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NUCLEAR IN MY BACKYARD: WAS THE 5TH CIRCUIT CORRECT IN SPLITTING THE CIRCUITS OVER THE STORAGE OF SPENT NUCLEAR WASTE?

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I. Introduction

When the average person hears the term "nuclear power" it is safe to assume that their mind immediately brings up things like Three Mile Island, Chernobyl, and Fukushima. This is in addition to the fear of weaponized nuclear energy engrained in the public psyche by Hiroshima, Nagasaki, and the ever-present tensions of the Cold War. It is thus understandable that, despite being a relatively safe and clean way to generate electricity, people's emotions when faced with having nuclear power plants or related facilities housing radioactive materials often range from hesitation to outright hostility.[1]

In the United States, development and usage of nuclear power has been and continues to be a highly regulated industry with federal agencies holding almost all regulatory authority.[2] Congress, with their passing of the

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1. See *Safety of Nuclear Power Reactors*, World Nuclear Ass'n, https://world-nuclear.org/information-library/safety-and-security/safety-of-plants/safety-of-nuclear-power-reactors.aspx (Mar. 2022); *Nuclear Explained*, U.S. Energy Info. Admin., https://www.eia.gov/energyexplained/nuclear/nuclear-power-and-the-environment.php (Nov. 7, 2022); Victoria L. Daubert & Sue Ellen Moran, *Origins, Goals, and Tactics of the U.S. Anti-Nuclear Protest Movement*, RAND Corporation (Mar. 1985), https://www.rand.org/content/dam/rand/pubs/notes/2005/N2192.pdf

2. See Pac. Gas & Elec. Co. V. State Energy Res. Conservation & Dev. Comm'n, 461 U.S. 190, 207 ("The AEC, however, was given exclusive jurisdiction to license the transfer,

Atomic Energy Act in 1946 and subsequent 1954 amendments, created the Atomic Energy Commission and provided the agency with vast authority to regulate the burgeoning nuclear industry.[3] Today, the nuclear industry is regulated primarily by the Nuclear Regulatory Commission ("NRC" or "Commission"), the Department of Energy, and the Environmental Protection Agency ("EPA").[4] Despite tight federal controls, however, states and communities remain aloof when it comes to hosting nuclear sites in their proverbial backyards, and there is consistent litigation regarding nuclear sites across the country.[5]

One of those legal battlegrounds regards where to put the waste that is left behind after using nuclear fuel. This waste, known as spent nuclear fuel, is highly radioactive and requires special processes to be stored and disposed of safely. Currently, this material is primarily stored in facilities located at the reactor sites.[6] But as these facilities began to fill, the need for a more permanent solution needed to be found. This growing problem led to the passage of the Nuclear Waste Policy Act of 1982 ("NWPA"), where Congress laid a path for the United States to develop a permanent repository to dispose of spent nuclear fuel.[7] Delays on enacting this legislation ensued, and growing pressure has mounted to find alternative, stop-gap measures.[8]

One of those alternatives is for the NRC to license private companies to build and operate storage facilities separate from the reactor sites. However, this option, much like the power plants themselves, has met with pushback from the states and communities set to host these storage facilities. At first, the courts sided with the NRC, holding that the authorities granted to the agency in the Atomic Energy Act included the authority to license these

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delivery, receipt, acquisition, possession and use of nuclear materials. Upon these subjects, no role was left for the states").

3. *Id.* at 206–07.

4. See *Summary of the Atomic Energy Act*, Env't Prot. Agency, https://www.epa.gov/laws-regulations/summary-atomic-energy-act#:~:text=The%20Atomic%20Energy%20Act%20(AEA,of%20the%20AEA%20has%20been (last visited Jan. 28, 2024).

5. See *Nuclear Law Case Chart*, Nuclear Energy Agency, https://oecd-nea.org/jcms/pl_70278/nuclear-law-case-chart-june-2022 (June 2022).

6. *Blue Ribbon Commission on America's Nuclear Future, Report to the Secretary of Energy*, Dep't of Energy, p. 14, https://www.energy.gov/ne/articles/blue-ribbon-commission-americas-nuclear-future-report-secretary-energy (Jan. 2012).

7. See 42 U.S.C. §§ 10101–10270.

8. See generally *Nuclear Waste is Piling Up. Does the U.S. Have a Plan?*, Scientific American, https://www.scientificamerican.com/article/nuclear-waste-is-piling-up-does-the-u-s-have-a-plan/ (March 6, 2023).

away-from-reactor storage facilities.[9] However, the recent decision by the 5th Circuit in *Texas v. Nuclear Regulatory Agency* has blown open a circuit split, holding that not only did the Atomic Energy Act not grant the licensing authority the NRC sought, but the Nuclear Waste Policy Act also forbade it.[10] Furthermore, the court found that the NRC did not get the benefit of *Chevron* deference, as the fate of spent nuclear fuel fell under the major questions doctrine.[11]

The goal of this article is to determine whether the 5th Circuit was correct in its decision to deny the NRC the authority to license away-from-reactor storage facilities. To achieve this, it will discuss (1) the history of spent nuclear waste and the efforts to adequately store and dispose of the waste, (2) the preceding cases that set one side of the circuit split, (3) the 5th Circuit's holding in *Texas* and its side of the split, and (4) analysis of the case, including statutory interpretation of the relevant statutes, namely the Atomic Energy Act and Nuclear Waste Policy Act.

By analyzing these factors, it should become clear that while the 5th Circuit was not completely correct in its analysis, the final holding is correct, and the NRC does indeed not have the authority to issue the licenses.

II. History of Storage of Spent Nuclear Waste

Since the development of nuclear power in the 1940s, there has been a growing problem of what to do with the waste that nuclear power generation develops, particularly the spent fuel and other "high-level waste."[12] The spent fuel, once powering the reactors, is highly radioactive for long periods of time, with some isotopes, like iodine-129, having half-lives in the millions of years.[13] The dangerous levels of radiation this waste emits have created a need for both short-term and more permanent solutions.

Currently, nuclear plants have two methods of storing spent nuclear fuel on-site. First, the fuel rods are submerged in a pool of water that is forty

9. Bullcreek v. Nuclear Regul. Comm'n, 359 F.3d 536 (D.C. Cir. 2004); Skull Valley Band Of Goshute Indians v. Nielson, 376 F.3d 1223 (10th Cir. 2004).

10. See Texas v. Nuclear Regul. Comm'n, 78 F.4th 827 (5th Cir. 2023).

11. Id.

12. Andrew Newman, *The Good, the Bad and the Extraterrestrial: The Decades-Long Struggle to Dispose of Nuclear Waste*, Nuclear Threat Initiative (Aug. 31, 2021), https://www.nti.org/atomic-pulse/the-good-the-bad-and-the-extraterrestrial-the-decades-long-struggle-to-dispose-of-nuclear-waste/.

13. Id.

feet deep and coated with boron to absorb the neutrons that are emitted.[14] However, the capacity of these pools has been filled at most reactor sites, necessitating the use of the second option, "dry cask storage."[15] This method involves immersing the used fuel rods in a steel container filled with an inert gas, then inserting the steel container into a cask made of concrete.[16] Both these methods leave the spent fuel on-site at the nuclear power plant, as there is no permanent solution for spent fuel or other non-military high radioactive waste.[17]

Attempting to address this issue, Congress passed the Nuclear Waste Policy Act of 1982 (NWPA), finding in part that "a national problem has been created by the accumulation of (A) spent nuclear fuel from nuclear reactors; and (B) radioactive waste from . . . reprocessing of spent nuclear fuel."[18] Congress tasked the Department of Energy to identify potential sites for a permanent repository for radioactive waste.[19] In 1987, Congress amended the NWPA, narrowing the potential sites to Yucca Mountain in Nevada.[20] However, plans for the Yucca Mountain site were abandoned due primarily to "social and political opposition."[21] Therefore, there is no current solution for the permanent storage of spent fuel or other high level radioactive waste.[22]

To address the void left by the lack of a permanent disposal site for nuclear material, the Nuclear Regulatory Commission, citing authority under the Atomic Energy Act (AEA), specifically 42 U.S.C. §§ 2073, 2092, 2111, began to grant licenses for possession and interim storage of spent

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14. David Biello, *Spent Nuclear Fuel: A Trash Heap Deadly for 250,000 Years or a Renewable Energy Source?*, Sci. American, (Jan. 28, 2009), https://www.scientificamerican.com/article/nuclear-waste-lethal-trash-or-renewable-energy-source/#:~:text=The%20U.S.%20produces%20as%20much,%2C%20Me.%2C%20in%201997.

15. Id.

16. Id.

17. Andrew Newman, *The Good, the Bad and the Extraterrestrial: The Decades-Long Struggle to Dispose of Nuclear Waste*, Nuclear Threat Initiative (Aug. 31, 2021), https://www.nti.org/atomic-pulse/the-good-the-bad-and-the-extraterrestrial-the-decades-long-struggle-to-dispose-of-nuclear-waste/.

18. 42 U.S.C.A. § 10131 (West).

19. 42 U.S.C.A. § 10132 (West).

20. 42 U.S.C.A. § 10172 (West).

21. *Commercial Nuclear Waste: Effects of a Termination of the Yucca Mountain Repository Program and Lessons Learned*, Gov't Accountability Off., (Apr. 2011), https://www.gao.gov/assets/gao-11-229.pdf.

22. *Blue Ribbon Commission on America's Nuclear Future, Report to the Secretary of Energy*, supra note 6.

nuclear fuel at off-site facilities.[23] One applicant for such a license was Interim Storage Partners, LLC. (ISP), which proposed an interim storage facility in the Permian Basin, specifically Andrews, County, Texas.[24]

The State of Texas, Fasken Land and Minerals, Ltd., an oil and gas extraction company, and Permian Basin Land and Royalty Owners (PBLRO), an association seeking to protect the interests of the Permian Basin landowners, petitioned for review of the license, claiming, *inter alia*, that the NRC did not have authority under the AEA to issue a license for interim, off-site storage.[25]

III. Previous Decisions: Bullcreek v. NRC *&* Skull Valley Band of Goshute Indians v. Nielson

Texas v. NRC marks a significant turn in the analysis of the AEA and the NWPA and establishes a circuit split, as both the D.C. Circuit and the Tenth Circuit have previously ruled that the NRC has authority under the AEA to license and regulate interim storage for spent nuclear fuel.[26]

In *Bullcreek v. NRC*, the D.C. Circuit stated that while "the AEA does not specifically refer to the storage or disposal of spent nuclear fuel, it has long been recognized that the AEA confers on the NRC authority to license and regulate the storage and disposal of such fuel."[27] Using this assumption, the D.C. Circuit held that 42 U.S.C. § 10155(h) of the NWPA did not repeal the NRC's authority to license away-from-reactor nuclear fuel storage, as repeal by implication is not favored.[28]

The Tenth Circuit in *Skull Valley Band of Goshute Indians v. Nielson*, also dealing with the battle between Utah and the NRC, was persuaded by the D.C. Circuit and refused to revisit the issue of the NRC's authority under the AEA, instead determining if Utah's state provisions regarding the storage of nuclear material in the state were pre-empted by federal law.[29]

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23. Brief for Fed. Respondents at 17, Texas v. NRC 78 F.4th 827 (5th Cir. 2023) (No. 21-60743).

24. Texas, 78 F.4th at 831.

25. See Id.

26. *See* Bullcreek, 359 F.3d at 538; Skull Valley Band Of Goshute Indians, 376 F.3d at 1232.

27. Bullcreek, 359 F.3d at 538 (citing Pac. Gas & Elec. Co. v. State Energy Resources Conservation & Development Com'n, 461 U.S. 190 (1983); Illinois v. Gen. Elec. Co., 683 F.2d 206 (7th Cir. 1982); Jersey Cent. Power & Light Co. v. Township of Lacey, 772 F.2d 1103 (3d Cir. 1985)).

28. Bullcreek, 359 F.3d at 542.

29. Skull Valley Band Of Goshute Indians, 376 F.3d at 1232.

IV. The 5th Circuit's Decision in Texas v. NRC

The 5th Circuit decided, in an opinion written by Judge James Ho, that the NRC does not have authority under the AEA to issue an interim license for off-site storage of spent nuclear fuel.[30] Furthermore, the issuing of the license "contradicts Congressional policy expressed in the Nuclear Waste Policy Act."[31]

The NRC argued that since the AEA grants the Commission authority to issue licenses for possession of "special nuclear material, source material," and "byproduct material," each of which are constituent parts of spent nuclear fuel, the NRC thus has the authority under the AEA to issue licenses for storage facilities for the spent nuclear fuel.[32] However, the court disagreed, stating that the AEA only authorized the NRC to issue licenses for "certain enumerated purposes—none of which encompass storage or disposal of material as radioactive as spent nuclear fuel."[33]

The court's analysis of the AEA regarding whether the Commission had statutory authority found that § 2073 authorizes the NRC to issue licenses "to transfer or receive in interstate commerce, transfer, deliver, acquire, possess, own, receive possession of or title to . . . special nuclear material."[34] Section 2093 similarly authorizes the NRC to "issue licenses for and to distribute source material within the United States."[35] However, both sections limit the NRC's authority to issue these licenses to four specific purposes:

> (1) for the conduct of research and development activities of the types specified in section 2051 of this title; (2) for use in the conduct of research and development activities or in medical therapy under a license issued pursuant to section 2134 of this title; (3) for use under a license issued pursuant to section 2133 of this title; or (4) for any other use approved by the Commission as an aid to science or industry.[36]

Section 2133 relates to "utilization or production facilities for industrial or commercial purposes."[37] Both "utilization facility" and "production

30. Texas, 78 F.4th at 840.
31. Id.
32. 42 U.S.C. §§ 2073, 2093, 2111 (West); Texas, 78 F.4th at 840.
33. Texas, 78 F.4th at 840.
34. 42 U.S.C.A. § 2073 (West).
35. 42 U.S.C.A. § 2093 (West).
36. 42 U.S.C.A. §§ 2073 and 2093 (West).
37. 42 U.S.C.A. § 2133 (West).

facility" are defined terms under the AEA. An "utilization facility" means "any equipment or device, except an atomic weapon, determined by rule of the Commission to be capable of making use of special nuclear material . . . or peculiarly adapted for making use of atomic energy."[38] A "production facility" means "any equipment or device determined by rule of the Commission to be capable of the production of special nuclear material." Utilization and production facilities are essentially nuclear reactors, used in the production and use of nuclear fuel, and thus are unrelated to the storage of spent nuclear fuel.

Section 2111, which governs the licensing and disposal of "byproduct material," also did not grant the NRC authority to grant a license for off-site interim storage of spent nuclear fuel. According to the court, § 2111(a) only governs "'research or development purposes, for medical therapy, industrial uses, agricultural uses, or such other useful applications as may be developed.'"[39] Section 2111(b), which covers the disposal of "byproduct material," cross-references § 2014(e)(3)-(4), which the court points out refers to material that "'would pose a threat similar to the threat posed by . . . radium-226 to the public health and safety.'"[40] The court reasons that this is an important distinction as radium has a much shorter half-life than some of the radioactive elements found in spent nuclear fuel.[41]

Unconvinced of the NRC's authority under statute, the court then looked at the decision of sister circuits, namely the D.C. Circuit with *Bullcreek v. NRC*, 359 F.3d 536 (D.C. Cir 2004) and the 10th Circuit with *Skull Valley Band of Goshute Indians v. Nielson*, 376 F.3d 1223 (10th Cir. 2004).[42] While both cases stated that the NRC had authority under the AEA to grant licenses for away-from-reactor storage facilities, the 5th Circuit disagreed, stating that the sister courts "assumes the Commission's authority without analyzing the statute."[43]

Not satisfied, the court went on to analyze the NWPA and its regulations regarding the storage of spent nuclear fuel.[44] The court begins this analysis by discussing how Congress intended Yucca Mountain to be the permanent solution, stating that the NWPA was "obviously designed to prevent the Department of Energy from delaying the construction of Yucca Mountain

38. 42 U.S.C.A. § 2014 (West).
39. Texas, 78 F.4th at 841 (citing 42 U.S.C. § 2111(a)).
40. Id. (quoting § 2014(e)(3)-(4).
41. Id.
42. Id. at 841–42.
43. Id. at 842.
44. Id.

as the permanent facility while using temporary facilities."[45] Keeping that interpretation of the intent of the NWPA in mind, the court then looked at other storage methods touched on by the NWPA.[46]

First was temporary storage. The court, quoting various parts of 42 U.S.C. §§ 10151–10157, emphasized that the interim storage envisioned in the NWPA is that of on-site storage.[47] The court, still quoting the NWPA, stated that the federal government has only a limited responsibility to provide "not more than 1,900 metric tons of capacity for interim storage" away-from-reactor storage only where civilian reactors could not reasonably store the spent nuclear fuel and maintain normal operations.[48] The court noted that the license in dispute permitted "storage of at least 5,000 and as much as 40,000 metric tons of nuclear waste."[49]

The second alternative method the court discussed was retrievable storage.[50] Quoting 42 U.S.C. §§ 10161–10169, the court stated that while the Department of Energy is authorized by statute to build and operate a facility for retrievable storage, it is subject to certain conditions.[51] One of said conditions listed in the statute is that "construction of such facility may not begin until the Commission has issued a license for the construction of a repository [i.e., Yucca Mountain]."[52] The NRC, despite a Congressional mandate to do so, has declined to review Department of Energy's license application for the Yucca Mountain repository.[53]

The court concluded that the NWPA "prioritizes construction of the permanent repository and limits temporary storage to private at-the-reactor storage or at federal sites."[54] As the interim storage facility license in dispute would neither be at a reactor nor at a federally owned and operated facility, the court concluded that the NWPA does not permit the NRC to issue such a license.[55]

While the court concluded that the statutes were unambiguous, it did not stop there, adding in dicta that, even if there was ambiguity in the statute,

45. Id. at 843 (quotation removed and cleaned up).
46. Id.
47. Id.
48. Id.
49. Id.
50. Id.
51. Id.
52. Id. (quoting 42 U.S.C. § 10168(d)(1)).
53. Id. at 833.
54. Id. at 844.
55. Id.

that the Commission is not entitled to deference.[56] Citing *West Virginia v. EPA*, 142 S. Ct. 2587 and its adoption of the major questions doctrine, the *Texas* court invoked the doctrine, stating that "[d]isposal of nuclear waste is an issue of great economic and political significance."[57] Referencing the political debate over the fate of Yucca Mountain and the Congressional findings in the NWPA, the court stated that "[a] decision of such magnitude and consequence rests with Congress itself, or an agency acting pursuant to *clear* delegation from that representative body."[58] The court ended by stating that there was not clear delegation under the AEA and that the NWPA contradicted the NRC's claim to the contrary.[59]

V. Analysis

A. Reviewing the split and other relevant case law

The 5th Circuit, in its decision, thoroughly discussed the relevant portions of the Atomic Energy Act and the Nuclear Waste Policy Act. However, just because a statute is thoroughly discussed does not mean that the conclusion was correct. Before taking a closer look at that analysis, it is important to first review the split and understand why the 5th Circuit chose to take a different angle.

Looking at the prior holdings of the D.C. and 10th Circuits, it is easy to see why the 5th Circuit was not persuaded. In *Bullcreek v. NRC*, the D.C. Circuit, when analyzing the AEA, conceded that the statute did not refer to "storage or disposal of spent nuclear fuel."[60] Nevertheless, the court stated that "it has long been recognized" that the AEA granted the NRC the authority to "license and regulate the storage and disposal of such fuel."[61] Besides listing three cases the court claims to validate its holding, that is the only analysis provided. The 10th Circuit is somehow more lacking, holding that "[w]e are persuaded by the D.C. Circuit's opinion and will thus not revisit the issues surrounding the NRC's authority to license away-from-reactor SNF storage facilities."[62] Thus, the only authority cited by these two circuits regarding the Commission's licensing authority under the AEA are the three cases cited by *Bullcreek*.

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56. Id.
57. Id. (punctuation and citation omitted).
58. Id. (quoting *West Virginia v. EPA*, 142 S. Ct. 2587) (emphasis in original).
59. Id.
60. Bullcreek, 359 F.3d at 538.
61. Id.
62. Skull Valley Band Of Goshute Indians, 376 F.3d at 1232.

The 5th Circuit dismissed these cases as not applicable to the question posed in *Texas*, stating that they only "dealt with separate questions of preemption and the role of states in this [nuclear storage] scheme," and were thus "irrelevant"[63] However, instead of dismissing these cases off hand, a closer look is warranted, if only to better understand why this split was there to be opened.

What do these cases hold that the D.C. and 10th Circuits found persuasive that the 5th Circuit did not? Looking at the two circuit court cases first, the 5th Circuit was right in its dismissal as irrelevant. The first, *Jersey Central Power & Light Co. v. Township of Lacey*, is regarding an ordinance banning importation of spent nuclear fuel for storage at an existing reactor site.[64] The court held that the importation of nuclear fuel is preempted by the AEA.[65] The second, *Illinois v. General Electric Co.*, dealt with a state ban on "dispos[al] of, stor[age of], or accept[ance of] any spent nuclear fuel which was used in any power generating facility located outside this State, or transport into this State for disposal or storage any spent nuclear fuel which was used in any power generating facility located outside this State."[66] While this case did involve an away-from-reactor storage facility, the question was not whether the NRC could license the facility, but whether the state could ban transport of spent nuclear fuel from out of state to an existing facility.[67] These cases did not provide any guidance to the questions posed in *Texas*, only making it clear that there is little to no room for state regulation of storage facilities after they are built.

The last case, and the only Supreme Court case cited by the D.C. Circuit is *Pacific Gas and Elec. Co. v. State Energy Resources Conservation & Development Com'n.*[68] This case involved utility companies challenging two California statutes, stating they were preempted by the Atomic Energy Act.[69] The first statute mandated "adequate capacity" on-site for spent nuclear fuel, while the second placed a moratorium on new nuclear plant construction until a permanent storage solution was found.[70] While the Court found that a decision on the first statute was not yet ripe for review,

63. Texas, 78 F.4th at 842.

64. See generally Jersey Cent. Power & Light Co. v. Lacey Twp., 772 F.2d 1103 (3d Cir 1985).

65. Id. at 1109.

66. People of State of Ill. v. Gen. Elec. Co., 683 F.2d 206, 208 (7th Cir 1982).

67. See generally Illinois, 683 F.2d 206.

68. See Bullcreek, 359 F.3d 536.

69. Pac. Gas & Elec. Co., 461 U.S. at 198.

70. Id. at 197.

the second statute was ripe, and thus subject to review to determine whether it was preempted.[71] The Court held that the moratorium on new nuclear reactors was not preempted by federal law, provided that the ban was not out of safety concerns, as "the federal government maintains complete control of the safety and "nuclear" aspects of energy generation."[72] The Court states that while the state has authority over "the need for additional generating capacity, the type of generating facilities to be licensed, land use, ratemaking, and the like," the federal government, through the NRC, "was given exclusive jurisdiction to license the transfer, delivery, receipt, acquisition, possession and use of nuclear materials."[73]

On an initial reading, this holding, or rather dicta is pretty damning to Texas and the other opponents of the storage facility in question. The NRC's argument that they have the authority grant a license to ISP to "acquire" and "possess" nuclear material is clearly backed up by the Supreme Court in *Pacific Gas*. This is exactly what the NRC argues in their brief, stating that the license issued by the Commission is for ISP to "possess" the spent nuclear material in the facility in question.[74] This is a compelling argument that should not be easily dismissed.

However, when digging deeper, there are issues that arise when applying *Pacific Gas* to the facts in *Texas*. First, the Court stated that the federal government had exclusive licensing jurisdiction over "transfer, delivery, receipt, acquisition, possession and use of nuclear materials;" but that long list leaves out the words "storage" and "disposal."[75] The Court listed seven different things the NRC can grant licenses for regarding nuclear material, yet conveniently forgot to mention the NRC could license the storage or disposal of spent nuclear fuel, which is what the ISP facility is actually proposing to do.

It can be argued, and the NRC does just this in their *Texas* brief, that storing spent nuclear fuel is the same as "possessing" it, and thus the Supreme Court's dicta would apply here.[76] However, Congress, when granting the authority to what became the NRC to license "possession," expressly limited that authority, making their intentions clear that only for

71. Id. at 200.
72. Id. at 212.
73. Id. at 207, 212.
74. Brief for Federal Respondents, p.38 Texas 78 F.4th 827 (2023) (No. 21-60743).
75. Pac. Gas & Elec. Co., 461 U.S. at 207.
76. Brief for Federal Respondents, p.38 Texas 78 F.4th 827 (2023) (No. 21-60743).

certain purposes would the NRC be allowed to grant a license to possess various types of nuclear material, including spent nuclear waste.[77]

As the 5th Circuit correctly noted, the other side of the circuit split is unconvincing, and the other, more tangentially related cases did not provide any real guidance other than dicta that itself can be interpreted in different ways. This means that, while determining what Congress meant in the Atomic Energy Act and Nuclear Waste Policy Act would always be the determining factor in deciding the case, the analysis of the statute will have to be done fresh and without the guidance of precedent.

B. Statutory Analysis of the Atomic Energy Act

Spent nuclear waste, while not specifically mentioned in the Atomic Energy Act, is made up of a variety of different materials that are controlled by the AEA. These materials are called, according to the AEA, special nuclear material, source material, and byproduct material, and are regulated each by different sections of the AEA.[78] Those applicable sections are §§ 2073, 2093, and 2111 respectively. Therefore, to determine what authority the NRC has regarding spent nuclear fuel, it is required to go through each section individually.

Starting with § 2073, which regulates special nuclear material, the weakness of the NRC's "possession" becomes clear. Congress had stipulated that the reasons to obtain a license for possession of special nuclear material is to be for research and development, medical purposes, use in a reactor, or other reasons pursuant to this chapter.[79] The first three would not apply in this case, as the storage facility is not involved in research and development, medical therapy, or use of the material in a reactor. Therefore, the lynchpin of the argument is § 2073(a)(4): "for such other uses as the Commission determines to be appropriate to carry out the purposes of this chapter."[80]

To answer what authority § 2073(a)(4) gives the NRC, it is required to do some statutory interpretation. One theory is that of *ejusdem generis*, Latin for "of the same kind."[81] This would limit the catchall provided by the statute to only items similar to those listed above, essentially research and development, medical uses, or utilization.

77. See 42 U.S.C.A. §§ 2073, 2093, 2111 (West).
78. Texas, 78 F.4th at 840; see Bullcreek, 359 F.3d at 538.
79. 42 U.S.C.A. § 2073 (West).
80. 42 U.S.C.A. § 2073 (West).
81. Ejusdem Generis, Black's Law Dictionary (12th ed. 2024).

Ejusdem generis, however, is not unlimited, as noted by the Supreme Court in *Gooch v. United States*:

> The rule of ejusdem generis, while firmly established, is only an instrumentality for ascertaining the correct meaning of words when there is uncertainty. Ordinarily, it limits general terms which follow specific ones to matters similar to those specified; but it may not be used to defeat the obvious purpose of legislation.[82]

Therefore, before using ejusdem generis, it must be determined if Congress had an obvious purpose to include the catch-all. Relying on the plain meaning of the words in question, § 2073(a)(4) gives the Commission authority to license for reasons it deems appropriate to carry out the purposes of chapter 23 of title 42 of the United States Code. In § 2013, Congress provided those purposes: (1) "conducting, assisting, and fostering research and development;" (2) "for the dissemination of unclassified scientific and technical information and for the control, dissemination, and declassification of Restricted Data, subject to appropriate safeguards;" (3) "for Government control of the possession, use, and production of atomic energy and special nuclear material, whether owned by the Government or others, so directed as to make the maximum contribution to the common defense and security and the national welfare;" (4) "to encourage widespread participation in the development and utilization of atomic energy for peaceful purposes;" (5) for "international cooperation to promote the common defense and security and to make available to cooperating nations the benefits of peaceful applications of atomic energy;" and (6) for "a program of administration which will be consistent with the foregoing policies and programs, with international arrangements, and with agreements for cooperation, which will enable the Congress to be currently informed so as to take further legislative action as may be appropriate."[83]

Applying a plain reading to these purposes, none give the NRC express authority to license away-from-reactor storage facilities, as the facility would not promote the listed purposes of research and development, dissemination of information, utilization, common defense, international agreements, or informing Congress. The closest arguable purpose is for "government control of the possession . . . [of] special nuclear material, whether owned by the Government or others, so directed as to make the

82. Gooch v. United States, 297 U.S. 124, 128 (1936).

83. 42 U.S.C.A. § 2013 (West).

maximum contribution . . . the national welfare."[84] The argument that the license of an away-from-reactor storage facility provides for the national welfare, while not compelling, is present. However, at best that means there is ambiguity and thus ejusdem generis is required to resolve that ambiguity.

Applying ejusdem generis to § 2073(a) does not help the Commission's argument. Since the purposes of the § 2073(a)(1)–(3) are related to research and development, medicine, and utilization of nuclear material, the purpose of the § 2073(a)(4) catch-all should be construed to be for purposes related to those reasons. Since away-from-reactor storage does not apply to those reasons to grant licenses, § 2073(a) cannot be used as giving the NRC statutory authority to issue a license to ISP for their facility.

Section 2093, which covers source material, is similarly faulty in its language. Dealing with the distribution of source material, the statute closely mirrors the language found in § 2073.[85] However, its catch-all is more restrictive, limiting licenses to only "any other use approved by the Commission as an aid to science or industry."[86] Using the same statutory analysis as with § 2073, which binds the catch-all to dealing with research and development and medical uses, it cannot be said in good faith that storage of spent nuclear fuel is aiding "science" or "industry;" thus this catch-all cannot apply.

Looking at the final statute cited by the NRC as granting it authority to issue the license in question, the analysis begins to look less clear. At first glance, § 2111 breathes some life into the NRC's argument. This section deals with byproduct material, which is defined in § 2014(e) as:

> (1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material; (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content; (3)(A) any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or . . . (4) any discrete source of naturally occurring radioactive material, other than source material, that (A) the Commission, in consultation with the Administrator of the Environmental Protection Agency, the

84. 42 U.S.C.A. § 2013(c) (West).
85. Compare 42 U.S.C.A. § 2093 with § 2073 (West).
86. 42 U.S.C.A. § 2093(a)(4) (West).

> Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and (B) before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.[87]

Section 2111(a) only authorizes the NRC to issue licenses for use in a variety of different areas, of which storage is not one.[88] However, § 2111(b) does authorize the disposal of byproduct material in a disposal facility as long as it is "adequate to protect public health and safety; and is licensed by the Commission."[89] This appears, at first glance, to be the smoking gun, authorizing the NRC to issue the license in question. However, the 5th Circuit did not accept this argument.

In its analysis of § 2111(b), the 5th Circuit focused on the definition of byproduct material found in § 2014(e)(3)–(4), which is cross-referenced in § 2111(b).[90] Particularly, the court homed in on the statute's reference to radium-226 and isotopes with similar threats.[91] The court said that while radium-226 has a half-life of *only* 1,600 years compared to some of the other isotopes found in nuclear fuel, which have half-lives magnitudes greater, then Congress must have not meant § 2111(b) to apply to spent nuclear fuel.[92]

While attempting to not delve too deeply into the science of radioactive decay, there are some concepts that need to be understood to better understand what the law is saying. Half-life refers to the time that radioactive material takes to decay half its radioactivity.[93] However, there are other factors than half-life when considering the dangers of radioactive materials, such as the type and amount of particles emitted.[94] For example, uranium-238 has a half-life of 4.5 billion years, much longer than the 1,600

87. 42 U.S.C.A. § 2014(e) (West).
88. 42 U.S.C.A. § 2111(a) (West).
89. 42 U.S.C.A. § 2111(b) (West).
90. See Texas, 78 F.4th at 841; 42 U.S.C.A. § 2111(b) (West).
91. Texas, 78 F.4th at 841.
92. Id.
93. *Frequently Asked Questions Regarding Radium-226*, Nuclear Regul. Comm'n., https://scp.nrc.gov/narmtoolbox/radium%20faq102008.pdf (last visited Jan. 28, 2024).
94. Radium-226, p.2, Wash. State Dept. of Health (July 2002), https://doh.wa.gov/sites/default/files/legacy/Documents/Pubs/320-081_ra226_fs.pdf.

years of radium-226.[95] However, radium-226 is a million times more active in emitting particles than uranium.[96] This means that while radium-226 might not last as long as other radioactive materials, it does not take long for radium-226 to do its damage. The notebooks of Marie and Pierre Curie, who discovered radium in 1898, are still too radioactive to safely handle today.[97] Additionally, § 2014(e)(3)–(4) reference "discrete" sources of radium-226.[98] Discrete is defined by the NRC as "a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical, or research activities."[99] Again, trying to avoid a scientific rabbit hole, this means that the radioactive material is more concentrated, and thus the radiation emitted by that material is more potent than found in nature.

Since concentrated radium-226 is the bar Congress set as being able to be licensed for disposal at an appropriate facility, to be beyond Congress's contemplations is a very high hill to climb. The 5th Circuit's sole reliance on measurements of half-life is a half measure at best, because, looking at other factors, the NRC's argument is plausible.

However, there is a glaring hole in the NRC's argument that even a reversal of the 5th Circuit's holding regarding § 2111 could not remedy. Spent nuclear fuel contains source material, special nuclear material, and byproducts.[100] Congress set out specific instructions on how and when the NRC can issue licenses for each.[101] Since it has been determined that the NRC does not have authority to issue license for away-from-reactor storage and disposal of special nuclear material or source material without some underlying research & development, medical, or utilization purpose, even if there is authority to license the disposal of byproducts, the NRC cannot use it to bypass the other restrictions. Logically, it makes sense for Congress to write it this way, as byproducts that are no longer useful need to be disposed of, while special nuclear material and source material still have

95. *What is Radiation? Properties of Radioactive Isotopes*, Centers for Disease Control and Prevention, https://www.cdc.gov/nceh/radiation/isotopes.html#:~:text=Uranium%20is%20a%20radionuclide%20that,when%20the%20Earth%20was%20formed (last visited Jan. 28, 2024).

96. *Radium-226*, supra note 94, at p.2,.

97. Id.

98. 42 U.S.C.A. § 2014(e)(3)–(4) (West).

99. 10 C.F.R. § 30.4 (2015).

100. See 42 U.S.C.A. §§ 2013(e), 2013(z), 2013(aa) (West).

101. 42 U.S.C.A. § 2073, 2093, 2111 (West).

some use. While Congress did grant the NRC broad swaths of authority, it unambiguously left out the authority required to license the ISP facility.

C. Statutory Analysis of the Nuclear Waste Policy Act

While Congress did not give the NRC the authority to license away-from-reactor storage facilities for spent nuclear fuel, it did provide a solution to the growing problem of accumulating nuclear waste in the NWPA. Citing the "national problem has been created by the accumulation of spent nuclear fuel from nuclear reactors," Congress passed the NWPA with the purpose of, among other things, "establish[ing] the Federal responsibility, and a definite Federal policy, for the disposal of such waste and spent fuel."[102] As the 5th Circuit pointed out in *Texas*, the NWPA is a "comprehensive scheme to address the accumulation of nuclear waste," providing clear instructions as to what Congress intended to happen regarding spent nuclear fuel.[103]

Looking through the NWPA, Congress intended that spent nuclear fuel would be disposed of permanently in a federally controlled repository, eventually settling on Yucca Mountain in Nevada.[104] Congress was serious about wanting a permanent repository, designing the NWPA to prevent the delay of the permanent repository while using temporary storage, like the ISP facility in question.[105] In addition to setting a method to establish a permanent repository, Congress also set up other methods for handling the problem of spent nuclear waste, including interim storage.

Congress, when dealing with interim storage through the NWPA, found that those primarily responsible for providing interim storage of spent nuclear fuel were those "owning and operating civilian nuclear power reactors."[106] These owners and operators were to do so by "maximizing, to the extent practical, the effective use of existing storage facilities at the site of each civilian nuclear power reactor, and by adding new onsite storage capacity in a timely manner where practical."[107] Note that Congress explicitly said the storage was to be at the reactor site, when possible, not at an away-from-reactor site like the ISP facility. Further, Congress found that the federal government should "encourage and expedite the effective use of

102. 42 U.S.C.A. § 10131(a)(2) (West); 42 U.S.C.A. § 10131(b)(2) (West).

103. Texas, 78 F.4th at 842.

104. *See* 42 U.S.C.A. § 10131(a)(4), (b)(1) (West).; 42 U.S.C.A. § 10172 (West).

105. Nat'l Ass'n of Regul. Util. Comm'rs v. U.S. Dep't of Energy, 736 F.3d 517, 519 (D.C. Cir. 2013).

106. 42 U.S.C.A. § 10151(a)(1) (West).

107. 42 U.S.C.A. § 10151(a)(1) (West).

existing storage facilities and the addition of needed new storage capacity at the site of each civilian nuclear power reactor."[108] Again, Congress is explicitly stating that storage should be at the reactor site if at all possible. Finally, when at reactor storage is not practical, Congress does give responsibility to the federal government to provide "not more than 1,900 metric tons of capacity for interim storage of spent nuclear fuel for civilian nuclear power reactors."[109]

There is a lot to unpack regarding the 1,900 metric ton limit. Congress, expanding on this storage limit, specified that the extra storage would be provided through one or more of the following methods: "(A) use of available capacity at one or more facilities owned by the Federal Government on January 7, 1983, including the modification and expansion of any such facilities; (B) acquisition of any modular or mobile spent nuclear fuel storage equipment, including spent nuclear fuel storage casks, and provision of such equipment, to any person generating or holding title to spent nuclear fuel, at the site of any civilian nuclear power reactor operated by such person or at any site owned by the Federal Government on January 7, 1983;" and "(C) construction of storage capacity at any site of a civilian nuclear power reactor."[110] Each of these methods involves interim storage facilities being at one of two locations: at the site of the reactor or in a facility owned by the federal government prior to January 7, 1983. The ISP facility in question is an away-from-reactor facility and is privately owned. To issue a license for a privately owned, away-from-reactor facility to store between three and twenty-one times the maximum amount of excess interim storage mandated by Congress is a blatant violation of what Congress expressly wrote and intended.

Congress did authorize another type of facility: a monitored retrievable storage facility. This type of facility could work with the ISP facility, as it was envisioned as an away-from-reactor facility for storage of "spent nuclear fuel and high-level radioactive waste resulting from civilian nuclear activities."[111] However, there are several limitations placed on the construction of a monitored retrievable storage facility, most importantly in this case is that "construction of such facility may not begin until the Commission has issued a license for the construction of a [permanent] repository."[112] Since there has never been a license issued for the

108. 42 U.S.C.A. § 10151(a)(2) (West).
109. 42 U.S.C.A. § 10151(a)(3) (West).
110. 42 U.S.C.A. § 10155(a) (West).
111. 42 U.S.C.A. § 10161(b)(1) (West).
112. 42 U.S.C.A. § 10168(d)(1) (West); Texas, 78 F.4th at 843.

construction of the Yucca Mountain repository, and the executive branch has indicated that there will not be a license issued, construction of a monitored retrievable storage facility can never occur according to the express wording of the NWPA.

The 5th Circuit, when looking at the Atomic Energy Act and the Nuclear Waste Policy Act, determined that the AEA did not grant the authority "to license a private, away-from-reactor storage facility for spent nuclear fuel."[113] Furthermore the court held that the NWPA did not permit the facility, as it "prioritizes construction of the permanent repository and limits temporary storage to private at-the-reactor storage or at federal sites."[114]

D. Major Questions Doctrine

The final argument for the Nuclear Regulatory Commission was that the court should grant the NRC deference as the Atomic Energy Act is ambiguous, citing the *Chevron* doctrine.[115] As shown previously, the AEA was unambiguous in its language regarding the question posed to the court, and therefore the *Chevron* doctrine would not apply in this case. The 5th Circuit shot down the *Chevron* deference citing *West Virginia v. EPA* and the Supreme Court's adoption of the major questions doctrine, stating that "[d]isposal of nuclear waste is an issue of great "economic and political significance,'" and therefore did not warrant deference.[116] Since the court's decision and the preceding analysis both conclude that the AEA and Nuclear Waste Policy Act is unambiguous, the scope of the major questions doctrine and its applicability are beyond the scope of this article.

VI. Conclusion

Knowing the outcome of the case and the circuit split it caused, it was important to analyze the case as critical to the opinion as possible and to give the Nuclear Regulatory Commission the benefit of the doubt in order to make sure that the outcome was correct. Even when giving that grace to the NRC and attempting to find an alternate reading of the AEA and NWPA than that of the 5th Circuit, there is no plausible argument that enables the license to be authorized by law. The court was not flawless, as their interpretation of § 2111, focusing solely on the half-life of the

113. Texas, 78 F.4th at 844.

114. Id.

115. Brief of Federal Respondents, p.47 Texas, 78 F.4th 827 (No. 21-60743).

116. Texas, 78 F.4th at 844 (citing W. Virginia v. Env't Prot. Agency, 142 S. Ct. 2587, 2608 (2022)).

materials in spent nuclear fuel, was grossly inadequate. However, that error is harmless, as spent nuclear fuel is a combination of materials that each have different regulations, and to have the authorization it sought under the AEA, the NRC had to be correct with every part of the combination, which it was not. Furthermore, even had the Atomic Energy Act gave the authority initially, the Nuclear Waste Policy Act expressly regulates spent nuclear fuel and forbade the construction of the type of facility the NRC was attempting to license.

Therefore, the 5th Circuit was correct in its vacation of the NRC license.