

Evaluating Economic Factors in the Consideration of Applications to the Ky. Public Service Commission to Build Nuclear Generating Facilities

A White Paper presented by Louisville Climate Action Network (LCAN)
in support of KY PSC Case No. 2025-00186

Researched and written by Ken Shapero, LCAN Director of Policy & Research

EXECUTIVE SUMMARY

During the past decade, the Kentucky state legislature has demonstrated its enthusiasm for the development of nuclear-fueled electricity generation in the Commonwealth:

In 2017 the state legislature passed KRS 278.600 and KRS 278.610, lifting a long-standing moratorium on the construction of new nuclear power facilities in Ky.

And in 2023 and 2024 the legislature adopted Senate Joint Resolutions 79 and 140 that formalized creation of the Ky. Nuclear Energy Development Authority (KNEDA) and instructed the Ky. Public Service Commission (PSC) to hire staff with the necessary expertise to evaluate, approve and/or regulate potential nuclear power generation.

Specifically, the Joint Resolutions ordered the PSC to study the experience of other states regarding best practices for regulating nuclear power generation and to find and remediate any regulatory impediments to the implementation of nuclear power generation or the “nuclear ecosystem” in the Commonwealth.¹

Nothing in any of these legislative actions relieves the PSC of its core obligation to ensure that citizens of the Commonwealth are afforded safe, reliable and economical public utility services.

Whether or not one agrees with the premise that nuclear-powered electricity generation is desirable, there is well-established legal precedent in Kentucky that legislative enactments giving precedence or incentives to one type of electrical generation over another type do not supersede the PSC’s core obligation to ensure “fair, just and reasonable rates” per KRS 278.030.

¹ Neither resolution defines “nuclear ecosystem” or explains how nuclear ecosystems fall under the jurisdiction of the PSC.

This precedence is especially true, Kentucky courts have ruled, in light of state law (KRS 278.018) that gives retail electric suppliers the *exclusive right* to furnish retail electric service *to all electric-consuming customers* located within their certified territory and *strips from consumers the right to price-shop* for the most affordable rates.²

Although the PSC is obligated to comply with legislatively-enacted nuclear directives, it still must abide by its legal obligation to protect the public from any proposal—nuclear or otherwise—that yields less value, or even negative value, than competing proposals from other modes of power generation that provide comparable service with better economics.

Nuclear power in the United States so far has failed to deliver on its promise of providing least-cost electricity to ratepayers. Indeed, to date, new nuclear technologies, such as small modular (nuclear) reactors (SMRs), have failed to provide a single example of a lower-cost power source.

The PSC must require verifiable proof that any proposed nuclear facility is truly least-cost—including the true costs of long-term storage of spent fuel and radioactive waste—before allowing any cost recovery from ratepayers.

It's difficult to imagine that such rigorous analysis could be possible without real, current data collected during the recent rollout of a nuclear-powered generating facility in another jurisdiction.

Kentucky law, including the recently enacted joint resolutions regarding nuclear power, does not require the PSC to approve any proposal that would foist upon ratepayers the risks and costs of undemonstrated nuclear-power-generation experiments.

Until there is verifiable data from a recent nuclear deployment in another jurisdiction, the PSC should direct its attention to alternative electricity generation technologies with recent demonstrable track records of least-cost deployment and operation—in particular solar with battery storage.

In evaluating nuclear generating facility proposals, the PSC must examine all inherent operational challenges, including radiological safety, short- and long-term nuclear waste storage, potential environmental consequences, site security, exposure to terrorist or enemy attack, and other pertinent factors.

Ultimately, the PSC must determine the demonstrable economic impact and potential economic harm nuclear generation proposals may inflict on ratepayers if allowed to proceed. This White Paper, with its many real-world examples, provides compelling

² *Kentucky Industrial Utility Customers, Inc. v. Kentucky Public Service Commission*, 504 S.W.3d 695 (Ky. App. 2016) (No. 2015-CA-000398-MR)

evidence that in many cases, nuclear power generating projects in the United States have cost more money and provided less benefit than their developers originally claimed.

It's entirely possible that these facilities would never have been approved or attempted had the true costs been known at the time they were first envisioned. In fact, as this White Paper documents, a significant number of nuclear projects were never completed, or, if completed, were abandoned before their date of obsolescence, because of cost overruns and excessive maintenance and safety mitigation costs.

The Elusive Promise of Nuclear Power Generation

Nuclear fission technology has long dangled the promise of generating reliable, efficient electricity free from the unhealthy emissions (“priority” pollutants, air toxics, mercury and carbon) produced by coal, gas and other types of combustion generation.⁸ So it is understandable that the Kentucky legislature has adopted measures to encourage nuclear development in the state and to direct the PSC to ready itself to favorably consider and evaluate potential applications for nuclear power generation in the Commonwealth.

Despite nuclear power’s tantalizing promise, deployments in North America have been riddled with accidents, radiation leaks, massive cost overruns, premature closures and facility abandonments. Indeed, the history of nuclear generation in the U.S. and Canada has exacted a heavy toll of financial, health, and psychological burdens on affected communities and utility ratepayers and taxpayers in general.

Nevertheless, many public utilities and private developers in the United States are taking another look at nuclear generation due to several factors, including:

- Financial incentives from the federal government.
- Fission-reactor technology innovations and engineering improvements and new claims of real-world viability.
- Increased power demand due to increased electrification, e.g., heat pumps and electric vehicles.
- Growing concern over the harmful impacts of carbon pollution on the climate.
- Shocking predicted demands for electricity to power hyper-scale data centers.
- The growth of cryptocurrency and the massive demand that cryptocurrency mining puts on the electric grid.

The Commonwealth of Kentucky, in an effort to spur economic development and to position itself as a forward-looking state, has joined other states with renewed interest in exploring nuclear power generation. To paraphrase Ky. Sen. Danny Carroll, a leading

⁸ That promise omits the fossil fuels burned in facilities with minimal air-pollution control equipment to power the energy-intensive enrichment facilities.

proponent of nuclear power generation, part of what has made America great is the fact that its people and its leaders have maintained and projected an optimistic outlook.⁴

While this can-do spirit is undoubtedly true, it is also true that throughout its history America has benefitted greatly from clear analysis and decisive actions based on facts.

This remainder of this report is an attempt to gather those facts.



Louisville Climate Action Network consists of 65 nonprofit organizations, for-profit businesses, congregations and educational institutions plus nearly 1,400 individuals who work together for a healthy climate, operating efficiently, on sustainable energy.

LCAN is the go-to source for reliable, action-inspiring information on climate change, its impacts and its many solutions. Besides its educational programming and technical services to other nonprofits so they may “spend less on utilities, more on mission,” LCAN advocates for smarter public policies to reduce carbon pollution and cut costs.

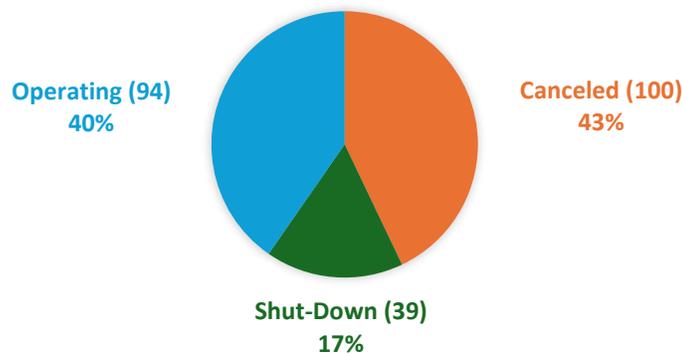
⁴ Public comments on Aug. 4, 2025; Informal Conference, PSC Case No. 2025-00186

Evaluating Economic Factors in the Consideration of Applications to the Ky. Public Service Commission to Build Nuclear Generating Facilities

Nuclear power’s costly history in the U.S. and Canada

The United States has pursued nuclear power development since the 1950s, resulting in a mix of operational reactors, facility shutdowns and abandoned projects. As of 2025, less than half of all initiated reactor projects have resulted in long-term operational facilities.

Status of Nuclear Power Facilities in the U.S.



5

Key Statistics

- More than 250 fission reactor projects have been initiated in the U.S to date. This number includes reactors that were built, commissioned, or began construction during the peak of nuclear expansion in the mid-20th century.
- Of those reactors, only 94 are still in operation, These reactors are distributed across 54 nuclear power plants and continue to supply baseload electricity. ⁶

⁵ US Energy Information Agency and US Nuclear Regulatory Commission statistics: <https://www.eia.gov/nuclear/reactors/shutdown/>, <https://www.nrc.gov/reading-rm/doc-collections/event-status/reactor-status/>, and <https://www.eia.gov/electricity/data/eia860/>

⁶ U.S. Nuclear Regulatory Commission, “Backgrounder on Research and Test Reactors;” U.S. Energy Information Administration, U.S. Department of Energy, “Nuclear Explained: Where Our Nuclear Power Plants Are Located”

- Thirty-nine nuclear reactors have been permanently shut down or retired due to aging infrastructure, economic pressures, or safety concerns.⁷
- More than 100 nuclear power projects in the U.S. were canceled or abandoned before completion. This represents nearly 45 percent of the 250 nuclear reactor projects that had completed significant planning and/or construction.⁸ Many of these projects were after the 1979 Three Mile Island accident, which triggered a wave of regulatory scrutiny and public opposition.

Selected List of Failed Nuclear Power Projects and Their Outcomes

The following list describes the circumstances surrounding the failures of a selected group of nuclear-powered generating facilities that were built in the United States and Canada between 1952 and the present. All of these facilities have experienced serious accidents and/or other problems that have created excess costs, premature closures and in some cases serious health risks and deaths to employees or people who live in and around the communities they served.

1952: The NRX Reactor at Chalk River Laboratories, Ontario, Canada

The NRX reactor was operated by the National Research Council of Canada and later transferred to Atomic Energy of Canada Limited, a federal Crown corporation established to manage Canada's nuclear research and development. On Dec. 12, 1952, the reactor experienced a partial meltdown causing a significant radioactive release.

Although several workers were exposed to excessive radiation during the incident, there were no reported public injuries. The financial cost for cleanup and repairs was over \$10 million (approximately \$122 million in 2025 dollars) for cleanup and repairs.⁹ Since this was a research reactor, there was no direct impact on utility rate payers.

Approximately 32 workers were exposed to elevated levels of radiation during the clean-up and containment efforts. Among them were Canadian and U.S. military personnel, including a young U.S. Navy officer named Jimmy Carter, who participated in decontamination activities.

⁷ U.S. Energy Information Administration (EIA). "Shutdown Reactors."

⁸ Power Magazine, THE BIG PICTURE: Abandoned Nuclear Power Projects; Feb 1, 2018: <https://www.powermag.com/interactive-map-abandoned-nuclear-power-projects/>

⁹ NRX Incident Summary <https://nuclear-energy.net/nuclear-accidents/chalk-river>

Some individuals received doses estimated at several hundred millirem to a few rems,¹⁰ which were considered significant but below the threshold for acute radiation syndrome. Protective equipment and decontamination protocols were limited by the era's standards.

While Chalk River was a research facility, and never generated electricity for the general public, it exposed early on in the history of nuclear power the fact that seemingly innocuous maintenance issues and minor accidents could create serious health hazards.

1961: The SL-1 Reactor in Idaho Falls, ID

The SL-1 (Stationary Low-Power Reactor Number One) was a small 3-4.7 MW (thermal equivalent) prototype nuclear reactor designed to provide power and heat to remote military installations, particularly radar sites in the Arctic. It was part of the U.S. Army Nuclear Power Program and located at the National Reactor Testing Station near Idaho Falls, ID. Developed specifically for the U.S. Army, the crew involved in the accident were young, enlisted military personnel.

On January 3, 1961, the SL-1 reactor exploded suddenly when a control rod was manually withdrawn too far, causing a rapid power surge. The explosion killed all three operators at the reactor, and then released radioactive material into the surrounding area.

In order to clean up the site, workers had to dismantle the reactor, decontaminate the site and bury contaminated materials. General Electric Co. conducted the cleanup between May 1961 and July 1962, including removal of the reactor vessel and core.

The total cost of the cleanup and recovery operation was approximately \$10 million in 1962 dollars,¹¹ which would be between \$100 and \$105 million in 2025 dollars.

Although there were three fatalities at the plant, there was no reported public exposure to radiation. Since SL-1 was a small military reactor, there was minimal financial impact on utility ratepayers. However, U.S. taxpayers ultimately paid for the cleanup.

The SL-1 reactor experience was an early warning sign not just of the health hazards that could be created by nuclear accidents, but of the significant resulting unanticipated and ongoing financial toll that even a small nuclear power generating facility could exact.

¹⁰ A Roentgen equivalent man (rem) is a measure of the biological effects of radiation exposure. A single chest x-ray is rated at 10 millirem. German physicist Wilhelm Röntgen (1845-1923) produced and detected electromagnetic radiation in the wavelength range known as X-rays.

¹¹ Idaho National Laboratory, SL-1 Reactor Report

1979 - Three Mile Island, PA

The Three Mile Island nuclear accident occurred on March 28, 1979, and was the most serious in U.S. commercial nuclear history. No deaths or injuries were directly attributed to the incident, but cleanup and remediation cost approximately \$2 billion in today's dollars. This cost was primarily borne by the plant's owner and by utility ratepayers.

On March 28, 1979, around 4:00 a.m., the Unit 2 reactor at the Three Mile Island Nuclear Generating Station near Harrisburg, suffered a partial meltdown. The accident began with a mechanical failure in the non-nuclear secondary system. A stuck relief valve in the primary coolant system followed, allowing coolant to escape, leading to a loss-of-coolant accident. Due to operator error and inadequate instrumentation, the crisis was not correctly diagnosed; the reactor core was left partially uncovered and damaged.

Though radioactive gases and iodine were released, and public anxiety and psychological stress were significant, the scientific consensus remains that no measurable health effects occurred among humans, animals, or plants due to the Three Mile Island accident. Some ongoing controversy over the accident's long-term radiological impact continues.

The cleanup and remediation of the damaged reactor began in August 1979 and officially concluded in December 1993. The total cost was approximately \$1 billion,¹² which is roughly \$2 billion in 2025 dollars. These costs were not absorbed entirely by the utility; instead, they were gradually passed on to customers through rate increases approved by the Pennsylvania Public Utility Commission (PUC).

Between 1980 and 1985, residential and commercial customers experienced rate hikes averaging 3-5% per year, depending on usage tier and service area. Over the full cleanup period, cumulative rate increases amounted to 15-25% above baseline projections,¹⁸ factoring in inflation and regulatory compliance costs. Metropolitan Edison (a subsidiary of GPU Nuclear) used rate-base adjustments, surcharges and deferred asset recovery to finance the cleanup. These mechanisms were approved by state regulators but faced public and legal scrutiny.

2002: Davis-Besse, Ohio

On March 5, 2002, during a scheduled refueling outage at the Davis-Besse Nuclear Power Station in Oak Harbor, OH, maintenance workers discovered a football-sized cavity in the reactor pressure vessel-head. Corrosion had eaten through more than six inches of high-carbon steel, leaving only a thin stainless-steel liner to contain the reactor's high-pressure

¹² U.S. NRC, Three Mile Island Accident Overview

¹⁸ Pennsylvania Public Utility Commission and Congressional Research Service

coolant.¹⁴ This liner was the final barrier preventing a loss-of-coolant accident, such as at Three Mile Island, which could have led to a core meltdown.

The corrosion was caused by boric acid deposits, which had accumulated over years due to leaking coolant. These deposits were not properly cleaned or inspected, despite prior warnings and industry awareness of boric acid-induced degradation. The incident was classified as one of the most serious safety lapses in U.S. nuclear history and was the subject of a special lessons-learned report published by the U.S. Nuclear Regulatory Commission.¹⁵

Total costs of repairs and remediation exceeded \$600 million, including replacement of the vessel head, extended shutdown, inspections and safety-culture reforms. FirstEnergy Nuclear Operating Co. initially absorbed the costs. However, much of the financial burden eventually was passed to ratepayers via state-approved recovery mechanisms, including deferred asset charges and rate base adjustments.

The plant stayed offline for over two years and was subject to enhanced NRC oversight until 2009. Davis-Besse was originally slated for closure in 2020 due to economic pressures from cheaper natural gas and renewables. However, Ohio House Bill 6, passed in 2019, provided \$150 million per year in subsidies to keep Davis-Besse and the Perry Nuclear Generating Station operational. These subsidies were funded through fees added to residents' utility bills.

Despite controversy surrounding the bill—including a federal bribery investigation regarding the circumstances surrounding the passage of House Bill 6—the plant has remained online and continues to supply baseload power to the region.¹⁶

Recently, however, on August 12, 2025, a leak was detected in the steam generator level transmitter sensing line—part of the emergency feedwater initiation system. The plant was shut down at 4:21 p.m. on August 12, 2025 to comply with specifications requiring accurate water-level measurement for safe operation.

During the restart process, operators discovered another failure in a source-range neutron flux channel, which is critical for monitoring reactor startup. This failure prevented the reactor from restarting under normal licensing conditions.

¹⁴ NRC Augmented Inspection Team Report—50-346/02-03 (May 3, 2002)

https://www.nrc.gov/reactors/operating/oversight/reports/davi_2002003.pdf

¹⁵ Argonne National Laboratory Technical Summary (RPV Head Degradation Overview)

<https://international.anl.gov/training/materials/A8/Moisevtseva/br0353r1.pdf>

¹⁶ Ohio Capital Journal, January 7, 2026, After Ohio's landmark decisions on HB 6 utility scandal, what's next? [After Ohio's landmark decisions on HB 6 utility scandal, what's next? Ohio Capital Journal](#)

On August 17, 2025, the U.S. Nuclear Regulatory Commission (NRC) issued Amendment No. 308 to Davis-Besse's operating license, allowing the use of alternate neutron instrumentation under emergency circumstances. This substitute enabled the plant to resume operation and remain online through the end of its current operating cycle in March 2026.¹⁷

Davis Besse is a perfect illustration of the unanticipated maintenance and safety issues that can arise at a nuclear generating facility and also for the unexpected exposure of taxpayers and utility ratepayer to pay for legislatively mandated subsidies to nuclear plant operators for cost overruns and ongoing additional costs.

2012 - San Onofre Nuclear Generating Station, California

The San Onofre Nuclear Generating Station, operated by majority stakeholder Southern California Edison, consisted of three nuclear generating units. Unit 1 was commissioned in 1968 and Units 2 and 3 were commissioned in 1983 and 1984, respectively. The entire facility was shut down permanently in June 2013, following the 2012 discovery of premature wear in steam generator tubes in Units 2 and 3 that risked catastrophic failure. Although no injuries occurred, the subsequent closure cost over \$4.7 billion, with the majority of the financial burden ultimately passed to California ratepayers.

On January 31, 2012, San Onofre Unit 3 was shut down after leaks were detected in newly installed steam generator tubes that had been manufactured by Mitsubishi Heavy Industries. Unit 2 was already offline for routine maintenance and further inspections revealed premature wear in thousands of tubes in both units.

The wear was traced to design flaws in the replacement steam generators, which caused excessive vibration and tube-to-tube contact. These deficiencies raised serious safety concerns, particularly the risk of a radiation leak if a tube ruptured during operation.

Though neither workers nor the public were harmed, initial costs of these accidents exceeded \$700 million. Legal settlements and regulatory penalties added hundreds of millions more. Ultimately in June 2013, SCE announced the plant's shutdown. It was decommissioned at an estimated cost of \$4.4 billion, including dismantling, waste disposal and site restoration. That process is expected to continue through the 2030s.

A settlement approved by the California Public Utilities Commission (CPUC) allowed SCE and its partner San Diego Gas & Electric (SDG&E) to recover \$3.3 billion of the costs

¹⁷ Davis Besse Nuclear Power Station, Unit No. 1 - Issuance of Amendment No. 308 re: Source range neutron flux channel inoperable (emergency circumstances)
<https://www.nrc.gov/docs/ML2522/ML25229A002.pdf>

from ratepayers.¹⁸ Residential and commercial customers paid billions in surcharges, although some refunds were later negotiated following public outcry and legal challenges. The closure of San Onofre left a significant gap in Southern California's power supply, prompting increased reliance on natural gas plants and accelerating investments in renewable energy and grid modernization. It also exposed utility ratepayers to cover an unexpected \$3.3 billion in excess surcharges and fees.

2014 - Maine Yankee Nuclear Power Plant, Wiscasset, Maine

The Maine Yankee Nuclear Power Plant was owned by Maine Yankee Atomic Power Company, a consortium of New England utilities. The plant began commercial operation in December 1972 with a 900 MW pressurized water reactor, and for much of its life it supplied roughly one-third of Maine's electricity.

The plant operated until its permanent shutdown in 1997, 15 years before intended, due to safety concerns and costly upgrades. No radiation-related injuries occurred, but closure required over \$500 million in decommissioning costs; rate hikes averaged 1%-2% annually over several years.

In 1996, the NRC identified safety and compliance issues, including concerns about emergency core cooling systems, containment integrity and aging infrastructure. Though no radiation leaks or explosions occurred, the NRC required extensive upgrades to meet evolving safety standards. The estimated cost of these upgrades exceeded \$300 million, prompting the owners to announce permanent closure on August 6, 1997.

- **Initial Construction Cost:** The plant was built for approximately \$231 million USD in early 1970s dollars, equivalent to over \$1.5 billion today. It was planned to be in service for an initial period of 40 years.
- **Decommissioning Costs:** The full decommissioning process, completed in 2005, about 15 years early, cost over \$500 million USD, including dismantling, site remediation and long-term waste storage.¹⁹
- **Ratepayer Impact:** According to the Nuclear Decommissioning Collaborative, Maine ratepayers experienced annual utility bill increases of 1%-2% over several years to cover decommissioning and stranded asset costs. These costs were approved by the Federal Energy Regulatory Commission (FERC) and the Maine Public Utilities Commission, and spread across multiple New England utilities.

¹⁸ California Public Utilities Commission Decision D.14-11-040

<https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M172/K781/172781805.PDF>

¹⁹ Nuclear Regulatory Commission Yankee Decommissioning Report, Revision 2, Dec. 12, 2013
<https://www.nrc.gov/docs/ML1335/ML13357A205.pdf>

- **Long-Term Storage:** As of 2025, 540 tons of spent nuclear fuel remain stored on-site in dry casks, costing about \$10 million per year to maintain, with no federal repository yet available.

Only three nuclear power plants have been commissioned in the U.S. since the premature shutdown of Maine Yankee in 1997

The closure of the Maine Yankee Nuclear Power Plant in 1997, 15 years ahead of its 40-year license, marked a turning point in U.S. nuclear development. Economic pressures, regulatory complexity and public opposition led to a long hiatus in new reactor construction. In spite of the early shutdown, utility ratepayers were forced to pay higher utility rates for a number of years to pay for problems at a generating facility that was inoperative.

After the Maine Yankee shutdown, only two nuclear generating facilities have been completed and brought online in the United States: Watts Bar Unit 2 (Tennessee) in 2016 and Vogtle (Georgia) Units 3 and 4 2023 and 2024. Several others were proposed but canceled or remain in planning.

Watts Bar Unit 2, Spring City, TN

The Watts Bar Unit 2 nuclear generator, operated by the Tennessee Valley Authority (TVA), was initially proposed in the 1970s to supplement the Watts Bar Unit 1 nuclear facility that was completed in 1996 and is still online. While construction was begun on Unit 2 in the 70s, construction was halted in 1985 when the unit was about 60 percent complete, because of declining electricity demand and regulatory challenges.

Construction resumed in 2007, and the plant was declared operational on Oct. 19, 2016 after extensive testing and regulatory approval. Unit 2 was the first nuclear generating facility to be commissioned in the 21st century in the U.S. However, construction lasted about 43 years, from start to commissioning, giving Watts Bar Unit 2 the dubious distinction of being the longest duration nuclear construction project in the U.S.

While nuclear-powered Unit 1 in the Watts Barr facility plant is functioning properly today, and is a significant baseload generating resource in the TVA system, Watts Bar Unit 2 had significant construction cost over-runs. When construction was restarted in 2007, TVA estimated it would cost \$2.5 billion to complete. However, once it was commissioned in 2016, that estimate had almost doubled to \$4.7 billion.²⁰

²⁰ TVA: <https://www.tva.com/newsroom/watts-bar-2-project/watts-bar-unit-2-timeline>

Yet, subsequent to commissioning, the plant sustained a number of maintenance problems and equipment failures that forced intermittent shutdowns and additional capital investments that brought the final cost to an estimated \$6.1 billion.²¹

It is difficult to calculate precisely the direct financial impact on TVA ratepayers of the Watts Bar Unit 2 cost overruns. TVA did not impose a direct rate increase tied solely to Watts Bar Unit 2. Instead, it absorbed the overruns through its broader capital budget and financing mechanisms, such as long-term debt financing and rate-smoothing strategies to spread the cost over time. While not directly itemized, the overruns contributed to capital cost burdens that influenced TVA's decisions on future rate adjustments and infrastructure investments.

The TVA Inspector General criticized project management failures and warned that cost overruns could undermine public trust and financial stability. Meanwhile, critics, including the Southern Alliance for Clean Energy, argued that the extra money spent on cost overruns could have been invested in energy efficiency or renewable technologies, which might have yielded lower long-term costs for ratepayers.²² In other words, TVA ratepayers have ended up paying more than they bargained for.

Vogtle Units 3 and 4 (Georgia)

Vogtle Units 3 and 4 were the last two nuclear power plants commissioned in the U.S and provide not only the most recent actual data on nuclear power plant cost and efficiency, but serve as a cautionary tale to any public service commission considering approval of a nuclear power generating facility.

Vogtle Units 3 and 4 were formally proposed in 2006 by Georgia Power, a subsidiary of Southern Co., as part of a push to revive nuclear energy. The plan called for the installation of two Westinghouse AP1000 pressurized water reactors, intended to deliver 2,200 MW of carbon-free electricity and serve as a model for next-generation nuclear development.

The proposal predicted the two nuclear power generators could be built for \$14 billion with a 7-year construction timeline.

In actuality, construction took 18 years at a cost of \$36.8 billion, resulting in a 25% rate increase for Georgia Power customers and long-term financial repercussions for ratepayers

²¹ Michael Hiitzink, LA Times: <https://www.latimes.com/business/hiltzik/la-fi-hiltzik-nuclear-shutdown-20170508-story.html>

²² WPLN News Report, April 25, 2012: <https://wpln.org/post/tva-board-watchdogs-to-weigh-in-on-watts-bar-cost-overruns/>

and energy policy in general. Construction officially began in 2009, with an initial budget of \$14 billion and a projected completion date of 2016—a 7-year timeline for both units.²³

Despite early optimism, the project faced extensive delays and cost escalations. The new AP1000 design required extensive regulatory review by the NRC. In 2017, the lead contractor, Westinghouse Electric Co., filed for bankruptcy, disrupting construction and forcing Georgia Power to assume direct oversight. Independent monitors documented inaccurate cost estimates, poor project controls and repeated schedule slippage.²⁴

The cost and schedule overruns led to a 24.7% rate hike—the highest in state history—imposed on Georgia Power’s customers in May 2024. Average residential bills rose by \$35/month—233% more than the utility’s original projection of \$15/month. Residential disconnections in 2024 rose 20% year-over-year; consumer complaints jumped tenfold.

Don Grace, PE, an electric utility design engineer with more than 50 years of experience in nuclear and fossil-fuel facilities, and who served as Vogtle plant-construction monitor from 2017 to 2024, wrote this summary of the Vogtle experience in the industry-respected *Power* magazine:

The necessary assumptions for reducing nuclear capital costs include multiple plant orders (to spread the common costs among multiple plants), a factory like production line building of common modules to better assure quality and reduce costs, and the availability of nuclear construction labor and expertise. These assumptions are not new, but in the past always changed. For example, in 1969, Westinghouse and Newport News Shipbuilding and Drydock Co. formed a joint venture to produce floating nuclear plants.

However, roughly 10 years later, with decreased future demand forecasts and after the Three Mile Island accident, that effort was terminated.

These same original assumptions were made at the start of Vogtle Units 3 and 4. This time, with reduced natural gas prices and decreased future demand forecasts, of the originally intended 14 AP1000 reactors, only Vogtle was pursued to completion. When the pipeline of nuclear reactor orders dried up, it resulted in cancellation of the modular facility and high costs drove the construction contractor, Westinghouse, into bankruptcy.

²³ Georgians for Affordable Energy. Plant Vogtle by the Numbers. November 2024. <https://georgiansforaffordableenergy.org/wp-content/uploads/2024/06/Truth-about-Vogtle-report.pdf>

²⁴ Third Act Georgia. The True Cost of Nuclear Power in the U.S., June 2024. <https://thirdact.org/georgia/2024/06/09/plant-vogtle-the-true-cost-of-nuclear-power-in-the-u-s/>

Those factors, coupled with limited nuclear construction labor and expertise, meant that Vogtle's construction costs exceeded even the worst projections. Also, even if one could better control the environment within which the plants are to be constructed, given the high cost of the inherent design, it is questionable as to what percentage cost reduction would be achievable and whether that would be sufficient to make nuclear cost competitive with other energy generation choices.²⁵

Since Vogtle Units 3 and 4, which created significant unanticipated and ongoing rate hikes for utility customers, is the most recently deployed nuclear power generating facility in the United States it's not unfair to assume that the next completed nuclear power facility may not exact a similar financial toll.

Ongoing and Recently-Failed Nuclear Power Generation Projects and Proposals in the U.S.

No traditional, utility-scale light-water reactors like the Vogtle or similar units are under construction in the U.S. currently. However, several advanced reactor and small modular reactor (SMR) projects are underway with government backing and private investment. Many are smaller, modular and designed to demonstrate next-generation technology.

The Failed Carbon Free Power Project (Utah and Idaho)

The Carbon Free Power Project (CFPP) was proposed in 2017 by NuScale Power, LLC, an SMR manufacturer, and Utah Associated Municipal Power Systems (UAMPS). The intent of CFPP was to deploy small modular reactors in Idaho to provide power for UAMPS and rural electric cooperatives in six western states.

However, the project was terminated in November 2023 due to escalating costs, declining participation and insufficient subscription commitments. While federal funding covered a portion of development costs, participating municipal utilities and their ratepayers bore financial burdens through early-stage investments and sunk costs.

Under the proposal, NuScale had planned to install twelve NuScale SMR modules, totaling 500 MW at the Idaho National Laboratory (INL). The SMRs were intended to provide carbon-free baseload electricity to UAMPS member utilities across six western states, replacing aging coal-fired plants and supporting climate goals. By 2021, the project was

²⁵ Power Magazine, April 1, 2025. <https://www.powermag.com/what-was-learned-from-building-new-nuclear-reactors/>

scaled down to six modules with a revised capacity of 462 MW, and a new target commissioning date of 2030.²⁶

Despite initial enthusiasm, CFPP faced mounting challenges. Between 2017 and 2023, projected costs rose sharply due to inflation, supply-chain pressures and design changes. In January 2023, NuScale increased its target power price from \$55/MWh to \$89/MWh, raising concerns among participating utilities. Facing untenable cost projections, several UAMPS members exercised contractual “off-ramps” to withdraw from the project. By late-2023, subscription levels fell below the threshold required for financial viability.²⁷

Critics cited the unproven nature of NuScale’s SMR technology and questioned its competitiveness against cheaper renewables and natural gas. Regulatory delays and permitting complexity further eroded confidence.²⁸ On November 8, 2023, NuScale and UAMPS jointly announced the termination of the CFPP, citing insufficient subscription commitments and escalating financial risks.

TerraPower’s Proposed Sodium Reactor Demonstration Project (WY)

This 345-MWe sodium-cooled fast reactor with integrated molten salt energy storage received state construction permits in January 2025. The project is backed by the U.S. Department of Energy (USDOE) and by private funds, aiming for operation by 2030. Site preparation began near a retiring coal plant in Kemmerer, WY, in June 2024 and was originally expected to be completed by 2028. Due to instability in the required nuclear fuel supply chain, completion estimates now have been pushed back to 2030.

With a total projected construction cost of \$4 billion, the plant is expected to have a simple levelized cost of energy (LCOE)²⁹ that is significantly higher than other sources of energy. However, since the project has received promises of up to \$2 billion in federal matching

²⁶ National Rural Electric Cooperative Association. NuScale and UAMPS End SMR Project CFPP. December 2023. <https://www.cooperative.com/programs-services/bts/Documents/Advisories/Advisory-NuScale-and-UAMPS-End-SMR-Project-CFPP-Dec-2023.pdf>

²⁷ Atomic Insights. Why Did the Carbon Free Power Project Get Cancelled? November 10, 2023. <https://atomicinsights.com/why-did-the-carbon-free-power-project-get-cancelled-what-does-that-mean-for-nuscale/>

²⁸ Desert News. Utah Just Lost an Important Future Energy Source. November 8, 2023: <https://www.deseret.com/utah/2023/11/8/23952844/advanced-nuclear-technology-nuscale-uamps-idaho-national-laboratory-coal-utah/>

²⁹ Per the [USDOE](#), computing the Levelized Cost of Energy is critical to making informed decisions regarding the development of a large-scale project. It measures a project’s lifetime costs divided by its energy output, calculates the present value of its total costs (capital, operation and maintenance) over an assumed lifetime—allowing comparison of options of unequal life spans, project size, capital cost, risk, return, and capacities.

funds, it is unclear what impact it will have on utility rates, even if it keeps to the current budget and projected construction schedule.⁸⁰

State regulatory approval in Wyoming. In January 2025, the Wyoming Industrial Siting Council granted the project a permit for the non-nuclear “energy island” of the plant, which includes the molten-salt energy storage system and turbines. This permit was a significant step, as it was the first such permit awarded in the U.S. for a commercial-scale, advanced nuclear project.

That said, no permit for the facility’s nuclear components has been approved. That authority rests with the NRC. TerraPower’s construction permit application for the reactor is currently under review by the NRC and developers hope to receive approval by December 2026.

Capital costs compared to other forms of generation. Assuming the reported \$4 billion construction cost and a capacity of 345 MW, the LCOE can be estimated by considering a number of factors:

The project’s proposed cost of \$4 billion divided by the plant’s 345 MW capacity, yields an overnight capital cost of \$11,594/kW—more than six times the LCOE of similarly-sized solar, wind, or natural-gas powered plants.⁸¹

Note: The developers’ assumption is that the plant will operate nearly continuously for 60 years. If true (and while holding other assumptions constant), its LCOE would be within the ranges of competing technologies. Since it is a first-of-a-kind demonstration facility still not permitted or constructed, it remains to be seen whether operational performance will match this assumption over the course of the next several decades.

Electric rate impact for residential customers. Since the Natrium project is a demonstration facility with large federal subsidies, it is not expected to have an immediate, significant impact on the utility rates for most residential customers in Wyoming. The project is primarily designed to demonstrate advanced nuclear technology rather than provide a large-scale power supply to the retail market.

⁸⁰ Wyoming Legislative Interim Committee Report (May 2025): <https://wyoleg.gov/InterimCommittee/2025/09-2025052110-09NatriumDemonstrationProject.pdf>

⁸¹ U.S. Energy Information Administration, <https://www.eia.gov/todayinenergy/detail.php?id=63485>

The Speculative Fermi America “Hypergrid” (TX)

Announced in July 2025, and with limited funding announced so far, this project is a massive clean-energy park planned near Amarillo. While ambitious, it is in its early stages and backed by recent Texas legislation. The plan includes four, large new-technology Westinghouse AP1000 Pressurized Water reactors and smaller SMRs, with 1-GW of nuclear capacity targeted for deployment to power data centers.

The Fermi America “Hypergrid” project has not been approved for construction. As of October 2025, the project is still in the early-stage planning and partnership phase, with no official regulatory docket or approval timeline publicly confirmed.

The Fermi’s project is designed as a “behind-the-meter” private grid for its own data center campus, which is envisioned to operate outside the traditional retail market. The developers, so far, have been unable to raise the massive amounts of capital necessary to fund the project.

The primary regulatory hurdle for the nuclear portion of the project is with the NRC. In September 2025, the NRC accepted for review a combined license application submitted by Fermi America for four Westinghouse AP1000 reactors. While a positive step, this acceptance only begins a multi-year review process and does not constitute final approval for construction. The company is in an NRC pilot program to develop an applicant-prepared environmental document, with site-specific information to be submitted throughout 2026.³²

Cost and funding. Though Fermi America has not disclosed a final cost estimate publicly, given the speculative nature of the full project, independent industry analysis suggests that costs could run into the tens of billions of dollars. Multiple sources and comparisons suggest the project will require that much money, based on the following assumptions:

- **Nuclear Component:** Four AP1000 reactors, each costing approximately \$7 billion-\$9 billion, totaling \$28 billion-36 billion.
- **Renewables and Storage:** Additional costs for solar, battery and gas infrastructure, estimated at \$2 billion-\$5 billion.
- **AI and Data Infrastructure:** Construction of 18 million square-feet of data-center space, likely exceeding \$5 billion.

³² American Nuclear Society (ANS). “Fermi America, Texas Tech Share Vision for Massive Power and Data Complex.” Nuclear Newswire, June 30, 2025: <https://www.ans.org/news/2025-06-30/article-7159/fermi-america-texas-tech-share-vision-for-massive-power-and-data-complex/>

Funding is not assured. Fermi America has raised some initial funding from private sources. In August 2025, the company announced it had secured \$350 million in financing, led by Macquarie Group, including a \$100 million Series C preferred equity-financing round and a \$250 million senior loan facility.³⁸ However, the company will need to raise significantly more financing to build the project. To date, no additional funding has been publicly disclosed.

Projects Seeking Nuclear Generating Construction Permits

Tennessee Valley Authority (TVA) (TN) SMR Project

In May 2025, TVA applied for a construction permit for an SMR at its Clinch River site in Oak Ridge, TN. It could be the first SMR built by a utility in the U.S., and would have a 300-MW generating capacity. It represents a significant step toward SMR deployment, though construction is not yet underway.³⁴ TVA hopes to bring the project online by late-2033.

Proposed construction cost and timeline. The project is currently in the permitting phase, with a construction permit application submitted to the NRC in May 2025. TVA hopes that NRC can approve the project by the end of 2026, however NRC has not yet begun the public hearing process.³⁵

Proposed cost. Proposed cost estimates for the first, 300-MW unit range from \$1.2 billion to \$5.4 billion. That 450% variation depends on whether you cite human- or AI-generated estimates:

The TVA 2025 Integrated Resource Plan (IRP) estimate of \$17,949 per kW works out to roughly \$5.4 billion before deducting tax credits or adding interest costs. Victor Hale—an AI-powered virtual energy analyst created by AI Invest, an artificial intelligence investing website—projects a cost between \$1.2 billion and \$1.5 billion.

To be clear, Victor Hale isn't a real person, but an AI-powered virtual construct.³⁶

³⁸ Data Center Dynamics, Sept. 1, 2025: <https://www.datacenterdynamics.com/en/news/macquarie-invests-in-fermi-america-to-support-development-of-1lgw-ai-campus-in-amarillo-texas/>

³⁴ TVA, partners re-apply for SMR grant funding, Power Engineering, April 24, 2025: <https://www.power-eng.com/nuclear/smrs/tva-partners-re-apply-for-smr-grant-funding/>

³⁵ US Nuclear Regulatory Commission: <https://www.nrc.gov/reactors/new-reactors/advanced/who-were-working-with/applicant-projects/clinch-river>

³⁶ AI Invest Biography of Victor Hale: <https://www.ainvest.com/news/author/victor-hale/>

So far, TVA has approved \$350 million for the project, primarily for design and development work, and is pursuing an \$800 million grant from USDOE to offset costs.³⁷

Cost recovery and rate increases. TVA is working to secure federal funding to avoid passing the full “first-of-a-kind” costs to customers. Unlike investor-owned utilities like Georgia Power, TVA is a federally owned entity. While TVA can issue debt and typically can recover costs through rates, the process for pre-operational cost recovery might differ from the NCCR model used by Georgia Power for Vogtle Units 3 and 4.

The TVA Act mandates “rates as low as achievable” and imposes a \$30 billion debt cap, which may lead TVA to consider non-traditional mechanisms to fund first-of-a-kind costs. TVA has not yet publicly proposed a specific rate increase directly linked to pre-operational construction costs for the Clinch River SMR.

However, TVA’s FY25 budget does include a rate increase to support sustained growth and the construction of nearly 3,500 MW of new generation capacity overall.³⁸

TVA’s CEO stated that the utility “will need access to capital beyond the current [\$30 billion] debt cap” if it proceeds with new nuclear plants.³⁹

Palisades Power Plant Restart Project (Michigan)

The Palisades nuclear power plant in Michigan, which was shut down in 2022, could become the first recommissioned unit in the U.S. if current plans by Holtec International come to fruition. The initial Palisades plant is located on the shore of Lake Michigan in Covert Township, MI. The plant started construction in 1967 with a pressurized water reactor and a turbine generator manufactured by Combustion Engineering.

Combustion Engineering, the manufacturer, no longer exists. Nuclear reactor operations at Palisades were absorbed by Westinghouse Electric, which maintains Combustion Engineering’s legacy reactors.

³⁷ World Nuclear News, Aug. 23, 2024: <https://www.world-nuclear-news.org/Articles/TVA-approves-further-funding-for-Clinch-River-SMR>

³⁸ American Council on Renewable Energy, Recommendations for Reducing Costs and Improving Reliability for Tennessee Valley Authority Customers: <https://acore.org/wp-content/uploads/2025/01/Recommendations-for-Reducing-Costs-and-Improving-Reliability-for-Tennessee-Valley-Authority-Customers.pdf>

³⁹ Knoxville News Sentinel Online, Jan. 17, 2025: <https://www.knoxnews.com/story/news/environment/2025/01/17/tva-led-team-applies-for-800m-federal-grant-new-small-modular-nuclear-reactors/77722143007/>

The plant first came online on New Year’s Eve, 1971. Over its 50-year history, the plant has had multiple owners and a documented history of mechanical and safety issues, some leading to temporary shutdowns.

In 2007, under owner Entergy, the plant was granted a 20-year license extension by the NRC. Entergy, which has since sold the plant, is a public-utility holding conglomerate that provides power to utilities in Arkansas, Mississippi, Texas and Louisiana.⁴⁰

2022 shutdown. In 2018, Entergy announced its intention to close Palisades, citing unfavorable economic conditions in the energy market. This conclusion was part of a larger strategy to exit the merchant nuclear generation business due to competition from cheap natural gas and subsidized renewable energy. The plant was originally scheduled to shut down on May 31, 2022, but was closed 11 days early on May 20 due to a faulty control-rod drive seal.

The facility was sold to Holtec with the intention of decommissioning it. However, weeks after purchasing the plant, Holtec reversed course and announced its intention to restart it. It would be a unique and challenging undertaking, as no U.S. nuclear plant has ever been restarted after shutting down permanently.⁴¹

Current Status. On August 25, 2025, the NRC approved Holtec’s request to transition Palisades from decommissioning back to operational status. Holtec aims to restart power generation in late-2025 or early-2026. However, there are pending tasks to be completed, including final inspections and reassembly of reactor components, fuel loading and NRC-reviewed start-up procedures and completion of FEMA/NRC-graded emergency exercises. As of January 8, 2026, NRC still had not granted operating approval for Palisades.

Cost of recommissioning. Holtec has secured over \$3.1 billion to advance the project, though final costs for a complete overhaul are not yet public. The cost includes funding for significant repairs and refurbishment. For example, inspections revealed the plant’s steam generator tubes required significant repairs, which Holtec has since completed using a sleeving process. Key parts of the investment are to transform the plant into a “like-new” facility, a goal of operating it until at least 2051—well beyond its original 2031 license—and potential plans to add new SMRs to the site.⁴²

While a final official cost for recommissioning Palisades has not been released, to date it has received the following \$3.1 billion in government funds and private investment:

⁴⁰ U.S. Nuclear Regulatory Commission: <https://www.nrc.gov/info-finder/reactors/pali>

⁴¹ Nuclear Engineering International, July 30, 2025; NRC paves way for Palisades restart: <https://www.neimagazine.com/news/nrc-clears-way-for-palisades-restart/?cf-view>

⁴² Nuclear Newswire, Jan. 7, 2025; Palisades Steam Generator Repairs on NRC Docket: <https://www.ans.org/news/2025-01-07/article-6659/palisades-steam-generator-repairs-on-nrc-docket/>

- USDOE Loan Guarantee: Up to \$1.52 billion. ⁴³
- USDA Grants: Over \$1.3 billion was awarded to the rural electric cooperatives purchasing power from Palisades, which helps to offset their costs. ⁴⁴
- State of Michigan Funding: \$300 million. ⁴⁵
- Holtec International’s Capital has committed its own funds to the project, with one estimate suggesting up to \$500 million. ⁴⁶

Impact on Michigan utility rates. The recommissioning of the Palisades plant is expected to have a limited, indirect impact on the retail rates of most Michigan utility customers, and a more direct, but mitigated, effect on the customers of specific electric cooperatives. The financial arrangements are designed to prevent the majority of the restart costs from being absorbed by general ratepayers. Those arrangements include:

Federal and state subsidies. Significant public funding is helping to absorb the high cost of the restart. The federal loan guarantee and Michigan’s direct grants are not being passed on to customers through rates.

Power purchase agreements (PPAs). The plant’s full output has been sold through long-term PPAs with two cooperatives—Wolverine Power Cooperative in Michigan and Hoosier Energy in Illinois and Indiana—meaning the power is not being sold on the open, spot market, which is the usual basis for most Michigan customers’ rates.

Federal Grants. Wolverine Power Cooperative received over \$650 million in USDA grant funding to offset the cost of purchasing power from Palisades for its rural Michigan members: This money will be passed directly to the co-op members, effectively shielding them from the full cost of the nuclear power. ⁴⁷

What will be the LCOE for the refurbished Palisades facility prove to be? When the Palisades Nuclear Power Plant comes back online, it is expected to produce

⁴³ U.S. Dept. of Energy: <https://www.energy.gov/lpo/holtec-palisades>

⁴⁴ Referenced in DOE and industry briefings; specific USDA disbursement details are not yet centralized in public databases.

⁴⁵ U.S. Dept. of Energy: <https://www.energy.gov/lpo/holtec-palisades>

⁴⁶ Power, Aug. 7, 2025; DOE Approves Fifth Loan Disbursement to Holtec for Historic Restart of Palisades Nuclear Plant: <https://www.powermag.com/doe-approves-fifth-loan-disbursement-to-holtec-for-historic-restart-of-palisades-nuclear-plant/>

⁴⁷ NRECA, 1 Oct. 2024; Wolverine, Hoosier Awarded \$1.3 Billion to Aid Nuclear Plant Restart: <https://www.electric.coop/wolverine-hoosier-awarded-1-3-billion-to-aid-nuclear-plant-restart>

800 megawatts of electricity, enough to power over 800,000 homes and businesses.⁴⁸ (The plant's previous net capacity was 805 MWe.) Calculating a precise LCOE for the Palisades restart is complex, as it requires a number of financial inputs that have not been fully disclosed, e.g., the total capital cost from all sources and future operating expenses.

Controversy over the restart. Some citizens groups object to the restart of the refurbished nuclear reactor at the Palisades facility. The nonprofit Beyond Nuclear objects to the facility being reopened, because of the way steam generators were overhauled. Beyond Nuclear argues that the steam generators should have been replaced before the unit was shut down. However, Holtec argues that argument is based on faulty assumptions about the way the plant operates.⁴⁹

⁴⁸ Utility Dive, July 25, 2025; NRC approvals move Palisades nuclear plant closer to restart: <https://www.utilitydive.com/news/nrc-approvals-move-palisades-nuclear-plant-closer-to-restart/754054/>

⁴⁹ Nuclear Newswire, Jan. 7, 2025; Palisades Steam Generator Repairs on NRC Docket: <https://www.ans.org/news/2025-01-07/article-6659/palisades-steam-generator-repairs-on-nrc-docket/>

CONCLUSIONS

This report lists a small, but representative, sampling of nuclear power facilities in the United States that have been decommissioned or forced to shutter, due to maintenance, safety or economic concerns.

There are many nuclear generating facilities in the U.S. today that continue to operate safely. While those plants continue to provide reliable power generation, roughly 40 to 60 percent of them have experienced operating or maintenance cost overruns relative to initial projections as a result of unscheduled, major component replacements, e.g., steam generators and reactor vessel heads.⁵⁰

Other plants have experienced intermittent shut-down for repairs or modifications resulting from regulatory mandates stemming from the 2011 Fukushima, Japan reactor meltdowns. These unscheduled modifications and repairs led to extensive outages and unanticipated increased costs for utilities and rate-payers.⁵¹

Counterintuitively, in spite of the experience and knowledge that have been gained from the multitude of plants that have been built, capital costs and regulatory expenses to build and operate nuclear generating facilities have not come down.

In fact, new, later-generation plants have been increasingly more expensive to build – not less expensive – than earlier-generation or first-of-a-kind nuclear plants.⁵²

Given the insurmountable history of cost overruns for nuclear power facilities in the United States, when considering nuclear generating facility proposals, the Kentucky PSC should be obligated to ascribe limited weight and credence to an applicant's financial projections concerning capital costs, maintenance costs, down-time, safety or LCOE unless based on data from U.S. facilities that are actual, proven and in-service.

The PSC should **not** give full weight to speculative projections or assumptions derived from laboratory demonstrations or extrapolation as it does to documented evidence collected

⁵⁰ U.S. Nuclear Regulatory Commission Technical Report ML12041A579, Energy Information Administration/ Electric Power Monthly August 1995;
<https://www.nrc.gov/docs/ML1204/ML12041A579.pdf>

⁵¹ EPA Life Extension Cost Methodology, 2018: https://www.epa.gov/sites/default/files/2019-03/documents/attachment_4-1_nuclear_power_plant_life_extension_cost_development_methodology_1.pdf

⁵² MIT, Sources of Cost Overrun in Nuclear Power Plant Construction; Nov. 2020;
<https://dspace.mit.edu/bitstream/handle/1721.1/133049/Jacopo%27s%20and%20Jessika%27s%20paper%20on%20nuclear%20cost%20Sep%202020.pdf?sequence=2&isAllowed=y>

from in-service nuclear facilities that have been operating under real-world conditions for a decade or longer.

Based on actual historical records of nuclear generating facilities in the U.S., there are real and present dangers that approval of any application for a nuclear generating facility without obtaining convincing, real-world, operating data is likely to create unacceptable risk and place a significant unwarranted financial burden on ratepayers, utilities and taxpayers alike.

This danger exists even if the proposed nuclear generating facility incorporates “improved technologies” or “safer designs.” Vogtle Units 3 and 4 in Georgia, which experienced enormous cost overruns during design and construction, are the most recent case in point. Until there is clear and compelling real-world evidence otherwise, the PSC should not entertain that outcomes would be different in Kentucky than in Georgia.

To paraphrase the testimony of Ms. Kenya Stump, Executive Director, Office of Energy Policy for the Ky. Energy and Environment Cabinet, to the PSC on August 4, 2025: There is no compelling reason for Kentucky to be first-in-line to implement new nuclear generating technology.⁵⁸

⁵⁸ Public comments on Aug. 4, 2025; Informal Conference, PSC Case No. 2025-00186