from the reliability assessment highlights the question of whether a reviewing court should be considering the General Assembly's motive in actually denying Vermont Yankee a CPG, or the General Assembly's motive in passing Acts 74, 160 and 189.

[114] *Pacific Gas*, 461 U.S. at 205.

[115] *Id*. at 214

significant economic consequences.[116] Vermont's reliability concerns, however, seem to be focused on safety-related shutdowns and the adequacy of certain safety-related equipment.[117] This type of reliability concern rooted in safety flaws could still be interpreted as falling within the preemptive field established in *Pacific Gas*.[118] Thus, in determining whether a safety purpose exists, the district court will likely consider how the three statutes interrelate, the role of the "reliability assessment," and whether Vermont's reliability concerns can be distinguished from safety concerns.

The second key question the court may look at in determining whether the Vermont statutes are grounded in safety concerns is to what degree the court will entertain evidence of legislative intent arising from sources outside the text of the enacted statutes. While there is limited evidence in the plain text of the Vermont statutes of safety concerns, Entergy has asserted that the legislative history behind the statutes and public comments associated with the laws suggest otherwise.[119] Indeed, in denying Entergy's motion for a preliminary injunction, the district court noted that "the legislative history of the challenged enactments contains numerous references to 'safety'...."[120] However, given the Supreme Court's warning in *Pacific Gas* to "not become embroiled in attempting to ascertain [a state's] true motive," it is unclear whether the district court will be swayed by, or even consider, non-textual sources of legislative intent.[121] Lower courts have, however, been willing to engage in a deeper investigation of legislative intent.[122]

A third key question the court may look at in deciding whether the Vermont statutes are grounded in radiological safety concerns is which party has the burden of proving legislative intent. Is the burden on the state to prove the existence of a non-safety rationale, or is the burden on Entergy to prove that the state purpose in enacting the statutes was to regulate radiological safety? The Tenth Circuit, for instance, has suggested that the burden is on the state to prove its non-safety rationale.[123] However, *Pacific Gas* seems to suggest that the state need only "avow" a non-safety

[116] *Id*. (citing the California Reassessment Report as stating "Waste disposal safety [] is not directly addressed by the bills, which ask only that a method [of waste disposal] be chosen and accepted by the federal government.").

[117] Additionally, California was "concerned not with the adequacy of the [waste disposal] method, but rather with its existence." *Pacific Gas*, at 214. Whereas Vermont seems to be concerned about the adequacy of certain operating systems, not their mere existence. *Pacific Gas*, at 214.

[118] *See*, Maine Yankee Atomic Power Co. v. Bonsey, 107 F. supp. 2d 47 (D. Me. 2000) ("Nonradiological aspects of spent fuel storage, however, are still subject to some regulation by the states ... [t]hat does not mean, of course, that the state can indirectly regulate plaintiffs' handling of spent nuclear fuel under the guise of regulatory site development (e.g., landscaping, slopes, drainage, soil erosion, etc.)").

[119] Entergy cites a number of instances in which statements relating to radiological safety were made. For example, then-Vermont Senator (now current Governor) Peter Shumlin was quoted in 2008 as saying "safety is our top concern." Memorandum of Law in Support of Plaintiffs' Motion for Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. April 22, 2011) at 21. Vermont has also expressed concern over alleged tritium leaks from the Vermont Yankee plant, suggesting the existence of a radiological safety motivation.

[120] Memorandum and Order on Plaintiffs' Motion for a Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. July 18, 2011) at 3 ("[T]he legislative history of the challenged enactments contains numerous references to 'safety,' some of which may be problematic, some of which may merely reflect legislators' responsible recognition that Vermont cannot regulate radiological health and safety.").

[121] *Pacific Gas,* at 216 (citing U.S. v. O'Brien, 391 U.S. 367 (1968)). However, even in accepting California's purported purpose and rejecting a broader investigation into legislative intent, the *Pacific Gas* court seemed to give weight to a report of the California Assembly Committee on Resources, Land Use, and Energy. *Id*. at 213-16.

[122] *See*, Long Island Lighting Co. v. U.S., 628 F.Supp. 654 (E.D.N.Y. 1986) (noting that the "County is on record [post enactment] ... as opposing the opening of the Shoreham facility on the grounds that no emergency evacuation plan is safe for Suffolk County.").

[123] Skull Valley Band of Goshute Indians v. Nielson, 376 F.3d 1223, 1246 (10th Cir. 2004) ("Unlike the state officials in (continued...)

purpose.[124] If the burden is on Vermont to prove the basis of their non-safety rationale, then the state will likely have to combat the distinct differences between the state regulated market that existed in California during *Pacific Gas*, and the deregulated "merchant" or "wholesale" status of Vermont Yankee.[125] Under the California regulatory regime, a new nuclear power plant would have been owned by a state regulated utility—with the economic consequences of a reactor shutdown being directly felt by the state or statewide customers in the form of rate increases. As a "merchant" generator selling electricity into the interstate market, Vermont and Vermont customers are not liable for the economic failures or increased costs of Vermont Yankee's operation. However, the spectrum of "economic consequences" that may justify a state's decision to shut down an operating reactor goes beyond rule increases. Thus, a state like Vermont may still be able to cite alternative economic concerns sufficient to warrant a shutdown even absent a direct regulatory interest.

If the court finds that any of the Vermont statutes are grounded in radiological safety concerns, then those statutes fall into the field exclusively occupied by the NRC and are therefore preempted. Given that the different statutes may have different purposes, it is entirely possible that the court will find that the state assertion of authority over the operation of Vermont Yankee was grounded in economic interests, while the state assertion of authority over nuclear waste disposal was grounded in safety concerns. Nonetheless, in discerning the purpose behind these statutes, the court will undoubtedly look first to the text of the Vermont statutes. If further investigation into legislative intent is required, the court may have to consider questions of how the statutes interrelate, the applicability of legislative history, and where to place the burden of proving the General Assembly's legislative intent. A finding that the Vermont laws were not grounded in safety concerns does not, however, mean that the laws definitively avoid the field exclusively occupied by the NRC and preempted under the AEA.

New Construction v. Existing Operation

A finding that a state law is grounded in nuclear safety concerns is not "necessary to place the state law within the pre-empted field."[126] As the Supreme Court determined in *Pacific Gas,* state attempts "to regulate the construction or operation of a nuclear power plant ... even if enacted out of non-safety concerns, would nevertheless directly conflict with the NRC's exclusive authority over plant construction and operation."[127] The Court later clarified this standard in *English*—determining that state laws grounded in a permissible non-safety rationale would still fall into the AEA's preempted field only if the law were found to have "direct and substantial" effect on the safety of nuclear plant construction and operation.[128] In *Pacific Gas*, however, the Court clearly held that the complete California moratorium on the construction of new nuclear power plants did

(...continued)

Pacific Gas, the Utah officials here have failed to offer evidence that the provision allowing a county to ban spent nuclear fuel transportation and storage is supported by a non-safety rationale.").

[124] *Pacific Gas*, at 216 ("Therefore, we accept California's avowed economic purpose as the rationale for enacting §25524.2.").

[125] This is especially true is Vermont is asserting economic concerns as the non-safety rationale.

[126] English v. General Elec. Co., 496 U.S. 72, 84 (1990).

[127] *Pacific Gas*, 461 U.S. at 212.

[128] *English*, 496 U.S. at 84-85 ("[s]tate regulation of matters directly affecting the radiological safety of nuclear plant construction and operation, 'even if enacted out of non-safety concerns, would nevertheless [infringe upon] the NRC's exclusive authority.'").

"not seek to regulate the construction or operation of a nuclear power plant."[129] Pursuant to the division of authority established under the AEA, states retain the authority to make the threshold determination, based on reasons unrelated to radiological safety, of whether there exists a need for a new plant. As suggested in Justice Blackmun's concurring opinion, the AEA does not preempt state laws that regulate *whether* a plant is constructed, but only those that regulate *how* a plant is constructed.[130] However, the moratorium at issue in *Pacific Gas* pertained only to the construction of new plants; therefore, the Court did not consider the effect of a prohibition on the operation of an existing plant.

Like the California law at issue in *Pacific Gas*, the Vermont statutes do not seem to regulate *how* Vermont Yankee is to operate, but rather *whether* the plant operates at all. Entergy, however, asserts that the Vermont laws may be distinguished from the California law in that the Vermont General Assembly claims the authority to prohibit the operation of an existing, federally licensed power plant, as opposed to the California law, which simply prohibited the construction of new plants. Entergy asserts that the courts have maintained a distinction between new and existing nuclear power plants—limiting the states' authority to only the threshold decision of whether a plant shall be built, not whether an existing plant may continue to operate.[131] Vermont, on the other hand, contends that the NRC has recognized that the states retain the final authority on whether a plant may operate.[132]

Under the Court's existing jurisprudence, it is clear that a state may, based on a non-safety rationale, prohibit the construction of a new nuclear power plant pursuant to an "initial decision regarding the need for power."[133] Indeed, the Court has made clear that "Congress has left sufficient authority in the States to allow the development of nuclear power to be slowed or even stopped for economic reasons."[134] Additionally, the Court has cited a NRC Atomic Safety and Licensing Board holding that "even in the face of the issuance of a NRC construction permit" states "retain the right" to preclude construction.[135] Thus, it seems likely that a decision by the NRC to approve the construction of a specific plant does not necessarily mean that the plant will be built if the state determines that it is not economically prudent to do so.[136] It is an open question as to whether these established principles also apply in the "operation" context, in

[129] *Pacific Gas*, 461 U.S. at 212.

[130] *Id.* at 225-26 (Blackmun, J., concurring) ("In short, there is an important distinction between the threshold determination whether to permit the construction of new nuclear plants and, if the decision is to permit construction, the subsequent determinations of how to construct and operate those plants. The threshold decision belongs to the State; the latter decisions are for the NRC.").

[131] Memorandum of Law in Support of Plaintiffs' Motion for Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. April 22, 2011) at 15 ("But the Court distinguished between a State's regulation of the development of *new* nuclear power plants by local utilities, as in the California statute, and a State's regulation, as here, of the operation of an *existing* nuclear power plant.").

[132] Memorandum of Law in Opposition of Plaintiffs' Motion for Preliminary Injunction, Entergy Nuclear Vermont Yankee, LLC v. Shumlin, No. 1:11-cv-99 (D. Vt. May 23, 2011) at 8 ("The NRC itself has repeatedly rejected [Entergy's] claim that the granting of an NRC license displaces state authority to regulate nuclear power plants.")

[133] Vermont Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 550 (1978) ("There is little doubt that under the Atomic Energy Act of 1954, state public utility commissions or similar bodies are empowered to make the initial decision regarding the need for power.").

[134] Pacific Gas, 461 U.S. at 223.

[135] *Id*. at 208 (citing Consolidated Edison Co. of N.Y., Inc., 7 N.R.C. 31, 34 (1978)).

[136] For example, the Court has stated that NRC's decision to license a reactor "indicates only that it is safe to proceed with such plants, not that it is economically wise to do so." *Pacific Gas*, 461 U.S. at 218. The Court went on to note that an "NRC order does not and could not compel a utility to develop a nuclear plant." *Id*. at 219.

addition to the "construction" context. However, it could be argued that given the Court's repeated union of "construction and operation," if a state may preclude construction of a plant in the face of a NRC approved construction license, the state may also preclude the operation of the plant in the face of a NRC approved operating license.

Additionally, the Court has established that the AEA reserves to the states the authority to regulate nuclear plants on the basis of a "need" for power. In practice, this principle has been applied with respect to a state threshold determination as to whether *more* nuclear electrical generation is needed. However, it seems logical to suggest that if a state has the authority to determine whether *more* power is needed, it would also have the authority to determine whether *less* electrical generation is needed. Such an interpretation would require that states have the authority to shut down existing power plants where the state determines that current power generation is excessive. Moreover, if courts were to adopt the Entergy position, once a state permitted the construction of a nuclear power plant, it would be unable to reassess that determination in the face of changing power needs. Thus, the state would be potentially bound by its initial decision to permit the construction and operation of a nuclear power plant. For example, if a state had a valid nonsafety rationale for seeking to terminate the operation of a plant, Entergy's interpretation of the AEA's preemptive effects may prevent that state from ceasing operation of the nuclear plant as long as the NRC renews the plant's license.

Vermont argues that the NRC has recognized that the states have the final word in determining whether a federally licensed plant continues to operate. For example, in discussing its newly adopted regulations governing license renewal, the NRC noted that "[a]fter the NRC makes its decision based on the safety and environmental considerations, the final decision on whether or not to continue operating the nuclear plant will be made by the utility, State, and Federal (non-NRC) decisionmakers."[137] While the identified sources may suggest this position, it does not seem that any statute, regulation, or other binding authority exists to confirm the NRC's understanding that the states retain the ultimate decision as to whether a licensed nuclear power plant continues to operate. Additionally, it is congressional intent, rather than the position of the NRC, that is essential in determining the division of authority under the AEA.

The outcome of the Vermont Yankee case will likely have a lasting impact on state authority to regulate and terminate the operation of existing nuclear power plants. Prior case law suggests that the question of whether the Vermont General Assembly enacted Acts 74, 160, and 189 for the purposes of regulating radiological safety will likely be critical to the court's holding. If the court determines that the laws were not grounded in safety concerns and are not otherwise preempted, the case could stand as an expansion of state regulatory authority over nuclear power. To the contrary, if the court finds that the Vermont laws intrude on federal authority and are preempted, the case would highlight states' limited authority over licensed and operating nuclear power plants.

[137] Statement of Considerations for Environmental Review for Renewal of Nuclear Power Plant Operating Licenses, 61 F.R. 28473.

Congressional Authority

Although preemption is a constitutional principle arising from the Supremacy Clause, the extent to which state laws are preempted is a matter of congressional intent. Therefore, Congress retains the authority to define the preemptive scope of a statute. If Congress is unhappy with a court's interpretation of a given statute, Congress is free to amend the statute to make the statute's preemptive effects clear. Likewise, if Congress disagrees with the degree to which a state is regulating in an area, Congress is free to either restrict or enlarge that freedom. It is "up to Congress to determine whether a state has misused the authority left in its hands."[138]

Courts have struggled to define the precise borders of the preemptive field emanating from the NRC's exclusive authority over radiological safety aspects of the construction and operation of nuclear power plants. Given the uncertainties associated with field preemption generally, it is not surprising that the AEA has been subject to a number of conflicting interpretations, which have, in turn, given rise to conflicting case law. Congress, however, is free to adjust or clarify those preemptive boundaries by amending the AEA. The Supreme Court expressly invited Congress to adjust the separation of authority between the states and the federal government if it felt state laws like the California moratorium infringed on federal authority to encourage the development of nuclear power. In *Pacific Gas*, the Court noted that "it is for Congress to rethink the division of regulatory authority in light of its possible exercise by the States to undercut a federal objective. The courts should not assume the role which our system assigns to Congress."[139] If Congress believes that courts have interpreted the AEA in a way that provides states with too much freedom in slowing or preventing the development of nuclear power; or, conversely, that courts have interpreted the AEA in a way that excessively restricts a state's ability to regulate nuclear power within its borders; or if Congress simply seeks to mitigate the uncertainty associated with defining the scope of field preemption under the AEA, then Congress is free to expressly adjust the preemptive field of the AEA accordingly. Preemption is, at its core, controlled by Congress.

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[138] *Pacific Gas*, 461 U.S. at 216.

[139] *Id*. at 223.

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