



Who Killed Nuclear Energy and How to Revive It

By [Emmet Penney](#)

America wants to decarbonize. Tackling climate change has broad public support. The primary avenue we're pursuing to achieve this goal is the decarbonization of our electricity system and "electrifying everything." This is more than achievable; indeed, we have historical precedents. France's nuclear buildout, beginning in the 1970s, achieved the greatest decarbonization in human history; since the 1990s, France has generated around 75 percent of its electricity from nuclear power. In North America, the mantle belongs to Ontario, whose nuclear plants replaced its coal fleet.¹

Yet the United States has not pursued this proven path. Instead, the American nuclear industry is moribund and has suffered public disdain for decades.

Today, especially after the Russian invasion of Ukraine, there seems to be some revival of interest in the "nuclear option." Thus it's worth exploring why America's greatest postwar hope for energy and prosperity never materialized in the twentieth and early twenty-first centuries, and what will be necessary to avoid the same disappointments going forward.

Early Mistakes

Nuclear energy spooled out from America's nuclear weapons program in the late 1940s. Some of the most brilliant minds to ever set foot on American soil brought it to fruition. But this massive achievement fell apart in the 1970s and has remained stagnant for the last half century. The fault belongs, in large part, to the industry itself.

In 1946, President Truman created the Atomic Energy Commission with the flick of his pen and placed control over nuclear energy in civilian hands. As historian Richard Rhodes writes, proponents of the bill "argued that atomic energy was too important to be left to the military. Apparently, it was also too important to be conveyed to the people. Few outside the Manhattan Project and even fewer in Congress knew much about atomic energy."²

It was over a decade between the AEC's creation and the completion of America's first nuclear plant: Shippingport, in 1957, under the Eisenhower administration. Though it required building out nuclear infrastructure, supply chains, and technology from scratch, Shippingport took just over two years to complete. A Herculean effort, it cost hundreds of millions (in today's dollars).

But nuclear weapons disturbed the American public. The Cold War was on, and America wasn't interested in a world where nuclear—whether armaments or reactors—spontaneously flowered across the globe. Thus the Atoms for Peace program was born, an international PR campaign meant to help discourage the public's association of nuclear energy with nuclear weapons.³ AFP also allowed the United States to exert international control over proliferation. Yet the imprint of the Cold War gave nuclear energy its greatest weakness: elite hubris.

The nuclear establishment did not feel the need for candor when dealing with the American public. In 1955, the world's first fast-breeder reactor melted down at Idaho Labs. During a stress test, it overloaded and became permanently damaged, yet hurt no one. Outside the building, the meltdown was undetectable. The AEC

covered up the incident. Eventually, the information leaked and led to a loss of public trust, the first of many wounds to come.⁴

Despite this, in 1974, Dr. Herbert Kouts, who headed up the AEC's reactor safety division, told the Associated Press, "Preliminary results suggest there will never be a major accident in a nuclear power plant. The odds of a major catastrophe were one in one billion to one in ten billion years for a given reactor."⁵

Why did Kouts say such a thing? Either he didn't think the public could handle the truth or his confidence ran so high that he quit reality for self-serving fantasy. He was hardly unique among his peers. The AEC peddled the fiction that nuclear power was impossibly accident-immune to the public.

Lewis Strauss, a wealthy financier and Naval Reserve admiral, found himself at the helm of the AEC during the Bravo Incident at Bikini Atoll. Described by Rhodes as an "arrogant and vengeful Eisenhower appointee," Strauss handled the incident with astonishing dishonesty and insouciance. He told the press "that the fallout . . . was less than the fallout measured from some previous tests and 'far below the levels which could be harmful in any way to human beings.'"⁶ Geneticists responded in force and eventually won their way onto the AEC. By the end of the decade, they had overcorrected and adopted the linear no-threshold standard (LNT) for measuring doses of radiation.⁷

Herman Joseph Muller, a geneticist with a passion for eugenics and socialism, developed LNT. Muller asserted there could be no safe dose of radiation. Any dose, regardless of size or duration, was potentially harmful. Muller was dogged in the promotion and defense of his ideas and went so far as to suppress evidence that directly refuted his conclusions.⁸ He won the Nobel Prize for his research in 1946. As the AEC and various independent scientists worked to establish radiation standards, "the LNT model was accepted as the standard throughout."⁹

It's hard to overstate the significance of this mistake for the AEC. Despite the overstatements of early proponents, nuclear energy was

and is one of the safest forms of energy known to man.¹⁰ And LNT makes little sense on its face. A colleague once put its logic to me like this, “LNT would be like me adding up every time you’ve been cut in your life and then telling you that you’ve bled out.”

By the 1970s, these mistakes—simultaneously misrepresenting the likelihood of accidents while adopting a standard for radiation exposure measurement that made accidents look catastrophically dangerous—would return like boomerangs and all but cut the industry to ribbons.

Nuclear, Utilities, and the Energy Crisis

Yet atomic optimism persisted throughout the 1950s and ’60s. Faith in technological progress ran high. In 1957, Disney aired an episode entitled “Our Friend the Atom” on ABC.¹¹ General Electric featured “Atomsville, USA” in its Progressland Pavilion at the 1964 World’s Fair to teach children about the wonders of fission.¹² Lewis Strauss infamously said that “our children” would know electricity “too cheap to meter” thanks to nuclear energy.¹³ Nuclear scientists understood the environmental benefits of nuclear energy as well. Its cleanliness was part of how scientists like Alvin Weinberg made their case to the public.¹⁴ The Atomic Era had arrived.

But when nuclear power moved into the civilian world, it merged with an already elite-run institution: the investor-owned utility (IOU), which enjoyed regulated monopoly status. Samuel Insull won this status for his industry in the early twentieth century. Negotiating the Scylla and Charybdis of chaotic competition and Chicago aldermen, Insull saw a huge opportunity in regulation. The wildness of competition would disappear while neutering the threat of municipalization.

In part, Insull won the day because his desires matched the moment. Recognizing utilities as regulated monopolies jibed with Progressive Era thinking that saw big business not as an enemy, but a force to be contained and harnessed by the government in service of the people. Importantly, this also meant consolidating power into the hands of

utility elites and their regulators, a problem that would mushroom down the line.¹⁵

Still, Insull was right that regulated monopoly status would “reduce the risk of investing in electric utilities, make utility bonds and stocks more attractive, increase the availability of capital, and lower its price.”¹⁶ And it created the standard utility structure: single firms with control of generation, transmission, and distribution within a geographic region without competitors and guaranteed profits. The “compact” between consumers, regulators, and the utilities was that in exchange for their unique advantages, utilities would provide cheap, reliable electricity to American consumers.

Few complained because, when coupled with the electrification programs of the New Deal era, the utility consensus brought Americans incredible prosperity. As Robert Bryce writes:

Between 1940 and 1970, electricity production in the United States grew ninefold, to more than 1,600 terawatt-hours. Over that same three-decade period, US gross national product increased nearly tenfold, going from \$100 billion to \$977 billion. Personal incomes soared, going from less than \$600 per year to more than \$3,900 (in 1970 dollars). . . . By 1970, the average American was consuming about 7,200 kilowatt-hours of electricity per year . . . more than twice today’s global average of about 3,100 kilowatt-hours per capita per year.¹⁷

Energy is the bedrock of wealth, so it is no exaggeration that the decades fondly remembered as the thirty glorious years of postwar growth were dependent on this electricity boom. But nothing lasts forever. The utilities’ business model began to sour in the 1960s, just when it hit its apex. Nuclear shared its fate.

At first, nuclear energy was too expensive and so less attractive to utilities. But once General Electric and Westinghouse spurred the industry onward by becoming loss leaders (they collectively lost around \$1 billion building plants) the race was on.¹⁸ A herd mentality soon developed as utilities lined up to take advantage of government benefits to build new reactors. So many orders came in that “[w]ith

only two companies building plants, a rapid increase in orders escalated costs for major components and strained the limited supply of qualified labor.”¹⁹

Then utilities ran into a “technological stasis” problem that “provoked significant changes in the dynamics of the utility system.”²⁰ For decades, steam turbines increased in both efficiency and scale, which fed the industry’s growth. Manufacturing firms competed to force down prices and raise consumption. In turn, major utilities supplied the manufacturers with markets hungry for better generating units. This dynamic inspired the utilities to become technological leaders hunting for improved prototypes. A “design-by-experience” approach developed “in which new equipment won field tests before being produced in great quantities,” allowing engineers to find and fix problems before the next batch went to market.²¹ But by the 1960s, manufacturers began to discover that increases in thermal efficiency for generating units hit diminishing returns. Pushing past the issue meant costs so high they undermined the virtuous cycle of affordable improvement. At the same time, utilities began to pressure manufacturers to produce bigger and bigger turbine generators to meet electricity demand. Thus the “design-by-experience” model gave way to a “design-by-extrapolation” process that took designs straight to market without a prototype phase. It succeeded in producing larger units but failed to deliver them reliably. Without the process that provided engineering experience, quality suffered. Pricey redesigns had to be ordered. In 1973, to stem the tide of problems, the AEC “limited the size of new nuclear units to 1,100 megawatts so equipment producers and operators could gain sufficient experience with the new hardware.”²² The problem spread industry-wide and posed a new obstacle for the “grow-and-build” model utilities and manufacturers had come to rely on.

In 1965, the Eastern Interconnection Blackout, the largest blackout the world had known up to that point, bruised utilities’ credibility as benevolent and competent managers.²³ The summers of 1967 through 1969 proved similarly discrediting for East Coast utilities who had to reduce “the voltage of their power to meet peaks in consumption (thus causing ‘brownouts’)” and ask “customers to curtail power use.”²⁴ The

problems rolled over into the next two years. Then came the energy crisis of the early 1970s.

Many expected nuclear to supplant coal. Nuclear enthusiasm meant less interest in coal, leaving America with limited coal reserves just as nuclear stalled in its ramp-up.²⁵ So when OPEC flexed its muscles in 1973, the utilities hit a wall as they became more reliant on newly expensive foreign oil to keep the lights on. To make matters worse, the growth rate of annual demand for electricity dropped “from 7.3 percent from 1960 through 1973 to 2.2 percent from 1973 to 1982.”²⁶ Inflation, high interest rates, and a boom in regulatory activism did the rest.

Utilities looked to cut costs. The new, engineering-challenged nuclear plants, already running up consumers’ bills, met the chopping block. Between 1974 and 1978, eighty nuclear plants were canceled, representing ninety thousand megawatts’ worth of new capacity (about 60 percent).²⁷ Only Bonneville in the Pacific Northwest persisted in its stubborn push to complete its plants, embittering an entire region. By the end, Bonneville’s bungling caused the Washington Public Power Supply Systems to default on \$2.5 billion in municipal bonds issued to build two nuclear power plants.²⁸ The dream of “too cheap to meter” evaporated, and with it went utilities’ credibility and nuclear’s potential.

The Dawn of ALARA and the Nuclear Regulatory Commission

Around the same time, a new obstacle for nuclear energy emerged. The AEC was replaced by the Nuclear Regulatory Commission. The AEC had been tasked with both promoting and regulating nuclear energy—an obvious conflict of interest. The NRC was given but one task: to regulate. The most decisive move it made in taking up its charter was the approval of a new nuclear safety standard. Following the logic of LNT, the NRC approved the As Low As Reasonably Achievable (alara) standard to measure radiation exposure.

The AEC introduced alara in 1971. Under alara, all nuclear plants would have to be designed and built such that radiation levels were “as

low as practicable,” a standard so broad as to become impossible to fully achieve.²⁹ In 1975, the NRC put this standard into effect. To put this in perspective, if we used alara for any other industry, we would shutter the airlines immediately, evacuate every Colorado mountain town, and bulldoze the DeVargas Skate Park in Santa Fe, New Mexico, which sits on a granite deposit shot through with uranium. All three of these expose portions of the population to elevated levels of radiation on a regular basis.

But we don't do that for any other industry, just nuclear. In 2015, scientists and experts petitioned the NRC to reconsider their use of alara. Six years later, the NRC denied the petition.³⁰ That the academy, the national labs, and the utility industry embraced alara stands as a powerful and demoralizing fact. Alara makes it nearly impossible to build any nuclear. To clear this hurdle, a new project must be so burdened with excessive safety measures that the added complexity shoots the price up. This is proudly and unironically referred to as the “gold standard” within the industry because it has succeeded in making nuclear so much “safer.”

At its birth, the NRC's new regulatory regime added expense and delays to plants nearing completion—by 1978, “new requirements were being imposed [on nuclear energy] at the rate of about 1.3 per working day.”³¹ To date, we have yet to build a single reactor design that wasn't approved by the AEC. The last reactor built in the United States was Watts Barr 2, which began in 1973 and was completed in 2016 after years of paused construction. The Vogtle plant in Georgia has gone five years and nearly \$16 billion over budget.³² Meanwhile, decommissioning has proven quite lucrative.³³ No surprise, then, that America's nuclear fleet has fallen into decline. Between 2013 and 2021, America shut down twelve reactors.³⁴ A “gold standard” indeed.

Yet the fault does not lie solely with the utilities or the regulators or the Cold War managerial elites. Since the 1960s, the counterculture's anti-human romanticism has also played a potent role in shaping our national discourse around energy, and nuclear energy in particular. To understand why few have endeavored to revitalize nuclear energy as a

vital tool for solving climate change, we must turn to the environmental movement.

Soft Eugenics against Hard Energy

In order to comprehend how environmentalists came to oppose rather than promote the world's largest source of clean energy, we must uncover the movement's initial motivations.

The postwar American environmental movement began as an outgrowth from the eugenics movement. This has been largely forgotten, leading one historian to write, "Although one can hardly pick up an environmental book from the late 1960s and early 1970s that does not warn about overpopulation, it is surprisingly easy to find a history of the movement that barely mentions overpopulation."³⁵ Eugenics took root in late nineteenth-century America with the formation of groups like the Immigration Restriction League and the Eugenics Records Office. Its boosters included historic figures like Theodore Roosevelt and lesser-knowns like Madison Grant, whose bestselling book *The Passing of the Great Race* was referred to by Hitler as his "Bible," and Henry Fairfield Osborn, then president of the Natural History Museum. Both Grant and Osborn connected poor breeding with environmental degradation. "According to these gentlemen," Robert Zubrin writes, "non-Nordic immigrants did not share the resident Anglo-Saxon/Teutonic race's deep feeling for Nature . . . and thus represented an unendurable threat to America's remaining pristine wilderness areas." The pair would go on to fund the Sierra Club and the Save the Redwoods League. Osborn's son, Fairfield, would write one of the two books that bridged the gap between prewar eugenics and the postwar environmental population control ideology.³⁶

Having fallen out of favor during World War II due to its associations with Nazism, eugenics returned with gusto under the banner of "population control" after the war. Two books, William Vogt's *Road to Survival* and Fairfield Osborn's *Our Plundered Planet*, emerged as national bestsellers in 1948. The latter sold millions of copies and won accolades from Aldous Huxley, Eleanor Roosevelt, and Albert

Einstein.³⁷ Vogt and Osborn warned of a planet stripped bare and made uninhabitable by the industrial stress of population growth.

Their work, though largely disproven, inspired Paul Ehrlich, whose bestselling environmental elaboration of Vogt and Osborne's ideas was titled *The Population Bomb* (1968).³⁸ In it, Ehrlich made the relationship between population growth, industrial intensity, and environmental degradation more explicit. It was originally titled *Population, Resources, and Environment*, but received its publication name from a pamphlet put out by the Hugh Moore Fund, as well as from General William Henry Draper Jr., a denazification opponent and founder of the eponymous Draper Fund, a eugenicist organization.³⁹ Ehrlich's call to action was pointed:

Our position requires that we take immediate action at home and promote effective action worldwide. We must have population control at home, hopefully through changes in our value system, but by compulsion if voluntary methods fail. Americans must also change their way of living so as to minimize their impact on the world's resources and environment.⁴⁰

Ehrlich would appear on the Johnny Carson show six times.⁴¹ But Ehrlich was far from the only writer on the scene. The 1960s and '70s boasted a deep roster of "population control" writers, as Robert Zubrin, Richard Rhodes, and Michael Shellenberger have catalogued.⁴²



*The 1954 pamphlet from which Ehrlich's *The Population Bomb* took its name.*⁴³

For our purposes, it must be noted that Erlich's book was written at the request of David Brower, president of the Sierra Club. According to Erlich and his wife, *The Population Bomb* was "written in response to a request that Paul summarize arguments he had been making in the media that the population issue should be taken up by the growing environmental movement . . . triggered in no small part by Rachel Carson's *Silent Spring* (1962)" and to influence the 1968 election.⁴⁴

Many prefer to trace postwar environmentalism's origins to *Silent Spring*, seemingly convinced that it stands as an uncomplicated work of environmental concern. It's certainly true that the environmental movement cut its teeth fighting against DDT, a major culprit in Carson's book, which inspired the Environmental Defense Fund to form.⁴⁵ Less discussed is the general debunking *Silent Spring* has since received.⁴⁶ Less discussed still is the anti-DDT campaign's roots in the eugenics movement.⁴⁷ DDT killed mosquitoes and so alleviated malaria, an apparently disastrous victory for Third World birth rates. To take one example, the year Rachel Carson received her contract for *Silent Spring*, 1958, Aldous Huxley (brother to Julian Huxley, leader of the British Eugenics Society) wrote *Brave New World Revisited*, in which he argued that using DDT to stop malaria meant worldwide disaster from overpopulation.⁴⁸

In response to the public pressure incited by Carson's book, the Environmental Protection Agency launched a seven-month-long investigation which featured 125 expert witnesses and 365 exhibits.⁴⁹ At the end of the investigation, the presiding judge ruled that "The uses of DDT under the registration involved here do not have a deleterious effect on freshwater fish, estuarine organisms, wild birds, or other wildlife. . . . DDT is not a carcinogenic hazard to man . . . DDT is not a mutagenic or teratogenic hazard to man."⁵⁰

He was overruled by the EPA's administrator, William D. Ruckelshaus, who would go on to sponsor the Draper Fund.⁵¹ Ruckelshaus neither attended the hearing, nor read the report, and banned the use of DDT in 1972.⁵² The American ban of DDT rippled throughout the world and cut off poorer nations from the pesticide. Tens of millions have perished from malaria since.⁵³

Nevertheless, the single-issue DDT campaign blossomed into the environmental movement, which began to find fertile ground on the U.S. Left. The American Left, which had split from the anti-Communist and patriotic American labor organizations, increasingly found itself shattered by McCarthyism, Hoover's boys, and the revelations of Stalin's brutality. As a new generation of lefties emerged from the counterculture, they came to believe American workers had either been bought off with postwar opulence and/or were so brainwashed with false consciousness that they could no longer serve as a viable leftist constituency. So, the Left made a transition from a Marxist labor movement to a cultural and issue-oriented collection of causes.⁵⁴ Environmentalism was one such cause.

And since the New Left, whose most radical members often hailed from wealthy families, had little relationship with labor, it became easy to adopt an antagonistic stance toward industry. They didn't want control over the factories, because they didn't want the factories to exist in the first place. Soon, the antiwar movement merged with the environmental movement and its population control ideology. A journalist who witnessed this transition wrote:

By 1970, thousands of earnest and idealistic Americans of all ages were swapping their "End the Killing in Vietnam" buttons for more modish buttons bearing the words "People Pollute." The greatest peace movement ever created in America . . . now committed hara-kiri on national network television in the name of the Moore revival of Malthusianism.⁵⁵

Hence the power of the phrase "population bomb," which drew an obvious parallel to the atomic bomb, and so to nuclear energy itself. Some environmentalists made this connection explicit, likening overpopulation to a world-ending H-bomb.⁵⁶

The End of Growth

Selling the American public on degrowth proved far easier than the direct call to reduce the human population. Pollution had become a hot-button issue in the 1950s after it was first "discovered." Until smog choked residents to death in a small town south of Pittsburgh in 1948,

triggering a federal investigation, what we call pollution had been seen as a mere nuisance.⁵⁷ After this, many could make a connection between environmental damage and industrial achievement and economic growth. When the energy crisis came, its results seemed to make the environmentalists' case for them: growth looked unsustainable, environmental harm looked terminal, and the days of plenty appeared over.

It is difficult to replicate the sense of catastrophe the 1970s visited upon America. After World War II, a panic over "reconversion" had swept the nation. Could America avoid a postwar depression, as it had seen after the First World War, by shifting its wartime economy to meet civilian purposes? And if it could, how? The answer adopted by everyone from New Dealers like David Lilienthal to Richard Nixon, from the National Association of Manufacturers to the AFL-CIO, was to increase consumer purchasing power.⁵⁸ This required economic growth. And this strategy came freighted with civic weight. It was not only beneficial to Americans to buy homes, new appliances, new cars, and so on—it was now their duty. Through their purchasing power, Americans flattened class distinctions, revved the national economic engine, and secured a more placid and prosperous nation after years of turmoil.⁵⁹

But the energy crisis, braided together with stagflation, changed all that. This proved tragic for America's utilities in particular. Like every other major industry, they had sold the country on the idea of growth. As discussed above, they were one of the postwar boom's prime movers. They had also promoted their benevolent managerialism as the river from which that growth flowed. This was how they legitimized their position as regulated monopolies.⁶⁰ With the energy crisis came a legitimation crisis brought about, in part, by the business model that had granted them their position in the first place. By 1980, the growth ideology was dead, and what Americans had taken to heart as their civic duty for decades shared its coffin.

This legitimacy crisis spot-welded to the energy crisis allowed for the mainstreaming of the environmental movement, which had its own vision for energy in America. Coal industry veterans like Amory Lovins

and E. F. Schumacher, whose seminal works—“Energy Strategy: The Road Not Taken?” (1976) and *Small Is Beautiful: Economics As If People Mattered* (1973), respectively—led the ideological charge.⁶¹ No longer would America pursue the “hard” energy path of large, centralized, nuclear power plants. Instead, it would embrace “soft” renewable technology—small enough to decentralize and in harmonious accord with nature.⁶² David Brower reprinted Lovins’s essay in his organization’s magazine and nominated him for the Nobel Prize.⁶³ Eventually, the nonprofit sector, academics, and utility elites would come to accept many of these ideas.⁶⁴ President Jimmy Carter’s infamous “malaise” speech and his National Energy Act solidified the new cultural and policy direction: away from energy abundance, toward energy conservation. Environmentalist (and racist ideologue) Edward Abbey’s quip that “growth for growth’s sake is the ideology of the cancer cell” became conventional wisdom. The environmentalists counted their wins.

No Nukes

And so the environmentalist forces against nuclear energy began to cohere. As it gained prominence, the environmental movement grew in both sophistication and reach. It honed in on three themes: hostility toward energy abundance, the restructuring of society to reduce energy use, and “general dissatisfaction with the present social and economic structure of society and the suggestion that energy should be used as a means for societal change not directly connected with energy.”⁶⁵ Nuclear represented both “the Man” and lethal energy abundance. Paul Ehrlich said, “In fact, giving society cheap abundant energy at this point would be the equivalent of giving an idiot child a machine gun.”⁶⁶ Amory Lovins echoed Ehrlich’s sentiments:

If you ask me, it’d be little short of disastrous for us to discover a source of clean, cheap, abundant energy because of what we would do with it (emphasis in the original). We ought to be looking for energy sources that are adequate for our needs, but that won’t give us the excesses of concentrated energy with which we could do mischief to the earth or to each other.⁶⁷

To win its war against nuclear and energy abundance, the movement pursued means political, legal, and cultural. On the political plane, the movement secured nuclear moratoria across the country. From the 1980s onward, several states adopted outright bans on new reactor construction, while others disallowed the construction of nuclear plants until the alleged “waste problem” was solved. Ralph Cavanagh of the NRDC scored one such victory in California in the early '80s.⁶⁸ Illinois, Minnesota, Vermont, Oregon, Wisconsin, Rhode Island, Connecticut, Maine, New York, New Jersey, Massachusetts, Montana, and West Virginia all adopted similar policies. Given the environmentalists' push to keep any such waste repositories from being built (and Carter and then Clinton's kiboshing of the pursuit of breeder reactors which could run off spent fuel), those waste contingencies amounted to bans.⁶⁹ To date, it is worth pointing out, no one has been harmed by civilian nuclear waste.

Environmental groups have been similarly relentless in the pursuit of closing existing nuclear plants, often by tying up utilities in lengthy legal battles over trumped-up environmental concerns.⁷⁰ An attorney who regularly represented antinuclear organizations put it this way: balancing energy needs with environmental impact “involves compromising and sacrificing. That's their role. Our role is not to balance.”⁷¹ Even labor leftists of the “old type” like Bernie Sanders have thrown in with such organizations to destroy high-paying union jobs and clean energy by forcing nuclear plants to close early.⁷² Their most recent victories on this front include prematurely closing the Indian Point plant in New York (after which emissions rose) and convincing the NRC to reverse its operation license renewals for the Turkey Point and Peach Bottom plants in Florida and Pennsylvania, respectively.⁷³ In 2021, they almost succeeded in killing the Byron and Dresden nuclear plants in Illinois.⁷⁴

A more straightforward means of poisoning the public on the idea of nuclear energy looked like *The China Syndrome* (1979), a movie starring antinuclear environmentalist and population control enthusiast Jane Fonda.⁷⁵ The film's villain is a ruthless utility executive, and it depicts a nuclear plant melting down and exploding like a nuclear weapon. Twelve days after the film hit theaters, Three

Mile Island experienced a meltdown. It never again generated electricity. The surrounding area was evacuated, and though no one was hurt, the accident solidified the alleged dangers of nuclear in the public's mind.⁷⁶ Because the nuclear establishment had both denied the possibility of such accidents while adopting the most sensitive metrics for measuring their danger, there was little they could say to save face. The film was a smashing success.

Nuclear's public image as a safe and reliable form of energy lay in such tatters that another major accident would condemn it in perpetuity. In 1986, when shoddy Soviet-designed reactors at the Chernobyl plant in Ukraine catastrophically melted down during an unsanctioned experiment, that's exactly what happened. A month after the incident, Hans Blix, the International Atomic Energy Agency's director general, told the IAEA Board of Governors that "[i]f another accident were to occur, I fear the general public will no longer believe any contention that the risk of a severe accident is so small as to be almost negligible."⁷⁷ Meanwhile, the environmental movement made hay.

A litany of howlers about Chernobyl has spewed forth for decades.⁷⁸ A recovered document from a 1991 conference called "Conference for a Nuclear Free 1990s—No More Chernobyls" reveals their cynicism. The conference's lowest moment is easily this one: a commitment to spreading the falsehood of "Chernobyl AIDS," a supposed consequence of radiation exposure that results in "an immunological deficiency syndrome especially prevalent in children," to discredit nuclear.⁷⁹ Ralph Nader and Amory Lovins both spoke at the event. Peter Bahouth, then executive director of Greenpeace, served as a plenary chair.

No such syndrome exists. The surrounding population of Chernobyl, some six million people, received a radiation dose equivalent to a single CT scan (usually delivered in seconds) over the course of twenty years.⁸⁰ Given that groups like Act Up and TAG were still fighting to end the AIDS pandemic at that time, which had killed over 100,000 people by 1990 (Chernobyl killed only 52), it's difficult to understand the environmentalists' sense of proportion, to say nothing of their

intellectual dishonesty or moral unseriousness.⁸¹ Regardless, the discipline and coordination that the convention document belies can't be denied. Nor can it be denied that these groups succeeded in their attempt to demonize nuclear energy in the public consciousness. The Washington Post and the New York Times, for instance, bought the "Chernobyl AIDS" yarn.⁸²

When a 9.0 earthquake and tsunami rocked Japan in 2011, the Daiichi plant in Fukushima melted down. Water flooded the plant, which shut off generators responsible for powering the residual heat ventilation system. The resulting hydrogen build up caused explosions that hurt several people. No one was harmed by nor did anyone receive lethal doses of radiation.⁸³ But the accident served as another chance to scaremonger about radiation and "nuclear safety" nonetheless. The environmental movement's assault on nuclear in the public consciousness has been a rout.

The Current Crisis

In the last few decades, climate change has given the environmental movement the opportunity to retrofit their apocalyptic population control rhetoric with that of imminent environmental collapse from global warming. This, in turn, has also given them a chance to distance themselves from their ideological roots. Few espouse population control as an explicit strategy for tackling climate change. But the Great Awakening has made it difficult for the major environmental groups to avoid their unsavory legacies.⁸⁴ Some groups, like Greenpeace and the Sierra Club, have tried to clear the air.⁸⁵

A piece written by Brittney Bush Bollay, Seattle's Sierra Club Chair, stands as one of the most candid confrontations with the group's legacy. She writes, "Sierra Club must reckon with its own role in this history. Our complicity is inescapable: the Club was heavily involved in the initial publishing of Erlich's [The Population Bomb], and for many years supported its ideas."⁸⁶ Bollay's essay concludes with a discussion of the Sierra Club's stance on immigration as an example of its new, anti-racist position, but never mentions energy. She's not alone. Despite the about-face on the population question, the

environmental movement has cleaved to its energy prescription for population control: the “soft path” of a renewable energy future. Even the democratic socialist variant of green policy largely shares in this unanimity.⁸⁷

Instead of reexamining their energy vision, the greens have committed themselves to promoting energy poverty. In part, they’ve stayed the course because doing so has made them lots of money. The Environmental Defense Fund and the NRDC have a combined budget of nearly \$384 million, for example.⁸⁸ It’s also the case that the renewables schemes they push for tend to benefit financial elites like Michael Bloomberg, Tom Steyer, George Soros, and Jeff Bezos, who then plow millions into their organizations.⁸⁹ Renewables projects, stimulated by tax breaks, have invited major banks to the trough. Warren Buffett infamously said that he would do whatever it legally takes “to reduce Berkshire’s tax rate. For example, on wind energy, we get a tax credit if we build a lot of wind farms. That’s the only reason to build them.”⁹⁰ A recent study found that “tax-motivated investors in today’s renewable energy deals are typically a highly restricted set of the US’s largest banks, insurance companies, and financial institutions” who “have been joined more recently by a handful of giant corporations like Google and Amazon.”⁹¹ Those who reap the rewards of the tax breaks are also some of the biggest donors to climate change causes that back renewables-only policies.⁹²

Green NGOs have also won their way into the halls of power. NRDC’s former president, Gina McCarthy, currently serves as the first-ever climate adviser to the White House. The academy and some of America’s major press organs reliably support their agenda.⁹³ And it’s not as if the old guard has simply disappeared. Ralph Cavanagh still plugs away at shutting down Diablo Canyon nuclear power plant in California and Amory Lovins heads the Rocky Mountain Institute, teaches at Stanford with Paul Ehrlich, and enjoys broad regard for inspiring policies like Germany’s Energiewende, which led to Germany closing several nuclear power plants.⁹⁴ If the greens were to walk back their position on energy in general and nuclear in particular, it would mean disaster for their legitimacy, their power, and their bank accounts.

Yet the results of their victory have been calamitous. Last year in America, the shortcomings of green energy policy were on full display. During the 2021 Uri storm, Texas's \$66 billion in renewable energy investments failed to perform in a time of crisis, which, when coupled with the poor market design of the grid, created blackouts.⁹⁵ Hundreds died. Texas isn't the only one—overbuilding renewables now breeds instability all over the American electric grid.⁹⁶ A recent meeting of the Midcontinent Independent System Operator, the institution responsible for stewarding the grid in the middle of the country, homed in on the problems ambitious renewables buildouts create. One of MISO's vice presidents put the problem this way:

We're seeing less predictable dispatchable generation. We're seeing retirements, we're seeing forced outage rates increase in those assets we depend on to manage that increasing variability and volatility. . . . So while volatility is increasing, our ability to deal with it is decreasing simultaneously.⁹⁷

In other words, the all-renewables decarbonization plan adds volatility to energy portfolios, forces out reliable electricity generators, and destabilizes the grid.

And by making us more reliant on weather-dependent energy, the environmental movement has made us more vulnerable to the weather patterns they warn climate change creates.⁹⁸ Moreover, renewables have reversed their decarbonization aims by locking in natural gas and coal while making America more dependent on the cheap coal China uses to make solar panels.⁹⁹ Our current energy and food crises can be directly linked to the West's pursuit of fashionable green policies.¹⁰⁰

Many of these problems are features, not bugs. The all-renewables dream was never about reducing greenhouse gasses, but about entrenching energy poverty to halt population growth, so as to spare the environment.

What Is to Be Done?

Nuclear energy offers a much better way forward, but America is not in a position to begin a massive nuclear build-out under current

conditions. If we embarked on such a policy tomorrow, it would succeed only in discrediting nuclear for another half century at least. What would it take to get us to where we could split atoms with ease?

(1) Repeal moratoria. Lucky for us, this is underway. Just this year, West Virginia voted to repeal their moratorium on new nuclear. Illinois is considering the same. Many states with moratoria have coal fleets slated to retire. Repealing moratoria puts another option on the table for communities facing coal plant closures: repowering with nuclear plants.¹⁰¹

(2) Reregulate and reform. The need for regulatory reform in general and safety reform, in particular, is obvious. We must abandon alara as a model. But we also have to reform the NRC, whose opaque, dawdling, and labyrinthine approval process has hamstrung the industry. We need fewer, clearer, and more sensible regulations.

(3) Build abroad. Regulatory bloat and political opposition aren't the only problems facing nuclear—there's also a human capital problem. Our ability to churn out complex engineering projects has atrophied, much to nuclear's detriment.¹⁰² To remedy this, the United States and its allies must compete with the two leaders in global nuclear construction: Russia and China. By doing so, we can not only decarbonize, but bring greater prosperity to the world, and strengthen our national engineering capacities.

Finally, while the above measures are critical, they will all come to naught unless the environmental movement is dealt with. As long as it exists in its current, anti-growth form, we will never build nuclear at scale in America, and neither will we tackle climate change. But if we can commit to confronting today's so-called environmentalists on the political and cultural fronts while preparing the transition from fossil to fission, then a radiant tomorrow awaits us.

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