

A NOXIOUS ECHO: HOW NITROGEN HYPOXIA EVOKES
IMAGES OF THE GAS CHAMBER AND PUSHES THE BOUNDS
OF THE EIGHTH AMENDMENT

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ABSTRACT

In 2024, the United States turned back the clock and returned to a tradition unheard of in much of the world: death by lethal gas. A decade of botched executions and controversies surrounding lethal injection prompted states to look for other methods of execution. While the use of nitrogen gas as a form of capital punishment is a relatively recent phenomenon, the origins of using lethal gas to execute individuals have century-old roots within the American criminal justice system.

This Note examines the history of lethal gas executions in the United States, as well as the jurisprudence surrounding the method. Building upon this historical backdrop, this Note discusses the contemporary movement towards nitrogen gas, explores how courts have responded to Eighth Amendment challenges, and provides several recommendations litigators and opponents of capital punishment can leverage to argue against the constitutionality of nitrogen gas executions.

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INTRODUCTION

Jessie Hoffman was killed by his government on March 18, 2025.¹ For the first time in fifteen years, the state of Louisiana killed one of its residents in the nation’s fifth execution using nitrogen gas.² In a process known as “nitrogen hypoxia,” the individual is deprived of oxygen through the forced inhalation of pure nitrogen, effectively suffocating until they die.³ The use of lethal gas to execute individuals on death row is not a novel concept. Lethal gas originated as a uniquely American approach in the quest for a humane, painless method of execution that dominated the academic and legal discourse of the early 20th century.⁴ Following the horrific atrocities of the Holocaust, the use of lethal gas as a method of execution began to fade through the rest of the 20th century, with the practice becoming nearly obsolete at the turn of the 21st century in favor of lethal injection. However, the frequency of botched executions by lethal injections, coupled with their rising costs, prompted states to find other

¹ Emily Mae Czachor, *Louisiana Puts Man to Death in State's First Nitrogen Gas Execution*, CBS NEWS (Mar. 19, 2025, at 7:50 ET), <https://www.cbsnews.com/news/louisiana-death-row-inmate-first-nitrogen-gas-execution/> [<https://perma.cc/SX9B-9QCW>].

² *Id.*

³ Application for Stay of Execution at 2, *Hoffman v. Westcott*, No. 24-A893 (2025). The phrase “nitrogen hypoxia” is not a real medical term but rather combines “nitrogen gas” and “hypoxia” which refers to a low level of oxygen. See Dana G. Smith, *Nitrogen Execution Method Touted as More ‘Humane,’ but Evidence Is Lacking*, SCI. AM. (Sep. 23, 2022), <https://www.scientificamerican.com/article/new-execution-method-touted-as-more-humane-but-evidence-is-lacking/> [<https://perma.cc/4MBY-DDP9>].

⁴ *Nevada Gas Chamber Chair Goes on Display*, THE MOB MUSEUM (Oct. 6, 2016), <https://themobmuseum.org/blog/nevada-gas-chamber-chair-goes-on-display/> [<https://perma.cc/WX7C-M254>] (“An influential book published in 1916 by Dr. Allen McLean Hamilton, a prominent New York toxicologist, helped lethal gas gain traction in Nevada. Hamilton argued that gas, such as carbon monoxide, would be more humane than other execution methods. The gas could be pumped into the prisoner’s airtight cell while the prisoner was asleep, producing a painless death.”). See also Randy Dotinga, *Execution by gas has a brutal 100-year history. Now it’s back*, WASH. POST: RETROPOLIS (Jan. 24, 2024), <https://www.washingtonpost.com/history/2024/01/24/gas-chamber-execution/> [<https://perma.cc/GXV8-ADKJ>]. (stating that “[e]xecution by gas was supposed to be a humane advance for a progressive era” and the goal in the United States has been to find a way to kill prisoners in a “safe, reliable and humane” way).

methods of execution that could be less painful and more humane.⁵ In the early 2020s, several states concluded that nitrogen gas could achieve these aims, with five executions taking place using nitrogen gas in Alabama and Louisiana since the beginning of 2024.⁶

This Note will argue that the use of nitrogen gas to carry out executions for individuals on death row is a cruel and unusual punishment and must be prohibited. This Note analogizes the use of nitrogen gas to the tormented history of using gas chambers in the United States and Nazi Germany. Part I will discuss how states came to adopt nitrogen gas as a method of execution despite having other alternatives on the table, such as death by hanging, firing squad, or electrocution. Part II will discuss the historic jurisprudence surrounding lethal gas and how individuals on death row unsuccessfully argued that it violated the Eighth Amendment. Part III will discuss how nitrogen gas, or nitrogen hypoxia, became an increasingly popular method of execution in the late 2010s and early 2020s. Part IV will discuss the jurisprudence surrounding nitrogen hypoxia, a relatively new phenomenon that finds itself at the cutting edge of death penalty litigation. Lastly, Part VI will discuss several recommendations for courts and governments at the federal and state levels to implement to dissuade or do away with using nitrogen gas as a method of execution.

⁵ “Because it is increasingly difficult to obtain legally the drugs commonly used in executions, some states have experimented with new drugs and different drug combinations to carry out executions, resulting in prolonged executions in which prisoners exhibited symptoms of pain and distress.” *Lethal Injection*, DEATH PENALTY INFO. CTR, <https://deathpenaltyinfo.org/executions/methods-of-execution/lethal-injection> [<https://perma.cc/8P23-ZH32>] (last visited Jan. 2, 2026). See also, e.g., Laurel Wamsley, *With Lethal Injections Harder To Come By, Some States Are Turning To Firing Squads*, NPR (May 19, 2021, at 5:00 ET), <https://www.npr.org/2021/05/19/997632625/with-lethal-injections-harder-to-come-by-some-states-are-turning-to-firing-squad> [<https://perma.cc/PN24-MPBG>] (detailing how some states look to firing squad as a remedy to the rising costs and difficulty with finding drugs to create cocktails to administer lethal injections); Michelle Del Rey, *Why states are moving away from lethal injection executions*, THE INDEPENDENT (Mar. 21, 2024, at 18:46 ET), <https://www.the-independent.com/news/world/americas/crime/states-lethal-injection-executions-pyc-b2516747.html> [<https://perma.cc/A4BB-9KX8>] (illustrates how states are saddled with difficulty finding suppliers for drugs used in lethal injection and consequently are looking for alternative methods of execution).

⁶ Sara Cline, *Louisiana becomes second state, after Alabama, to execute an inmate using nitrogen gas*, ASSOCIATED PRESS (Mar. 19, 2025, at 14:09), <https://www.al.com/news/2025/03/louisiana-becomes-second-state-after-alabama-to-execute-an-inmate-using-nitrogen-gas.html> [<https://perma.cc/S6WP-BML2>]; see also Andrew DeMillo, Kim Chandler, & Sara Cline, *Louisiana and Arkansas look to nitrogen executions*, ASSOCIATED PRESS (Mar. 6, 2025), <https://apnews.com/article/death-penalty-nitrogen-10bcf30f8616d2b6954df49b65cefa9> [<https://perma.cc/3DKB-FB9W>] (describing how Alabama and Louisiana are moving past lethal injection and beginning to adopt nitrogen hypoxia as a method of execution).

I. ORIGINS OF NITROGEN GAS AS A METHOD OF EXECUTION

Despite the infamous use of gas chambers in Nazi Germany as the primary means used to carry out the Holocaust, they were not the brainchild of Adolf Hitler and his fascistic, genocidal movement. Rather, the gas chamber is an American invention, one that took significant time, research, and funding to bring to life. The origins of lethal gas trace back to the trenches of the Great War.⁷ In the early 20th century, German scientists created a weapon that could deliver mass casualties in a matter of minutes.⁸ With chemicals such as chlorine, phosgene, and mustard gas, militaries could secure hundreds upon thousands of casualties while remaining undetected.⁹ The United States sought to attain any possible advantage in what was dubbed “the chemist’s war.”¹⁰ Equipped with a trove of capital investment and funding by the likes of the Rockefellers and Carnegies,¹¹ legions of leading American scientists, academics, and scholars came together to conjure “the dew of death.”¹²

This concoction quickly attained approval from the American government, putting the principles of mass production into practice through a series of chemical manufacturing factories across the country.¹³ However, plans for further use of poison gas were halted once the Germans surrendered on Armistice Day in 1918.¹⁴ As the world recovered from this perilous conflict, the toll left behind was staggering: 1.3 million dead, including upwards of 74,000 Americans, from the horrors of chemical warfare.¹⁵

Considering the power and impact of these new chemicals, powerful commercial interests sought to use them in a manner that would provide some return on investment.¹⁶ At the turn of the 20th century, Nevada was among the states looking for a “humane” alternative to hanging.¹⁷ Following an uptick in discourse regarding the efficacy of lethal gas and how it could serve as a humane solution, Nevada adopted lethal gas as its

⁷ SCOTT CHRISTIANSON, *THE LAST GASP: THE RISE AND FALL OF THE AMERICAN GAS CHAMBER* 34–35 (2010).

⁸ *Id.* at 37–38.

⁹ *Id.* at 40–43.

¹⁰ *Id.* at 42.

¹¹ *Id.* at 43.

¹² *Id.* at 50.

¹³ CHRISTIANSON, *supra* note 7, at 46–48.

¹⁴ *Id.* at 51.

¹⁵ *Id.* at 51.

¹⁶ *Id.* at 53–55, 62.

¹⁷ *Id.* at 62–63, 83 (discussing how doctors called lethal gas “a wonderful and humane way of execution” and was the “quickest and most humane method of putting a human to death” arguing that when compared to hanging and electrocution, lethal gas would be “instantaneous unconsciousness and practically instantaneous death, so there was no chance of suffering”).

primary method of execution in 1921.¹⁸ This development quickly received significant attention from press around the world.¹⁹ Shortly after its proliferation, Nevada had the opportunity to put this new method into practice to prove to the world that lethal gas was indeed the most humane method of execution when Gee Jon was sentenced to death in 1921.²⁰

The world's first permanent gas chamber was an eleven-foot by ten-foot single-story stone building with several windows so witnesses could observe the execution take place.²¹ Executioners used cyanogen, a gas that would supposedly paralyze respiratory organs, remove all oxygen from the body, and "cause instant and painless death after one deep breath."²² This location was the venue where Gee Jon would take his last breaths in 1924 and become the first person to be legally executed by lethal gas in the world.²³ Gee's public execution did not transpire in the way state officials expected.²⁴ Over the course of six minutes, Gee's lungs filled with the poison, and he went in and out of consciousness.²⁵ He would buckle forward, appearing to be unconscious, only to suddenly jerk his head up rapidly before falling forward again in the chair.²⁶ Gee's execution garnered widespread attention around the world.²⁷ It also motivated abolitionists to call for the law's repeal.²⁸ The execution garnered interest specifically from Germany, as delegations of German officials, criminologists, and legal scholars toured American penal facilities and sent news of the gas chamber's development back to Germany.²⁹

¹⁸ *Id.* at 63. The legislation adopting lethal gas executions was dubbed the "Humane Execution Bill" in line with the discourse clamoring for a quick, painless way to die. It mandated that a "suitable cell be constructed" and that "the warden, a competent physician, and six other citizens must witness the execution." *Id.*

¹⁹ CHRISTIANSON, *supra* note 7, at 64 ("Nevada's innovation received worldwide publicity. An editorial in the New York Times commented, 'The electric chair is not modern enough for the Nevadans, apparently, or else it displeases them in some way, and their law calls for the use of putting of condemned murderers to death in what is called in euphemistic terms a 'lethal chamber'—a room that can be made airtight and into which at will can be introduced through hidden conduits a suffocating gas.'" (internal citations omitted)).

²⁰ *Id.* at 70 (Gee was sentenced to death for first-degree murder, making him "eligible for execution under the world's first lethal-gas statute").

²¹ *Id.* at 73.

²² *Id.* at 74.

²³ *Id.* at 80.

²⁴ *Id.* at 81, 83 ("Some spectators thought they began to smell the deadly gas, with its fragrance like almond blossoms, and a few of them lurched back from the window in terror . . .").

²⁵ CHRISTIANSON, *supra* note 7, at 81.

²⁶ *Id.* at 81.

²⁷ *Id.* at 84.

²⁸ *Id.* at 85.

²⁹ *Id.* at 86–89.

Inspired by the United States' use of gas chambers to execute individuals in prisons, the Nazis used their infamous collection of scientists and researchers to adapt Zyklon-B beyond its use in basic fumigation.³⁰ The American stamp on Zyklon and Zyklon-B quickly stained to infamy, as Nazi Germany quickly found a way to modify its application to human beings.³¹ The Nazis first experimented with carbon monoxide as the poison of choice, but they quickly came around to Zyklon as they sought, in a cruelly ironic fashion, what they viewed as a "humane" method of killing.³² In pursuit of this quick and efficient method to exterminate the Jewish people, Nazis administered Zyklon-B in a gas chamber.³³ The toll of the Holocaust's primary weapon was gut-wrenching: Zyklon B was weaponized to kill more than one million Jews in gas chambers.³⁴

In the United States, lethal gas executions were administered from the mid 1920s to the 1990s.³⁵ A person would enter the gas chamber as the executioners administered cyanide gas through the vents. For several minutes, the person inhaled cyanide and underwent hypoxia, otherwise known as a lack of oxygen, with pain reverberating through their head, shoulders, back, and chest.³⁶ For eight to ten minutes, the person would undergo a myriad of conditions ranging from prolonged seizures, incontinence of stool and urine, salivation, vomiting, retching, ballistic writhing, flailing, twitching of extremities, and grimacing.³⁷ Eventually,

³⁰ *Id.* at 2 ("The Third Reich took the practice of gas-chamber executions from the Americans and expanded upon it, developing a huge industrial system to systematically slaughter millions of innocent men, women, and children in an effort to carry out genocide against the Jewish people and Gypsies and eliminate mentally handicapped persons, homosexuals, and political radicals.").

³¹ CHRISTIANSON, *supra* note 7, at 152.

³² *Id.* at 150 ("A delegation of Nazi officials and physicians also witnessed the demonstration, and those in charge pronounced the gassings a success. One of the witnesses, Dr. Brandt, who served as Hitler's physician and plenipotentiary for the euthanasia program, later met with the Führer and discussed various killing methods, whereupon Hitler is said to have asked him, 'Which is the more humane way?' Brandt told him it was gas. And so, gas it was."). *See also* Nestar Russell, *The Nazi's Pursuit for a "Humane" Method of Killing*, in UNDERSTANDING WILLING PARTICIPANTS, 241, 242–43 (2018) (explaining how failing to inform victims they were entering a gas chamber to die amounted to, in the Nazi's eyes, an "elaborate deception would make for a less stressful and therefore more 'humane' dying experience").

³³ CHRISTIANSON, *supra* note 7, at 154–55.

³⁴ *Id.* at 155.

³⁵ *Id.* at 237–52 (table of every individual executed by lethal gas in the United States from 1924 to 1999).

³⁶ Experts have analogized the process as "similar to pain felt by a person during a massive heart attack." *Gomez v. U.S. Dist. Ct. for N.D. of Cal.*, 503 U.S. 653, 655 (1992) (Stevens, J. dissenting).

³⁷ *Id.*

the person would cease to move, and they would be declared dead.³⁸

Despite the appalling use of gas chambers to execute the Jewish people in the Holocaust, state legislators in the United States did not hold back on using it to carry out capital punishment. While states certainly reduced their reliance on lethal gas, they continued to administer executions in gas chambers like the one in California's San Quentin prison.³⁹ Arizona and Colorado soon followed in Nevada's footsteps, inspired by what state officials viewed as a groundbreaking and unabashed success.⁴⁰ At the time, Arizona primarily executed people via hanging, but a state constitutional amendment soon substituted hanging with the gas chamber in 1934.⁴¹ Soon thereafter, the state carried out its first lethal gas execution, killing two brothers, Manuel and Fred Hernandez.⁴² Arizona would ultimately carry out thirty-seven executions by lethal gas from 1934 to 1962,⁴³ with two executions taking place after 1992 following the state's revival of the death penalty.⁴⁴ Missouri, North Carolina, and California would quickly follow in Arizona's footsteps, with scores of legislators seeking to imbue a legacy of completing what some believed was humanity's destiny to kill humanely.⁴⁵ In states like Mississippi, the gas chamber was used as a weapon to disproportionately execute African Americans for offenses such as mugging a white woman.⁴⁶ Maryland

³⁸ *Id.* at 656.

³⁹ CHRISTIANSON, *supra* note 7, at 177–79. North Carolina went from 111 executions using lethal gas in the 1940s to 18 in the 1950s, while Colorado went from 23 to 3, Missouri went from 14 to 9, and California went from 81 to 73 in the same span. *Id.*

⁴⁰ *Id.* at 100–02.

⁴¹ *Id.* at 101. Arizona's first documented execution took place in 1865, when Dolores Moore was hanged for murder. Arizona proceeded to hang scores of people, but in 1930, a botched hanging that resulted in Eva Dugan's decapitation prompted Arizonans to search for another method, eventually landing on the gas chamber. *Arizona*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/state-and-federal-info/state-by-state/arizona> [https://perma.cc/MPF4-ZWND] (last visited Jan. 2, 2026).

⁴² ARIZ. DEP'T OF CORR., REHAB., AND REENTRY, *Arizona Death Penalty History*, <https://corrections.az.gov/death-row/arizona-death-penalty-history> [https://perma.cc/4482-8ZZT] (last visited Jan. 2, 2026).

⁴³ ARIZ. DEP'T OF CORR., REHAB., AND REENTRY, *Executions Prior to 1992 & Execution Methods*, <https://corrections.az.gov/death-row/executions-prior-1992-execution-methods> [https://perma.cc/6AMN-TDDW] (last visited Jan. 2, 2026).

⁴⁴ The state did not outlaw the death penalty but rather did not administer any executions between 1962 and 1992. In fact, following the Supreme Court's decision to prohibit the death penalty in *Furman v. Georgia*, the state actually passed a law reinstating capital punishment. *Arizona*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/state-and-federal-info/state-by-state/arizona> [https://perma.cc/3MZB-PX3H] (last visited Jan. 2, 2026). This statute was invalidated by *Lockett v. Ohio*, but Arizona subsequently modified the statute to comply with the ruling. *Id.*

⁴⁵ CHRISTIANSON, *supra* note 7, at 109, 117, 119.

⁴⁶ *Id.* at 180. From 1955 to 1959, Mississippi executed 20 people in their gas chamber, with 17 of them being black men. *Id.* In five years alone, from 1955 to 1959, Mississippi's deadly chamber was the site of twenty executions, seventeen of them of black men. *Id.*

adopted lethal gas for the first time in 1955,⁴⁷ while New Mexico did not use its gas chamber until 1960.⁴⁸ Up until 1977, thirteen states permitted the use of the gas chamber,⁴⁹ and as of today, nine states still have gas chamber laws on the books in some form.⁵⁰ Sixteen executions have taken place using the gas chamber since 1976, with the last one taking place in 1999.⁵¹ Ultimately, 594 people were executed using lethal gas from 1924 to 1999,⁵² and more than half of those executed were people of color.⁵³ The origins of lethal gas from World War I to Nazi Germany and its eventual discriminatory application in the United States during the 1950s illustrate the danger it posed. Above all, these origins reflect the pain it inflicted not only on those executed but also on those who witnessed and administered the execution.

II. STATE OF JURISPRUDENCE SURROUNDING LETHAL GAS

The United States' movement away from lethal gas executions did not take shape through heated litigation in the courtroom but rather as a byproduct of souring public opinion and corresponding legislative changes at the state level. Considering how commonplace the use of lethal gas was for death row executions, courts frequently discussed its constitutionality. Yet, in nearly every case, courts ducked the chance to rule that lethal gas violated the Eighth Amendment.

As discussed in Part I, many states followed Nevada's lead in establishing this manner of execution.⁵⁴ The first challenge to the constitutionality of lethal gas arose in *Gee Jon's prima facie* case out of Nevada.⁵⁵ He argued that the imposition of lethal gas was a cruel and

at 245–46.

⁴⁷ *Id.* Maryland's first two gas chamber executions also had a racial overtone, as the state gassed two Black kids who were convicted of the robbery, rape, and murder of a white woman. *Id.*

⁴⁸ *Id.*

⁴⁹ Deborah W. Denno, *Six U.S. Execution Methods and the Disastrous Quest for Humaneness*, in *THE ELGAR COMPANION TO CAPITAL PUNISHMENT AND SOCIETY* 144, 151 (2024).

⁵⁰ *Methods of Execution*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/executions/methods-of-execution> [<https://perma.cc/QDV3-LWJU>] (last visited Jan. 2, 2026) (listing states that allow lethal gas—Alabama, Arkansas, Arizona, California, Louisiana, Mississippi, Missouri, Oklahoma, and Wyoming).

⁵¹ *Id.*

⁵² CHRISTIANSON, *supra* note 7, at 2.

⁵³ *Id.* at 237–52 (appendix detailing the race and ethnicity of the individuals executed by lethal gas).

⁵⁴ *See supra* Part I (discussing Arizona, California, Missouri, Maryland, and North Carolina's adoption of gas chambers or other mechanisms to carry out lethal gas executions).

⁵⁵ *See State v. Gee*, 211 P. 676, 681–82 (Nev. 1923) (Nevada Supreme Court discusses

unusual punishment, but the Nevada Supreme Court deferred to the legislature's finding that it was humane and upheld its administration.⁵⁶ In 1934, the Hernandez brothers in Arizona challenged the state's desire to execute them using lethal gas, partially arguing that its administration violated the Eighth Amendment.⁵⁷ However, the Supreme Court of Arizona refused to rule in their favor, arguing that there was no question that lethal gas was "less painful and more humane than hanging[.]" which was dispositive in their mind to "refute completely the charge that it constitutes cruel and unusual punishment."⁵⁸ Many state courts began to follow suit and quickly entrenched lethal gas as the most common, permissible, and legal method of execution in the country.⁵⁹

Following the Supreme Court's decision upholding the constitutionality of the death penalty in *Gregg v. Georgia*,⁶⁰ lethal gas executions entered into a new era. While many states did reinstate statutes permitting capital punishment in droves, only eleven lethal gas executions took place in the United States following *Gregg*.⁶¹ The vast majority of these executions occurred from the late 1980s to the end of the 1990s, coinciding with an era of tough-on-crime politics.⁶² Corresponding with this uptick in lethal gas executions came profound debates, not only among the courts, but also among the American people regarding the method's efficacy and morality.⁶³ Most evident among the courts was a stark circuit split among the Fourth and Fifth Circuits, which repeatedly permitted lethal gas executions to move forward, and the Ninth Circuit, which frequently found that the administration of lethal gas contravened

Gee Jon argument that gas chamber execution is cruel and unusual in violation of Eighth Amendment).

⁵⁶ *Id.* at 424.

⁵⁷ *Hernandez v. State*, 32 P.2d 18, 25 (Ariz. 1934).

⁵⁸ *Id.*

⁵⁹ *See* *People v. Daugherty*, 40 Cal. 2d 876, 894–95 (1953) (rejecting claim that statute authorizing administration of lethal gas was a cruel and unusual punishment); *Duisen v. State*, 441 S.W.2d 688, 693 (Mo. 1969) (imposition of lethal gas was a constitutionally permissible form of punishment), *vacated in part*, 408 U.S. 935 (1972) (upholding imposition of death penalty and lethal gas as the method of execution);

⁶⁰ *Gregg v. Georgia*, 428 U.S. 153 (1976).

⁶¹ Randy Dotinga, *Execution by gas has a brutal 100-year history. Now it's back*, WASH. POST: RETROPOLIS (Jan. 24, 2024), <https://www.washingtonpost.com/history/2024/01/24/gas-chamber-execution/> [<https://perma.cc/GXV8-ADKJ>].

⁶² *Execution Database*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/facts-and-research/data/executions?method=Gas&sort=dateString/desc> [<https://perma.cc/9YYB-2VVE>] (9 of the 11 executions occurred from 1987 to 1999). Moreover, the death penalty reached the highest level of support in 1994, as 80 percent of Americans were in favor of capital punishment. CHRISTIANSON, *supra* note 7, at 223.

⁶³ CHRISTIANSON, *supra* note 7, at 211 ("In December 1984 a Gallup poll found that 72 percent of all Americans supported the death penalty for murder, but 56 percent favored lethal injection as the preferred method of execution, compared to 16 percent for the gas chamber and only 6 percent for the electric chair.").

the Eighth Amendment. In some ways, the circuit split regarding the constitutionality of lethal gas mirrored the stance of the American people in real-time.

In *Gray v. Lucas*, the Fifth Circuit held that Mississippi's prospective use of cyanide gas to execute Jimmy Gray was "not so different in degree or nature from that resulting from other traditional modes of execution as to implicate" the Eighth Amendment's proscription against cruel and unusual punishment.⁶⁴ Moreover, the Fourth Circuit built upon this reasoning a decade later to hold that execution by lethal gas did not violate the Eighth Amendment, arguing that the "existence and adoption of more humane methods does not automatically render a contested method cruel and unusual."⁶⁵ Moreover, the judiciary's tacit endorsement of the constitutionality of lethal gas executions was mirrored in the highest court in the land. In *Gomez v. United States District Court for the Northern District of California*, the Supreme Court allowed California's planned execution of Robert Alton Harris via gas chamber to proceed.⁶⁶ In a powerful dissent, Justice Stevens invoked the sins of the Holocaust and argued that the gas chamber's efficacy was tempered by new evidence indicating that it was "extremely and unnecessarily painful."⁶⁷

However, a series of decisions in the Ninth Circuit in the late 1990s marked the beginning of the end for lethal gas executions. In *Fierro v. Gomez*, the Ninth Circuit held that the administration of lethal cyanide gas via gas chamber constituted a cruel and unusual punishment.⁶⁸ Specifically, the court reviewed the district court's record that highlighted, in vivid detail, the execution process provided by extensive expert testimony.⁶⁹ Referencing this detailed record documenting "extreme pain"

⁶⁴ 710 F.2d 1048, 1061 (5th Cir. 1983), *cert. denied*, *Gray v. Lucas*, 463 U.S. 1237 (1983).

⁶⁵ *Hunt v. Nuth*, 57 F.3d 1327, 1337–38 (4th Cir. 1995), *cert. denied*, *Hunt v. Nuth*, 516 U.S. 1054 (1996). Interestingly, the 4th Circuit was not immune to the idea that execution by lethal gas was not necessarily the most humane. *Id.* ("Lethal gas currently may not be the most humane method of execution—assuming that there could be a humane method of execution . . ."). Nonetheless, the court refused to hold that it violated the Eighth Amendment. *Id.*

⁶⁶ 503 U.S. 653, 654 (1992).

⁶⁷ *Id.* at 655, 657 (1992) (Stevens, J., dissenting) ("The barbaric use of cyanide gas in the Holocaust, the development of cyanide agents as chemical weapons, our contemporary understanding of execution by lethal gas, and the development of less cruel methods of execution all demonstrate that execution by cyanide gas is unnecessarily cruel.")

⁶⁸ 77 F.3d 301, 309 (9th Cir. 1996).

⁶⁹ "The district court's primary findings were that: (1) 'inmates are likely to be conscious for anywhere from fifteen seconds to one minute from the time that the gas strikes their face,' (2) 'there is a substantial risk that consciousness may persist for up to several minutes,' (3) 'during this period of consciousness, the condemned inmate is likely to suffer intense physical pain,' and (4) the cause of death by cyanide gas, cellular suffocation, was a 'substantially similar experience to asphyxiation' and that *Campbell* had suggested that asphyxiation would be an impermissibly cruel method

and the “substantial risk that inmates will suffer this extreme pain for several minutes[.]” the court concluded that execution by lethal gas violated the Eighth Amendment.⁷⁰

Fierro was a groundbreaking moment in the jurisprudence surrounding capital punishment, as it was the first time a federal court had ever deemed a method of execution to be unconstitutional and violative of the Eighth Amendment.⁷¹ Following this decision, the California state legislature changed its death penalty statute to establish lethal injection as the state’s primary method of execution unless an individual requests to be executed by lethal gas.⁷²

Despite the fact that the Supreme Court never expressly ruled on the constitutionality of the gas chamber, its use largely fell out of favor with the American public. By the mid-1980s, only sixteen percent of Americans supported the use of a gas chamber as a method of execution.⁷³ Beginning in the 1980s, states began to sway towards the use of lethal injections, eventually making it the preferred execution method of choice for states and the federal government alike.⁷⁴

III. DEVELOPMENT OF NITROGEN HYPOXIA AS A METHOD OF EXECUTION

As Part II discussed, lethal injection began to serve as the United States’s primary method of execution from the 1980s onward. Beginning

of execution.” *Id.* at 308 (quoting *Fierro v. Gomez*, 865 F. Supp. 1387, 1413 (N.D. Cal. 1994)).

⁷⁰ *Id.* at 309.

⁷¹ CHRISTIANSON, *supra* note 7 at 223.

⁷² CAL. PENAL CODE ANN. § 3604(b). Following the state’s modification, people on death row in California continued to challenge the constitutionality of lethal gas. However, the California Supreme Court quashed this claim, holding that the statute’s mandatory application of lethal injection in the event the person refuses to choose essentially rendered their lethal gas argument moot. *See People v. Bradford*, 929 P.2d 544, 578 (Cal. 1997). Moreover, the court held that an individual waives any claim that a given method of execution violates the Eighth Amendment if they affirmatively choose lethal gas over lethal injection. *Id.*

⁷³ CHRISTIANSON, *supra* note 7, at 211.

⁷⁴ *Id.* at 211–12. *See also Lethal Injection*, *supra* note 5. Texas was the first state to carry out an execution via lethal injection in 1982. *Lethal Injection*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/executions/methods-of-execution/lethal-injection> [<https://perma.cc/SRJ6-4FXA>] (last visited Jan. 2, 2026). Since 1982, over a thousand individuals have been executed using lethal injection. *Execution Database*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/facts-and-research/data/executions?method=Lethal+Injection&sort=dateString/asc> [<https://perma.cc/9YYB-2VVE>] (last visited Jan 20, 2026) (detailing 1,463 executions using lethal injection since first such execution took place in 1982). As it stands, 27 states, alongside the U.S. military and the federal government, authorize the use of lethal injection. *Methods of Execution*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/executions/methods-of-execution> [<https://perma.cc/QDV3-LWJU>] (last visited Jan. 2, 2026).

in the mid-2000s, the cost to procure the drugs necessary to administer lethal injections began to skyrocket.⁷⁵ Fewer and fewer companies were willing to supply the drugs due to concerns of being associated with capital punishment, and states began to rely on manufacturers providing drugs that were untested and relatively unregulated.⁷⁶ Consequently, the incidence of “botched” lethal injections involving painful and unexpected reactions increased, prompting greater scrutiny from the media.⁷⁷ The term “botched” refers to executions that cause unanticipated problems or delays that cause “unnecessary agony for the prisoner or that reflect gross incompetence of the executioner.”⁷⁸ Executions conducted using lethal injections carried the highest botched execution rate out of any method, with some occurring as recently as 2025.⁷⁹

Following the alarming rate of botched executions and subsequent public backlash, many pharmaceutical companies and drug manufacturers refused to supply the necessary components for lethal injection cocktails.⁸⁰

⁷⁵ Hana Mir, *Pharmaceutical Firms Against Lethal Injection and the Ramifications*, 2 PHIL., POL., & ECON. REV. 19, 25 (2023) (“Since the drug shortage began, there has been a 1000% increase in the cost of drugs used for lethal injection.”) (internal citation omitted).

⁷⁶ *Compounding Pharmacies*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/executions/methods-of-execution/lethal-injection/compounding-pharmacies> [<https://perma.cc/Q2WG-XFKS>] (last visited Jan. 2, 2026).

⁷⁷ *As Lethal Injection Turns Forty, States Botch a Record Number of Executions*, DEATH PENALTY INFO. CTR. (Mar. 14, 2025), <https://deathpenaltyinfo.org/as-lethal-injection-turns-forty-states-botch-a-record-number-of-executions> [<https://perma.cc/8Y56-BGSE>]. A review of around 200 autopsies of individuals executed using lethal injection revealed signs of pulmonary edema, a condition that “induce(s) the feeling of suffocation or drowning[.]” in 84 percent of the cases. Noah Caldwell, Alisa Chang, & Jolie Myers, *Gasping For Air: Autopsies Reveal Troubling Effects Of Lethal Injection*, NPR (Sep. 21, 2020, at 7:00 ET), <https://www.npr.org/2020/09/21/793177589/gasping-for-air-autopsies-reveal-troubling-effects-of-lethal-injection> [perma.cc/5PB7-APTU]. Pulmonary edema is often accompanied with a build-up of blood and fluid in the lungs, which contributes to the feeling of suffocation or drowning. *Id.*

⁷⁸ Marian J. Borg & Michael L. Radelet, *On Botched Executions*, in CAPITAL PUNISHMENT: STRATEGIES FOR ABOLITION 143, 144 (Peter Hodgkinson & William A. Schabas eds., 2004).

⁷⁹ *Judge temporarily halts Idaho's plan to execute serial killer Thomas Creech after first attempt was botched*, CBS NEWS (Nov. 7, 2024, at 9:32 ET), <https://www.cbsnews.com/news/thomas-creech-execution-halted-idaho-first-attempt-botched/> [<https://perma.cc/CAU6-PPUJ>]. Idaho was scheduled to execute Thomas Eugene Creech by lethal injection on February 28, 2024, but failed to find a viable vein to inject. *Id.*

⁸⁰ Erik Eckholm, *Pfizer Blocks the Use of Its Drugs in Executions*, N.Y. TIMES (May 13, 2016), <https://www.nytimes.com/2016/05/14/us/pfizer-execution-drugs-lethal-injection.html> [<https://perma.cc/KAU6-NPEM>] (explaining that Pfizer announced its plan to prevent its drugs from being used in lethal injections); Emanuella Grinberg and Rebekah Riess, *Ohio governor delays execution because drug companies won't supply the state*, CNN (July 31, 2019, at 8:22 ET), <https://www.cnn.com/2019/07/31/us/ohio->

As a result, states passed secrecy laws to shield existing suppliers and manufacturers from liability and potential backlash.⁸¹ Because of the frequency of botched executions, rising costs, and limited supply to administer executions using lethal injection, states started looking to other methods of execution that would avoid the controversy associated with botched lethal injections.⁸²

Given the struggles associated with lethal injection, commentators and policymakers broached the possibility of reviving lethal gas beyond the four corners of a gas chamber. The idea of using nitrogen gas in executions first originated in a *National Review* article in 1995 after *Fierro* resulted in the gas chamber's obsolescence in California.⁸³ In the mid-2010s, talk began to emerge about the possibility of using nitrogen hypoxia as a method of execution.⁸⁴ This method would include administering pure nitrogen so that a person becomes unconscious and, theoretically, passes away in that state.⁸⁵ Following a botched execution involving lethal injection in Oklahoma in 2014, a poll signaled that two-thirds of Americans would support alternatives such as lethal gas, electrocution, or hanging.⁸⁶ In 2015, Oklahoma State Representative Mike Christian

execution-postponed/index.html [perma.cc/6H7P-QTUD] (explaining that Ohio pharmaceutical companies planned to stop distributing drugs from being used in lethal injections).

⁸¹ *Behind the Curtain: Secrecy and the Death Penalty in the United States*, DEATH PENALTY INFO. CTR. (Nov. 20, 2018), <https://deathpenaltyinfo.org/research/analysis/reports/in-depth/behind-the-curtain-secrecy-and-the-death-penalty-in-the-united-states> [https://perma.cc/S2XN-6TU4] (“Since January 2011, legislatures in thirteen states have enacted new secrecy statutes that conceal vital information about the execution process. Of the seventeen states that have carried out 246 lethal-injection executions between January 1, 2011 and August 31, 2018, all withheld at least some information about the about the execution process. All but one withheld information about the source of their execution drugs. Fourteen states prevented witnesses from seeing at least some part of the execution. Fifteen prevented witnesses from hearing what was happening inside the execution chamber. None of the seventeen allowed witnesses to know when each of the drugs was administered.”).

⁸² *Lethal Injection*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/executions/methods-of-execution/lethal-injection> [https://perma.cc/SRJ6-4FXA] (last visited Jan. 2, 2026).

⁸³ Josh Sanburn, *The Dawn of a New Form of Capital Punishment*, TIME (Apr. 17, 2015, at 16:51 ET), <https://time.com/3749879/nitrogen-gas-execution-oklahoma-lethal-injection/> [https://perma.cc/MDH9-DFV2] (“A 1995 *National Review* article titled ‘Killing With Kindness: Capital Punishment by Nitrogen Asphyxiation,’ for example, recommended that states use nitrogen gas after a federal district court deemed California’s gas chamber unconstitutional.”).

⁸⁴ *Id.*

⁸⁵ Application for Stay of Execution at 2, *Hoffman v. Westcott*, No. 24-A893 (2025).

⁸⁶ *Americans Back Death Penalty by Gas or Electrocution If No Needle: Poll*, NBC NEWS (May 14, 2014, at 12:34 ET), <https://www.nbcnews.com/storyline/lethal-injection/americans-back-death-penalty-gas-or-electrocution-if-no-needle-n105346>

commissioned a report to study the efficacy of nitrogen-induced hypoxia as a method of capital punishment.⁸⁷ Even though none of the report's authors possessed expertise within the medical field, they dissected the relevant medical literature to conclude that nitrogen-induced hypoxia "would be a humane method to carry out a death sentence" and would "assure a quick and painless death of the offender."⁸⁸ Shortly after this study, Oklahoma became the first state to pass a statute permitting the use of nitrogen gas as a method of execution.⁸⁹

Today, eight states have either introduced or codified laws permitting nitrogen gas as a method of capital punishment.⁹⁰ In March 2025, Arkansas became the most recent state to permit nitrogen hypoxia for executions due to issues the state had with procuring drugs necessary to administer lethal injections.⁹¹ Additionally, lawmakers in various states have introduced bills that would add nitrogen gas as a method of execution,⁹² and, due to the Trump Administration's revival of capital punishment, that number may well to increase in the coming years.

While states have spearheaded the transition from lethal injection to nitrogen hypoxia, suppliers the government needs to carry out potential executions are already distancing themselves from contributing to this new phenomenon. Three of the largest nitrogen gas manufacturers in the United States announced that they would prohibit the use of their products in executions carried out by nitrogen hypoxia.⁹³ Moreover, the United

[<https://perma.cc/4B77-QXXW>].

⁸⁷ MICHAEL COPELAND, THOM PARR, & CHRISTINE PAPAS, NITROGEN INDUCED HYPOXIA AS A FORM OF CAPITAL PUNISHMENT (2015), https://dpic-cdn.org/production/legacy/Copeland%20Report_Nitrogen-Hypoxia.pdf

[<https://perma.cc/XV72-JTQB>].

⁸⁸ *Id.*

⁸⁹ OKLA. STAT. tit. 22, § 1014(B) (2024).

⁹⁰ *Id.*; MISS. CODE ANN. § 99-19-51(1)(d) (2024); LA. STAT. ANN. § 15:569 (2024); ALA. CODE § 15-18-82.1 (2024); H.B. 36, 136th Gen. Assemb. Reg. Sess. (Ohio 2025); H.B. 903, 2025 Legislature, Reg. Sess. (Fla. 2025); H.B. 1489, 95th Gen. Assemb. Reg. Sess. (Ark. 2025); L.B. 432, 109th Legislature, First Sess. (Neb. 2025).

⁹¹ H.B. 1489, 95th Gen. Assemb. Reg. Sess. (Ark. 2025). This bill was signed into law by Governor Sarah Huckabee Sanders on March 18, 2025. *See* Andrew Demillo, *Arkansas governor signs legislation allowing executions by nitrogen gas*, ASSOCIATED PRESS (Mar. 18, 2025, at 20:44 ET), <https://apnews.com/article/executions-arkansas-nitrogen-sarah-huckabee-sanders-4af9ebd60f272f65a09e266444bb0831>

[<https://perma.cc/Z59X-R7WJ>].

⁹² Lawmakers in Ohio introduced a bill permitting nitrogen gas executions in both the 2024 and 2025 legislative sessions. *See* H.B. 392, 135th Gen. Assemb. Reg. Sess. (Ohio 2024); H.B. 36, 136th Gen. Assemb. Reg. Sess. (Ohio 2025). Additionally, lawmakers in both Florida and Nebraska introduced a bill that would allow nitrogen gas as a method of execution. *See* H.B. 903, 2025 Legislature, Reg. Sess. (Fla. 2025) ("A death sentence shall be executed by electrocution, or lethal injection, or a method not deemed unconstitutional."); L.B. 432, 109th Legislature, First Sess. (Neb. 2025).

⁹³ *Three Largest Nitrogen Gas Manufacturers in the U.S. Prohibit Products from Use in Executions*, DEATH PENALTY INFO. CTR. (Mar. 14, 2025),

Nations High Commissioner for Human Rights released a statement expressing concern over the possible use of nitrogen hypoxia to carry out capital punishment, arguing that it would “likely violate the prohibition on torture and other cruel, inhuman or degrading punishment.”⁹⁴ While this backlash has yet to change the opinions of state legislators, it would not be surprising if nitrogen hypoxia follows a similar trajectory as lethal injection and lethal gas in receiving the ire of the American public.

IV. JURISPRUDENCE SURROUNDING NITROGEN HYPOXIA

As Part II established, the Supreme Court has never ruled on the constitutionality of lethal gas.⁹⁵ Theoretically, a state like Arizona that still permits execution via gas chamber⁹⁶ could revive it as they almost did in 2022.⁹⁷ Considering the recency of nitrogen hypoxia’s development and use, there are not many cases explicitly discussing whether nitrogen hypoxia is a cruel and unusual form of punishment. However, the Supreme Court has laid out a standard to challenge the constitutionality of a method of execution.⁹⁸ To find a method violative of the Eighth Amendment, the method of execution must “present[] a risk that is ‘sure or very likely to cause serious illness and needless suffering[,]’”⁹⁹ and satisfy the *Baze-Glossip* test by demonstrating that there is a “feasible and readily implemented alternative method of execution that would significantly reduce a substantial risk of severe pain and that the State has refused to adopt without a legitimate penological reason.”¹⁰⁰

Over the past several years, several cases before the Supreme Court have raised claims related to nitrogen hypoxia. In *Bucklew*, a Missourian on death row challenged the state’s proposed use of lethal injection for his forthcoming execution, asserting that, because it would adversely react with a pre-existing medical condition, he preferred to be executed using

<https://deathpenaltyinfo.org/three-largest-nitrogen-gas-manufacturers-in-the-u-s-prohibit-products-from-use-in-executions> [<https://perma.cc/QCQ2-QYMG>].

⁹⁴ *United States: UN experts alarmed at prospect of first-ever untested execution by nitrogen hypoxia in Alabama*, U.N. OFF. OF THE HIGH COMM’R FOR HUM. RTS. (Jan. 3, 2024), <https://www.ohchr.org/en/press-releases/2024/01/united-states-un-experts-alarmed-prospect-first-ever-untested-execution> [<https://perma.cc/C5JQ-V5V7>].

⁹⁵ *Infra* Part II. *See also* *Baze v. Rees*, 553 U.S. 35, 44 (2008) (“This Court has never invalidated a State’s chosen procedure for carrying out a sentence of death as the infliction of cruel and unusual punishment.”).

⁹⁶ It bears repeating that Arizona only permits an individual to be executed via gas chamber only if they were convicted prior to November 1992. *See Arizona*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/state-and-federal-info/state-by-state/arizona> [<https://perma.cc/3MZB-PX3H>].

⁹⁷ *See infra* Part III.

⁹⁸ *Glossip v. Gross*, 576 U.S. 863, 877 (2015) (internal citations omitted).

⁹⁹ *Id.*

¹⁰⁰ *Id.*; *Bucklew v. Precythe*, 587 U.S. 119, 132 (2019); *see Baze*, 553 U.S. at 52.

nitrogen hypoxia.¹⁰¹ The Court held that he failed to show that nitrogen hypoxia would reduce his pain and suffering, in large part because of a lack of information and evidence supporting his assertion.¹⁰²

Starting with Kenneth Smith’s application for a stay of execution in February 2024, the Supreme Court has directly denied stay applications for six of the eight individuals executed via nitrogen hypoxia.¹⁰³ One of the eight individuals, Demetrius Frazier, was unable to obtain a preliminary injunction from a federal district court against Alabama to cease using nitrogen hypoxia despite arguing that its use violated the Eighth Amendment.¹⁰⁴ Another individual, Geoffrey Todd West, was executed upon an order from the Alabama Supreme Court.¹⁰⁵ In most of the applications for a stay of execution and petitions for certiorari in the Supreme Court, the petitioners applied the *Baze-Glossip* standard by pointing to alternatives that would likely yield a significantly lower risk of pain and suffering than nitrogen hypoxia, a largely untested method.¹⁰⁶

While the Court’s denial of the petitioners’ stay applications do not come with an opinion describing the majority’s reasoning, one can surmise that it signals a tacit endorsement on the part of the Court regarding nitrogen hypoxia.¹⁰⁷ Of course, *Bucklew*, *Smith*, and the other cases

¹⁰¹ 587 U.S. at 128.

¹⁰² *Id.* at 1129–31.

¹⁰³ *Smith v. Hamm*, No. 23–6562 (2024); *Grayson v. Hamm*, No. 24-5993 (2024); *Mills v. Hamm*, No. 23-7591 (2024); *Hoffman v. Westcott*, No. 24-A893 (2025); *Hunt v. Alabama*, No. 24-A1192 (2025); *Boyd v. Hamm*, No. 25-5928 (2025).

¹⁰⁴ *Frazier v. Hamm*, No. CV-732 at 9 (M.D. Ala. Jan. 31, 2025).

¹⁰⁵ *Alabama Supreme Court orders execution of Geoffrey Todd West by nitrogen hypoxia*, ABC NEWS CHANNEL 9 (Jan. 8, 2026)

<https://newschannel9.com/news/local/alabama-supreme-court-orders-execution-of-geoffrey-todd-west-by-nitrogen-hypoxia> [<https://perma.cc/LUU6-VVC8>].

¹⁰⁶ Reply in Support of Application for Stay of Execution and Reply in Support of Petition for Writ of Certiorari at 2, *Smith v. Hamm*, No. 23–6562 (2024); Application for Stay of Execution Pending Petition for Writ of Certiorari at 2-4, *Grayson v. Hamm*, No. 24-5993 (2024); Brief for the Petitioner at 15, *Mills v. Hamm*, No. 23-7591 (2024); Brief for the Petitioner at 19–27, *Hoffman v. Westcott*, No. 24-A893 (2025); Brief for the Petitioner at 10-17, *Boyd v. Hamm*, No. 25-5928 (2025).

¹⁰⁷ *Smith v. Hamm*, No. 23–6562 (2024) (“The application for stay of execution of sentence of death presented to Justice Thomas and by him referred to the Court is denied. The petition for a writ of certiorari is denied.”); *Grayson v. Hamm*, No. 24-5993 (2024) (“Application for stay of execution of sentence of death presented to Justice Thomas and by him referred to the Court denied. Petition for writ of certiorari to the United States Court of Appeals for the Eleventh Circuit denied.”); *Mills v. Hamm*, No. 23-7591 (2024) (“Application for stay of execution of sentence of death presented to Justice Thomas and by him referred to the Court denied. Petition for writ of certiorari to the United States Court of Appeals for the Eleventh Circuit denied.”); *Hoffman v. Westcott*, No. 24-A893 (2025) (“The application for stay of execution of sentence of death presented to Justice Alito and by him referred to the Court is denied. Justice Sotomayor, Justice Kagan, and Justice Jackson would grant the application for stay of execution.”); *Boyd v. Hamm*, No. 25-5928 (2025) (“The application for stay of execution of sentence of death presented to

involving nitrogen hypoxia were decided at nitrogen hypoxia's infancy. Additionally, the Court has yet to grant certiorari to a petition that addresses nitrogen hypoxia's constitutionality relative to *Bucklew*. However, given the resurgence of lethal gas—in particular, its use in these eight recent executions—its opponents may have new information and evidence to use as fodder for renewed arguments against nitrogen hypoxia's use. Perhaps such information could be used to satisfy the standard the Court has laid out to challenge the constitutionality of a method of execution.

V. RECOMMENDATIONS

Considering the problematic history of lethal gas executions, the graphic and brutal descriptions of said executions, and their discriminatory application against racial minorities, this Note argues that nitrogen hypoxia as a method of execution should immediately be prohibited because it violates the Eighth Amendment. This Part explores several avenues that could lead to the prevention of its use: (1) the Supreme Court of the United States could rule that nitrogen gas is a cruel and unusual form of punishment violative of the Eighth Amendment; (2) the federal government, specifically the Department of Justice, should issue guidance explicitly stating that it will not request the use of nitrogen hypoxia for federal executions in states that have laws permitting its use; and (3) states that have nitrogen hypoxia laws on the books should invalidate them in light of the tortured history of gas as a method of execution in the United States and around the world.

A. *The Supreme Court Can Intervene and Hold that Nitrogen Gas is a Cruel and Unusual Form of Punishment.*

The Supreme Court has never held a method of execution to be unconstitutional.¹⁰⁸ However, opponents of nitrogen hypoxia can argue that the use of nitrogen gas to carry out capital punishment is facially unconstitutional under the standard outlined in *Bucklew*.¹⁰⁹

To preface this argument, it is worth noting that the odds are stacked

Justice Thomas and by him referred to the Court is denied. The petition for a writ of certiorari is denied.”). The most recent case involving a nitrogen hypoxia execution bolsters the potential presence of the majority's tacit endorsement. In *Boyd v. Hamm*, the Supreme Court denied Anthony Boyd's application for a stay of execution. No. 25-5928 (2025). In his petition for certiorari, Boyd specifically argued that nitrogen hypoxia caused unnecessary suffering and violated the Eighth Amendment standards set forth by *Bucklew* by pointing to death by firing squad as an alternative that mitigates the suffering caused by nitrogen hypoxia. Brief for the Petitioner at 10-17, Boyd, No. 25-5928 (2025).

¹⁰⁸ See *infra* Part II.

¹⁰⁹ See *infra* Part IV.

against litigators wishing to challenge the constitutionality of nitrogen hypoxia. Aside from capital punishment's brief five-year reprieve following *Furman v. Georgia*,¹¹⁰ the Court has universally upheld a state's implementation of capital punishment across myriad methods.¹¹¹ *Furman* notwithstanding, the Court has only used the Eighth Amendment to strike down a punishment a handful of times, specifically in non-capital contexts.¹¹² Moreover, it is also worth noting the innate discomfort and uneasiness associated with stating that one method of execution is more "humane" and appropriate than another. As this Note established, the desire to find a "humane" method of execution has guided legislators for more than a century, with nitrogen hypoxia being the newest manifestation of this quest.¹¹³ Regardless of whichever way the Court decides, a person's life will be taken at the hands of the state. While the efficacy and constitutionality of capital punishment writ large is not at issue in this Note, it is important to acknowledge the dehumanizing and disconcerting nature of this conversation.

With this context in mind, litigants can look to the standard the Court has provided thus far to challenge the constitutionality of nitrogen hypoxia. Again, individuals challenging their method of execution must identify "a known and available alternative method of execution that entails a lesser risk of pain, a requirement of all Eighth Amendment method-of-execution claims."¹¹⁴ Additionally, they must prove "that the State has refused to adopt [the alternative] without a legitimate penological reason."¹¹⁵ Using this standard, individuals on death row can argue that death by firing squad serves as an alternative to nitrogen hypoxia. Litigants can argue that states like Louisiana, Arkansas, and Alabama failed to adopt the death by firing squad method without adequate rationale, while litigants in states like Oklahoma and Mississippi can argue that the state should be prohibited from ever administering nitrogen hypoxia by pointing to existing laws on the books that permit the use of firing squad as an alternative method of execution that inflicts less pain and suffering than nitrogen hypoxia.

¹¹⁰ 408 U.S. 298 (1972).

¹¹¹ *See, e.g.*, *In re Kemmler*, 136 U.S. 436, 447–49 (1890) (rejecting Eighth Amendment challenge to electric chair); *Wilkerson v. Utah*, 99 U.S. 130, 134–35 (1897) (upholding constitutionality of death by firing squad); *Baze v. Rees*, 553 U.S. 35, 42 (2008) (upholding constitutionality of lethal injection).

¹¹² *See, e.g.*, *Weems v. United States*, 217 U.S. 349, 384 (1910) (holding fraud sentence of 12 years in chains and hard manual labor was cruel and unusual); *Trop v. Dulles*, 356 U.S. 86, 102–04. (1958) (holding removal of citizenship without defendant's permission for desertion is cruel and unusual); *Robinson v. California*, 370 U.S. 660, 677 (1962) (holding criminalization of addiction is cruel and unusual).

¹¹³ *See infra* Parts I, IV.

¹¹⁴ *Glossip v. Gross*, 576 U.S. 863, 867 (2015).

¹¹⁵ *Bucklew v. Precythe*, 587 U.S. 119, 132 (2019).

Experts have laid out how firing squad executions are administered and how they contrast in manner and duration with the process associated with nitrogen hypoxia.¹¹⁶ Specifically, the process involves firing multiple high-caliber bullets into someone’s “cardiac bundle”—the larger organ of the heart and the vessels above and around it.¹¹⁷ Executioners use military-caliber rifles to fire bullets that hit the cardiac bundle at a velocity of around 2,800 feet per second, causing an expected loss of consciousness within three to four seconds.¹¹⁸ In contrast, nitrogen hypoxia typically results in asphyxiation, a process in which a person is suffocated to death.¹¹⁹ Experts have also found that the administration of nitrogen hypoxia can result in an individual choking on their vomit alongside suffocation.¹²⁰ In the event of a botched execution, nitrogen hypoxia can result in stroke, brain damage, and a persistent vegetative state.¹²¹ Justice Sonia Sotomayor argued as much when she cited the “substantial risk that oxygen will infiltrate the mask and lead to a persistent vegetative state, stroke, or suffocation, superadding pain and prolonging . . . death” as a reason to grant Kenneth Smith’s stay application before his execution.¹²²

The Court has routinely established that the Constitution does not guarantee “avoidance of all risk of pain.”¹²³ However, in comparing the conditions and effects that accompany nitrogen hypoxia and firing squad, one arguably evokes far less pain and suffering than the other. To examine the differences between both methods in practice, one can look at the recent executions of Brad Sigmon in South Carolina and that of Kenneth Smith and Jessie Hoffman in Alabama and Louisiana, respectively. The state of South Carolina gave Brad Sigmon a choice between lethal injection, electrocution, and firing squad as his preferred method of execution.¹²⁴ He chose death by firing squad.¹²⁵ After exhausting his appeals, South Carolina carried out the first execution by firing squad in fifteen years on March 7, 2025.¹²⁶ His lawyer, Gerald King, articulated the

¹¹⁶ Hoffman v. Westcott, No. CV 25-16, at *10 (M.D. La. Mar. 11, 2025), *vacated*, 131 F.4th 332 (5th Cir. 2025), *aff’d*, No. 24-A893 (2025).

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ Application for Stay of Execution at 2, Hoffman v. Westcott, No. 24-A893 (2025).

¹²⁰ *Nitrogen Suffocation*, EQUAL JUST. INITIATIVE, <https://eji.org/issues/nitrogen-suffocation/> [perma.cc/ZBN3-VL2B].

¹²¹ *Id.*

¹²² Smith v. Hamm, No. 23-6562, slip op. at *1 (2024) (Sotomayor, J. dissenting).

¹²³ Baze v. Rees, 553 U.S. 35, 47 (2008).

¹²⁴ Jeffrey Collins, *A South Carolina man executed by firing squad is the first US prisoner killed this way in 15 years*, ASSOCIATED PRESS (Mar. 7, 2025, at 22:28 ET), <https://apnews.com/article/firing-squad-execution-south-carolina-sigmond-c998f11ecd3fcbf117d55b682ce3604a> [https://perma.cc/D56S-UPPS].

¹²⁵ *Id.*

¹²⁶ Gene Johnson, *The US is killing someone by firing squad for the first time in 15 years. Here’s a look at the history*, ASSOCIATED PRESS (Mar. 5, 2025, at 14:16 ET),

cruel irony underlying Sigmon’s choice, saying, “[h]e’s made the best choice that he can, but the fact that he had to make it at all is horrifying.”¹²⁷ In the end, it took Sigmon three minutes to be pronounced dead, and a reporter described his death as “faster—and more violent—than lethal injection” and that “[o]utside of the rifle crack, there was no sound.”¹²⁸

Compare Brad Sigmon’s execution to those of Kenneth Smith and Jessie Hoffman. State officials assured the courts and the public that Kenny Smith would lose consciousness “almost immediately” and die within a few minutes.¹²⁹ But, when the nitrogen gas began flowing through the mask on Kenneth Smith’s face, he began to writhe in pain, his body “thrashing against the straps” binding him to the gurney and “violently jerking back and forth for several minutes,” followed by “heaving and retching inside the mask.”¹³⁰ He gasped for air as his body lifted against the gurney’s restraints, fluid filling the inside of the mask.¹³¹ In the end, Kenneth Smith’s execution began at 7:53 pm, and he was not pronounced dead until 8:25 pm, more than thirty minutes later.¹³²

In considering Jessie Hoffman’s application for a stay of execution, Judge Shelly Dick considered eyewitness accounts of nitrogen hypoxia executions and concluded that it imposed “suffering, including conscious terror for several minutes, shaking, gasping, and other evidence of distress.”¹³³ When the Supreme Court denied Jessie’s stay application and the state of Louisiana subsequently executed him, eyewitnesses began to

<https://apnews.com/article/firing-squad-death-penalty-south-carolina-sigmon-05000e874b12bb67c00832c2230f42c8> [<https://perma.cc/GU6Y-XZB6>].

¹²⁷ Samuel Lovett, *Why execution by firing squad is ‘best option’ for death row inmates*, THE TIMES (Mar. 7, 2025, at 13:20 GMT), <https://www.thetimes.com/us/news-today/article/why-execution-by-firing-squad-is-best-option-for-death-row-inmates-rnrr8tdzn> [<https://perma.cc/7JGF-X3U5>].

¹²⁸ Jeffrey Collins, *Violent and sudden. What a firing squad execution looked like through my eyes*, ASSOCIATED PRESS (Mar. 7, 2025, at 23:20 ET), <https://apnews.com/article/south-carolina-firing-squad-eyewitness-account-sigmon-427cccb55be58954af4434e89bcc41d8> [perma.cc/RJ2P-5DZ3].

¹²⁹ *Questions Surround Execution of Kenneth Smith*, EQUAL JUST. INITIATIVE (Jan. 25, 2024), <https://eji.org/news/alabama-executes-kenny-smith-using-nitrogen-suffocation/> [<https://perma.cc/27UA-ZF48>].

¹³⁰ *Id.*

¹³¹ *Id.*

¹³² *Id.*

¹³³ *Hoffman v. Westcott*, No. CV 25-16 (M.D. La. Mar. 11, 2025), *vacated*, 131 F.4th 332 (5th Cir. 2025), *aff’d*, No. 24-A893 (2025). Moreover, eyewitness accounts of all four Alabama executions observed: “violent writhing of the entire body under the straps ‘to the point that the entire gurney [was] moving up and down’; vigorous convulsing and shaking for four minutes; repeated gasping while conscious; minutes of conscious struggling for life; heaving and spitting; two minutes of shaking and trembling ‘followed by about six minutes of periodic gulping breaths before [becoming still]’[.] A spiritual advisor, who also happens to be a physician, recounts his observations as follows: ‘We don’t see people jerking around like that while they’re dying normally. His face was twisted, and he looked like he was suffering.’” *Id.* at 6–7.

observe much of the suffering that the district court said would take place. After administrators began pumping nitrogen gas through the mask, Jessie’s breathing became uneven, his chest rose, and his body convulsed.¹³⁴ His head shook inside the mask, with his hands clenched, jerking slightly before eventually being pronounced dead nineteen minutes later.¹³⁵ Based on these comparisons, Sigmon’s execution by firing squad occurred on a significantly accelerated timeline compared to the dozens of minutes it took to pronounce the deaths of Kenneth Smith and Jessie Hoffman.

While nitrogen hypoxia has not produced any botched executions in the five that have been administered since 2024, lethal gas has a concerning track record when it comes to botched administrations.¹³⁶ A 2014 study examined the 8,776 executions administered from 1890 to 2010 and found that 276 of them were botched, resulting in a botched execution rate of approximately three percent.¹³⁷ Outside of lethal injection, which has a botched execution rate of seven percent, lethal gas has yielded a higher botched execution rate than hanging, electrocution, and firing squad.¹³⁸ In fact, out of the thirty-four executions carried out by firing squad over 120 years, none of them have been botched.¹³⁹ Typically, botched lethal gas executions entail a period of violent thrashing, spasms, and jerks that last for several minutes.¹⁴⁰ In one instance, Jimmy Lee Gray eventually died by “hitting his head against a steel pole in the gas chamber” rather than the cyanide administered by the executioner.¹⁴¹

The constitutionality of death by firing squad has been entrenched in the Court’s jurisprudence for well over one hundred years.¹⁴² Since 1608, execution by firing squad has been used against at least 144 individuals in America.¹⁴³ Five states permit death by firing squad as a method of execution.¹⁴⁴ Idaho recently became the first and only state in the union to

¹³⁴ John Simerman, *Jessie Hoffman’s final moments inside Louisiana’s execution chamber at Angola*, NOLA NEWS (Mar. 19, 2025), https://www.nola.com/news/courts/jessie-hoffman-death-penalty-execution-nitrogen/article_4de95cb8-047c-11f0-91cc-d7c36246ff44.html#tncms-source=featured-2 [<https://perma.cc/Q4V2-JVJ6>].

¹³⁵ *Id.*

¹³⁶ Borg & Radelet, *supra* note 78, at 144.

¹³⁷ AUSTIN SARAT, GRUESOME SPECTACLES: BOTCHED EXECUTIONS AND AMERICA’S DEATH PENALTY 5, 170–71 (2014).

¹³⁸ *Botched Executions*, DEATH PENALTY INFO. CTR., <https://deathpenaltyinfo.org/executions/botched-executions> [<https://perma.cc/TD9E-2QBB>] (last visited Jan. 2, 2026).

¹³⁹ *Id.*

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Wilkerson v. Utah*, 99 U.S. 130, 134–35 (1897).

¹⁴³ Johnson, *supra* note 126. Nearly all of these executions took place in Utah. *Id.*

¹⁴⁴ IDAHO CODE § 19-2716(b) (2024); MISS. CODE ANN. § 99-19-51(1)(d) (2024); OKLA.

specifically designate death by firing squad as its preferred method of execution.¹⁴⁵

Beyond the pursuit of alternative, less painful methods of execution, opponents of capital punishment can look to recent developments in the Supreme Court for possible hope. For instance, a recent Supreme Court case indicates that the Court can, in a vacuum, rule in a manner favorable to defendants in capital cases. In *Glossip v. Oklahoma*, the Court found that prosecutorial errors, omissions, and possible coordination between a key witness and the government unduly prejudiced Glossip’s case, necessitating a new trial.¹⁴⁶ However, several weeks after the *Glossip* decision, the Supreme Court denied Jessie’s application for a stay of execution on the day he died.¹⁴⁷ Justices Jackson, Kagan, Sotomayor would have granted the stay,¹⁴⁸ while Justice Gorsuch dissented on grounds that the administration of nitrogen hypoxia would be incompatible with Jessie’s religious views as a Buddhist.¹⁴⁹ This group of justices in the dissent, given their ideological diversity, may indicate open-mindedness to outlawing nitrogen hypoxia as a method of execution.

Additionally, it is worth discussing Justice Sotomayor’s dissent in the majority’s denial of certiorari in *Boyd v. Hamm*, which specifically lays out elements of the general argument described thus far.¹⁵⁰ Justice Sotomayor authored a dissent excoriating the majority for failing to grant certiorari, describing in vivid detail previous nitrogen hypoxia executions in Alabama¹⁵¹ and subsequently arguing that “Boyd more than made his case, under *Bucklew*, that nitrogen hypoxia likely poses a substantial risk of conscious terror and psychological pain and that the firing squad is a sufficient alternative.”¹⁵² She emphasized that “nitrogen hypoxia will profoundly add to Boyd’s suffering *after* the execution begins and while it is being carried out to completion” given that it may take “up to seven full minutes of conscious, excruciating suffocation.”¹⁵³ She also underscored that this “superadded psychological torment is both unique to nitrogen hypoxia and goes well beyond what is inherent in any

STAT. tit. 22, § 1014(D) (2024); S.C. CODE ANN. § 24-3-530(A) (2024); UTAH CODE ANN. § 77-18-5.5(3)-(4) (2024).

¹⁴⁵ Greg Wehner, *Idaho becomes first state to prefer death by firing squad for executions*, FOX 13 SEATTLE (Mar. 16, 2025, at 14:26 PT), <https://www.fox13seattle.com/news/idaho-becomes-first-state-prefer-death-firing-squad-executions> [<https://perma.cc/88NW-V55L>].

¹⁴⁶ *Glossip v. Oklahoma*, No. 22-7466, slip op. at *22 (Feb. 25, 2025).

¹⁴⁷ *Hoffman v. Westcott*, No. 24-A893 (2025).

¹⁴⁸ *Id.*, slip op. at *1.

¹⁴⁹ *Id.*, slip op. at *1–2 (Gorsuch, J. dissenting).

¹⁵⁰ No. 25-5928, slip op. at *1–9. (2025) (Sotomayor, J. dissenting).

¹⁵¹ *Id.*, slip op. at *3–4.

¹⁵² *Id.*, slip op. at *6–7.

¹⁵³ *Id.*, slip op. at *7.

constitutional method of execution.”¹⁵⁴ While this dissent pertained to her argument that “the Court should have granted a stay of execution and [Boyd’s] petition for certiorari,”¹⁵⁵ it nevertheless lays out a general framework that attacks the constitutionality of nitrogen hypoxia that litigators can emulate in future cases.

Moreover, despite the Supreme Court’s refusal to rule on nitrogen hypoxia’s constitutionality, there was a short-lived bright spot at the lower court level. On February 25, 2025, Jessie Hoffman’s attorneys filed a habeas petition in the U.S. District Court for the Middle District of Louisiana arguing that Louisiana’s administration of nitrogen hypoxia violates the Eighth Amendment.¹⁵⁶ On March 11, 2025, upon holding a trial, the District Court made shockwaves when it held that Louisiana’s nitrogen hypoxia protocol likely violates the Eighth Amendment.¹⁵⁷ The court cited expert testimony discussing how “the deprivation of oxygen to the lungs causes a primal urge to breathe and feelings of intense terror when inhalation does not deliver oxygen to the lungs” results in “severe psychological pain” that “endures until the loss of consciousness.”¹⁵⁸ Moreover, it found that death by firing squad was a “feasible and readily available” that would mitigate the “psychological pain, suffering, and terror” that nitrogen hypoxia would “superadd” to his execution.¹⁵⁹ In so doing, the court imposed a stay over his execution while Louisiana appealed the decision.¹⁶⁰ Even though the Fifth Circuit Court of Appeals eventually reversed the District Court’s decision and the Supreme Court ultimately denied to stay Jessie’s execution¹⁶¹, the District Court’s endorsement of an Eighth Amendment theory of jurisprudence illustrates that there could be support at the lower court level to bring the constitutionality of nitrogen hypoxia to the attention of the Supreme Court. If litigators storm the halls of federal district courts with petitions laying

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*, slip op. at *8.

¹⁵⁶ *Hoffman v. Westcott*, No. CV 25-16 at *5 (M.D. La. Mar. 11, 2025).

¹⁵⁷ *Id.* at *12.

¹⁵⁸ *Id.* at *9.

¹⁵⁹ *Id.* at *11–12.

¹⁶⁰ *Id.* at *14.

¹⁶¹ On March 14, 2025, the Fifth Circuit reversed the district court’s ruling in finding that death by firing squad did not significantly reduce a substantial risk of severe pain that may arise with nitrogen hypoxia. *Hoffman v. Westcott*, 131 F.4th 332, 336 (5th Cir. 2025). Jessie’s attorneys subsequently petitioned the Supreme Court for a stay of execution. Application for Stay of Execution Pending Petition for Writ of Certiorari at 2, *Hoffman v. Westcott*, No. 24-A893 (2025). On March 18, 2025, the Supreme Court denied Jessie’s application for a stay of execution. *Hoffman v. Westcott*, No. 24-A893 (2025). He was executed several hours later. Erik Ortiz and Abigail Brooks, *Louisiana executes man with nitrogen gas after 15-year pause*, NBC NEWS (Mar. 18, 2025), <https://www.nbcnews.com/news/us-news/louisiana-execute-jessie-hoffman-using-nitrogen-gas-rcna196619> [<https://perma.cc/T3TA-QMGJ>].

out this argument, perhaps the Supreme Court may have no choice but to finally grant a petition for certiorari.

Ultimately, litigators and abolitionists can craft a strategy akin to the one laid out in this section to effectively persuade courts of its unconstitutionality. While the Fifth Circuit held that death by firing squad is not demonstrably less painful than nitrogen hypoxia,¹⁶² litigators can prove this decision is factually inaccurate. Beyond legal arguments, they can work with scientific experts and historians to establish not only how painful nitrogen hypoxia can be but also how it is inextricably linked to the Holocaust and a dark chapter in world history.¹⁶³ They can compile an extensive record of articles that recount lethal gas and nitrogen hypoxia executions in vivid, graphic detail to emphasize how the practice is “very likely to cause serious illness and needless suffering” to satisfy the first prong of the Supreme Court’s test.¹⁶⁴ Justice Stevens did as much in his *Gomez* dissent, and litigators can emulate his approach to persuade the court in their favor.¹⁶⁵ While the states may argue that administering nitrogen hypoxia renders a person unconscious upon exposure, litigators can lay out this extensive record to counter the state’s claim. Additionally, litigators can compare these features with that of death by firing squad and its relatively quick and painless administration to establish that it would “significantly reduce a substantial risk of severe pain.”¹⁶⁶ Moreover, in most states that have nitrogen hypoxia laws, the choice of which method to use is often left up to a state official’s judgment despite the possibility that an individual may prefer to face a firing squad.¹⁶⁷ Consequently, attorneys can argue that states that permit nitrogen hypoxia without offering individuals a voluntary choice of firing squad violate the *Baze-Glossip* standard and the Eighth Amendment.

B. The Federal Government Should Issue Guidance that Prohibits Any Request to Use Nitrogen Gas as a Method of Execution.

Another avenue opponents of the death penalty can pursue is to persuade the Trump Administration and the Department of Justice to refrain from using nitrogen hypoxia if an execution is carried out. Since President Biden commuted the sentences of all but three of the forty people who were on death row,¹⁶⁸ the current Trump Administration is

¹⁶² *Hoffman v. Westcott*, 131 F.4th 332 (5th Cir. 2025), *aff’d*, No. 24-A893 (2025).

¹⁶³ CHRISTIANSON, *supra* note 7, at 219.

¹⁶⁴ *Glossip v. Gross*, 576 U.S. 863, 877 (2015) (internal citations omitted).

¹⁶⁵ *Gomez v. U.S. Dist. Ct. for N. Dist. Of Cal.*, 503 U.S. 653, 655–57 (1992) (Stevens, J., dissenting).

¹⁶⁶ *Bucklew v. Precythe*, 587 U.S. 119, 132 (2019).

¹⁶⁷ See generally *supra* note 90 (listing introduced and codified laws permitting nitrogen gas as a method of capital punishment).

¹⁶⁸ Presidential Statement on Federal Death Row Commutations, 2024 DAILY COMP.

relatively limited in its ability to administer federal executions as compared to the final year of the first Trump Administration, which saw thirteen federal executions carried out.¹⁶⁹ Additionally, in the waning weeks of the Biden Administration, the Department of Justice released a review of the federal execution protocol, in which it urged for a moratorium on the administration and procurement of pentobarbital, the primary drug used in federal lethal injections.¹⁷⁰ While the incoming Trump Administration reversed course and reinstated the death penalty as the desired punishment in federal capital cases,¹⁷¹ this report serves as an example of the role that the federal government can play in mitigating the frequency, use, and administration of the death penalty.

Given the uncertainty surrounding the Trump Administration's approach to capital punishment and how far it is willing to go, it is not out of the realm of possibility that it decides to move toward legitimizing the use of nitrogen hypoxia in a federal context. The Federal Death Penalty Act, a component of the broader Violent Crime Control and Law Enforcement Act of 1994, mandates that a death sentence be carried out "in the manner prescribed by the law of the State in which the sentence is imposed"¹⁷² and in the "appropriate State or local facilities"¹⁷³ provided. Since lethal injection was the primary method of execution in every state

PRES. DOC. 1097 (Dec. 23, 2024); EXEC. OFF. OF THE PRESIDENT, FACT SHEET: PRESIDENT BIDEN COMMUTES THE SENTENCES OF 37 INDIVIDUALS ON DEATH ROW (2024).

¹⁶⁹ Michael Tarm, *Fuller picture emerges of the 13 federal executions at the end of Trump's presidency*, ASSOCIATED PRESS (Oct. 3, 2023, at 11:52 ET), <https://apnews.com/article/trump-executions-biden-death-penalty-brandon-bernard-c1b26807c5c40b337d14485c3d6df2de> [<https://perma.cc/T8L7-DXDX>].

¹⁷⁰ U.S. DEP'T OF JUST., REVIEW OF THE FEDERAL EXECUTION PROTOCOL ADDENDUM AND MANNER OF EXECUTION REGULATIONS (2025); *see also* U.S. DEP'T OF JUST., MEMORANDUM FROM THE ATTORNEY GENERAL, MORATORIUM ON FEDERAL EXECUTIONS PENDING REVIEW OF POLICIES AND PROCEDURES (2021) (directive from Attorney General Garland announcing a pause on federal executions until review of internal guidelines and procedures). As it stands, the federal government's execution protocol solely relies on lethal injections and, consequently, pentobarbital. However, by imposing a moratorium in procuring pentobarbital, the federal government effectively (albeit temporarily) neutered the death penalty. During President Biden's four years in office, no federal executions were carried out, and his Justice Department only sought the death penalty once. FED. BUREAU OF PRISONS, CAPITAL PUNISHMENT, https://www.bop.gov/about/history/federal_executions.jsp [perma.cc/R7CG-W57L] (last visited Jan. 3, 2026) (noting the last federal execution administered on January 16, 2021); Aaron Katersky, Alexander Mallin, & Meredith Deliso, *Justice Department to pursue death penalty against Buffalo supermarket shooter Payton Gendron*, ABC News <https://abcnews.go.com/US/justice-department-pursue-death-penalty-buffalo-supermarket-shooter/story?id=106322955> [<https://perma.cc/2PYA-YFME>] (Jan. 12, 2024).

¹⁷¹ Exec. Order No. 14164, 90 Fed. Reg. 8463 (Jan. 20, 2025).

¹⁷² 18 U.S.C. § 3596.

¹⁷³ 18 U.S.C. § 3597.

that authorized capital punishment, it comes as no surprise that the federal government used that same method in the sixteen executions that took place from 2001 to 2021.¹⁷⁴ However, given that five states have since adopted nitrogen hypoxia laws,¹⁷⁵ the federal government should do all it can to avoid administering nitrogen hypoxia in any of its potential executions. Attorney General Pam Bondi and the Department of Justice should announce that, in states that prescribe nitrogen hypoxia, the Justice Departments and the United States Attorney's Office for the respective states' districts will not seek to execute anyone via nitrogen hypoxia. All of the states that permit nitrogen hypoxia also offer lethal injection, so the Trump Administration can stipulate that they will only administer capital punishment through alternative means that a given state has proscribed.

C. States That Have Nitrogen Gas Laws on the Books Can and Should Invalidate Them. If Not, State Supreme Courts Should Intervene and Rule on Their Constitutionality.

In the interests of justice and human decency, Alabama, Arkansas, Louisiana, Mississippi, and Oklahoma must repeal their laws permitting the use of nitrogen hypoxia as a method of execution. As Part II discussed, the movement away from lethal gas as a method of execution did not come from the courts but rather from the democratic process.¹⁷⁶ Following repeated instances of prolonged or botched lethal gas executions in the 1980s and early 1990s, state legislatures were the ones at the forefront of the movement away from the American gas chamber.¹⁷⁷ As more nitrogen hypoxia executions begin to take place, its exposure at a state and national level will likely increase as well. When people in these states begin to realize what their governments are doing using their taxpayer dollars, there could be a concerted effort among activists and organizers to push their states to prohibit the administration of nitrogen hypoxia.

This backlash has already occurred in Alabama and Louisiana, the only states in the union to successfully use nitrogen hypoxia. In Louisiana, backlash from Jessie Hoffman's execution was widespread. Before his death, the Jewish community voiced their opposition to the state's desired aim to use lethal gas, invoking the horrors of the Holocaust and the Nazis' use of gas chambers to carry out genocide against the Jewish people.¹⁷⁸ In

¹⁷⁴ FED. BUREAU OF PRISONS, CAPITAL PUNISHMENT, https://www.bop.gov/about/history/federal_executions.jsp [perma.cc/R7CG-W57L] (last visited Jan. 3, 2026).

¹⁷⁵ See *infra* Part III.

¹⁷⁶ See *infra* Part II.

¹⁷⁷ See *infra* Part II.

¹⁷⁸ Dakin Andone, *Louisiana's Jewish community protests nitrogen gas death row executions, seeing a link to 'the decimation of our people'*, CNN (Mar. 12, 2025, at 14:14 ET), <https://www.cnn.com/2025/03/12/us/louisiana-nitrogen-gas-execution/index.html#:~:text=But%20a%20federal%20judge%20this,protections%20ag>

Alabama, witnesses to the execution of Kenneth Smith, the first person in the United States to ever be executed via nitrogen hypoxia, expressed deep reservations and anxieties about the method's efficacy and cruelty.¹⁷⁹ While state legislatures primarily in the South represent voters who skew towards conservatism and may likely be supporters of capital punishment, state legislatures can respond to concerns over the administration of nitrogen hypoxia and course correct to respond to these fears.¹⁸⁰ Additionally, support for the death penalty in the United States is at a fifty-year low, and more than half of Americans between the ages 18–43 oppose the death penalty in any circumstance across all ages, races, and economic classes.¹⁸¹ While there is little to no polling data gauging support for nitrogen hypoxia, more than fifty percent of Americans believe that death by lethal gas is a cruel and unusual form of punishment.¹⁸²

Lastly, abolitionist groups and opponents on the ground in a state that permits execution by nitrogen hypoxia can challenge the law under a respective state's constitution. Each state with a nitrogen hypoxia statute on the books has constitutional provisions that are either identical to or substantially mirror the Eighth Amendment of the United States

ainst%20cruel%20and%20unusual [https://perma.cc/BPE4-D6GH]. Nearly half of the Holocaust's victims were subjected to the gas chamber in concentration camps such as Auschwitz, Belzec, Sobibor and Treblinka. *Id.*; see also *How Many People Did the Nazis Murder?*, U.S. HOLOCAUST MEM'L MUSEUM: HOLOCAUST ENCYCLOPEDIA, https://encyclopedia.ushmm.org/content/en/article/documenting-numbers-of-victims-of-the-holocaust-and-nazi-persecution [https://perma.cc/3HED-92CA] (last visited Jan. 3, 2026) (describing how 2.7 million of the 6 million victims were killed in the gas chamber). Between 1943 and 1944, an average of 6,000 Jews were gassed each day at Auschwitz. *Nazi Gas Chambers*, U.S. HOLOCAUST MEM'L MUSEUM: HOLOCAUST ENCYCLOPEDIA, https://encyclopedia.ushmm.org/content/en/article/gassing-operations [https://perma.cc/HZ4R-ZPTM] (last visited Jan. 3, 2026).

¹⁷⁹ Nicholas Bogel-Burroughs, *A Select Few Witnessed Alabama's Nitrogen Execution. This Is What They Saw*, N.Y. TIMES (Feb. 1, 2024), https://www.nytimes.com/2024/02/01/us/alabama-nitrogen-execution-kenneth-smith-witnesses.html [https://perma.cc/785K-ND46].

¹⁸⁰ Approximately 82 percent of Republicans in "Generation X" or above support the death penalty, with support rising by 2 percent between 2016 and 2024. Jeffrey M. Jones, *Drop in Death Penalty Support Led by Younger Generations*, GALLUP (Nov. 14, 2024), https://news.gallup.com/poll/653429/drop-death-penalty-support-led-younger-generations.aspx [https://perma.cc/2XTU-DPG4]. However, 69 percent of Republicans who are "millennial" or "Gen Z" support the death penalty, illustrating a potential growing split in Republican ranks as it pertains to capital punishment. *Id.*

¹⁸¹ *The Death Penalty in 2024: Public Opinion*, DEATH PENALTY INFO. CTR., https://deathpenaltyinfo.org/research/analysis/reports/year-end-reports/the-death-penalty-in-2024/public-opinion [https://perma.cc/4YLP-3K2M].

¹⁸² Peter Moore, *Young people divided on the death penalty*, YOUGov (Feb. 18, 2015, at 11:43 GMT), https://today.yougov.com/politics/articles/11623-young-people-divided-death-penalty [https://perma.cc/VC3D-VHE6]. However, lethal gas received the most support among other alternatives to lethal injection such as hanging, firing squad, electrocution, and beheading. *Id.*

Constitution.¹⁸³ Considering that the Supreme Court may feel uncomfortable legislating from the bench, state supreme courts certainly have more leeway to judge the constitutionality of a law that arguably appears to violate their state constitutions.

CONCLUSION

The United States government has deemed it permissible to gas its own people. Regardless of the alleged crime, that fact should hang heavy over the hearts and minds of the American people. As this Note established, the concept of using lethal gas to execute prisoners has a horrid and disturbing history, one that cannot risk being repeated. As it stands for Jessie's story, the fallout from his execution demonstrates the public's visceral reaction to the horrors of nitrogen hypoxia. Shortly after the execution, newspaper editorials in New Orleans emphasized how "the use of nitrogen gas is an affront to both the Constitution and human decency" and called for the legislature and the courts to reconsider the use of nitrogen hypoxia.¹⁸⁴ The horrors and fears expressed following his execution resemble the anguish heard from those who bore witness to Walter LeGrand and Gee Jon's final moments.¹⁸⁵ As this Note laid out, for the past hundred years, scores of Americans have frantically sought to discover the silver bullet, the white whale, of a humane method of execution. From Nevada in the 1920s to Louisiana in the 2020s, this Sisyphean undertaking has yielded anything but a humane way to leave this realm.

Supreme Court Justice Benjamin Cardozo once envisioned a future whose inhabitants reflect upon past penological practices with rigid condemnation.

"I have faith . . . that a century or less from now, our descendants will look back upon the penal system of to-day with the same surprise and horror that fill our own minds

¹⁸³ ALA. CONST. art. 1, § 15 ("That excessive fines shall not be imposed, nor cruel or unusual punishment inflicted."); MISS. CONST. art. 3, § 28 ("Cruel or unusual punishment shall not be inflicted, nor excessive fines be imposed."); OKLA. CONST. art. 2, § 9 ("Excessive bail shall not be required, nor excessive fines imposed, nor cruel or unusual punishments inflicted."); ARK. CONST. art. 2, § 9 ("Excessive bail shall not be required; nor shall excessive fines be imposed; nor shall cruel or unusual punishments be inflicted; nor witnesses be unreasonably detained."); LA. CONST. art. 1, § 20 ("No law shall subject any person to euthanasia, to torture, or to cruel, excessive, or unusual punishment. Full rights of citizenship shall be restored upon termination of state and federal supervision following conviction for any offense.").

¹⁸⁴ *Editorial: Jessie Hoffman's death puts our justice system under lens*, NOLA NEWS (Mar. 23, 2025), https://www.nola.com/opinions/our_views/hoffman-execution-louisiana-nitrogen-supreme-court/article_25de9e05-c095-4a17-bd7f-4c849b643662.html [<https://perma.cc/4BT9-AWJC>].

¹⁸⁵ See *infra* Parts II, III.

when we are told that only about a century ago one hundred and sixty crimes were visited under English law with the punishment of death, and that in 1801 a child of thirteen was hanged at Tyburn for the larceny of a spoon . . . Dark chapters are these in the history of law. We think of them with a shudder, and say to ourselves that we have risen to heights of mercy and of reason far removed from such enormities. The future may judge us less leniently than we choose to judge ourselves”¹⁸⁶

One day, the American people will look back on this watershed moment in history: the moment when the United States of America, a beacon of hope and liberty, a talisman in the quest to vanquish tyranny, decided to revive the use of lethal gas to kill its own people. And when they do, be it “a century or less from now,”¹⁸⁷ they will do so in despair over the Pandora’s box their ancestors opened. Today, the annals of history scream at legislators and politicians to heed the lessons of the past. The American people await their response.

¹⁸⁶ Benjamin N. Cardozo, *What Can Medicine Do for Law*, 5 BULL. N.Y. ACAD. MED. 581, 593 (1929) (internal citations omitted).

¹⁸⁷ *Id.*