



Nuclear Energy Information Service

Illinois' Nuclear Power Watchdog since 1981

Office and Mail: 3411 W. Diversey Avenue, #13, Chicago, IL 60647-1245
(773)342-7650 www.neis.org neis@neis.org

TESTIMONY IN OPPOSITION TO SB0076

The Repeal of Illinois Nuclear Construction Moratorium

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By David A. Kraft, Director

Nuclear Energy Information Service (NEIS) is a 42-year old nuclear watchdog, safe-energy advocacy organization based in Chicago. On behalf of our over 800 members, we wish to register our opposition to SB0076, a bill to repeal the 1987 Illinois nuclear power construction moratorium, and to advocate for the development and construction of “small modular nuclear reactors” (SMNRs).

This moratorium was enacted to protect Illinois from becoming a *de facto* high-level radioactive waste dump. It simply says – no more reactors will be built here until the Federal Government honors its legal obligation to build and operate a permanent *disposal* ** facility for the dangerous spent-fuel radioactive waste reactors create. This facility was supposed to open by 1997, but didn't. Current government estimates claim we won't have one before 2048. To date Illinois 14 reactors (11 still operating) have created over 11,000 tons of spent-reactor fuel with no *disposal*** facility. The waste is presently *stored*** at reactor sites. Legislators in 1987 wanted to make sure that Illinois would have to manage as little of this waste as possible, prior to permanent *disposal***.

The good news is – ***it worked***. The Moratorium did and continues to do what it was designed to do: protect Illinois.

Regarding the moratorium repeal, SB0076 not only violates the “If it ain't broke, don't fix it” maxim; it goes out and actively BREAKS something that protects Illinois, and for goals that are illusory at best, nefarious at worst. Regarding the SMNR advocacy, it suggests an inadequately investigated and discussed option for Illinois' energy future that is strongly contested by competent energy officials and professionals worldwide, without thorough investigation of the downsides and negative effects, particularly on CEJA.

While this explains the origin of this common-sense moratorium, current events demonstrate what a Trojan Horse for potential nuclear disaster on numerous fronts SB0076 represents.

SB0076: A TROJAN HORSE FOR SMNRS

SMNRS are the proposed “next generation” of nuclear power reactors. Numerous designs have been proposed to date, but only one has been approved by the federal Nuclear Regulatory Commission (NRC). Their designs, sizes and purposes are wildly disparate; but conventional understanding puts all at less than ~300 mWe in size.

Taken in tandem with a similar proposed House bill, HB1079, it is a certainty that SB0076 is designed as a gateway to more nuclear plants in Illinois.

Before Illinois embraces the New Nuclear World Order it needs to examine SMNRS in far greater detail than has been done to date. Failure to do so would be to skirt the boundaries of government malfeasance.

- We must point out – *SMNRs DON'T EVEN EXIST YET*. They are nuclear powerPOINT reactors, existing only in concept form on paper/computer. The only currently approved NRC licensed design will have only one reactor operating (for demonstration purposes, NOT commercialization) by 2030 [1]. No company has actually physically demonstrated that their theoretical designs will actually work – although examples of over-promising and design failure [2] already abound.

So – *what's the rush?*

Repealing the Moratorium in the absence of any real operating versions of these hoped-for “someday” reactors would be like legalizing all opioids today based on Big Pharma’s promises that it will “someday” come up with a non-addictive form. This is unsound logic. More hard evidence is needed before removing an important State safeguard based solely on PowerPoint pledges and promises.

- More reactors of ANY kind mean MORE high-level radioactive waste with no place to go for *disposal*** – ***the very problem the moratorium was designed to address***. Worse, recent study indicates that SMNRs may end up producing MORE radioactive waste per unit of energy than today’s older reactor varieties. [3]
- The economics of SMNRs have been shown to be worse than viable, already available energy alternatives.[4] They are more costly per unit of energy than the current aging generation of reactors.[5]

Poor economics have led to a doubling of the projected cost of the NuScale SMNR demonstration reactor from \$55/mWh to ~\$100/mWh *before any construction has even begun*, and has led several of the partners in the Utah Associated Municipal Power Systems (UAMPS) SMNR project to abandon the project as projected costs have dramatically risen.[6]

Lazard, the Wall Street firm, estimated that the **levelized cost of electricity** (LCOE) from new nuclear plants will be between \$131 and \$204 per megawatt hour; and is certainly 2 to 3 times higher than renewable energy alternatives. [7]

Further, one needs to ask the obvious: if today’s reactors were not economically competitive in this energy market, and required \$3.05 billion in state funded bailout guarantees, won’t adding even MORE reactors competing for market share with both old reactors AND CEJA-mandated renewables expansion make both the old and new reactors more uncompetitive, requiring even **more ratepayer bailouts** in the future? This possibility needs much more thorough examination.

Additionally, **competition for grid access** – already an identified problem for renewables producers -- will worsen with the addition of SMNRs. [8,9] If any state money should be allocated anywhere, it should be to enhance and improve grid access and reliability, in tandem with energy storage. One can build a billion wind turbines or a billion SMNRs, but if they can’t get the power to the customer, the investment is useless. Transmission should become the new state priority, not SMNRs.

- It has been amply demonstrated by research and in statements from qualified national and international professionals in the field that SMNRs will have **NO meaningful positive effect on reducing the current Climate Code Red** situation. [10, 11, 12, 18] They cannot and will not be

built in time or in sufficient quantities to meet the 2030 climate deadlines the IPCC has set, let alone those beyond.

Worse, diverting billions of dollars to build a hypothetical pipe dream “sometime” in the future diverts funding we need **in the present** to fight climate disruption through actions we know work **in the present**: more renewables and efficiency, improved energy storage, and redesigned and upgraded transmission systems. [13, 14, 15]

SAFETY IMPLICATIONS: [7]

- Many of these theoretical new generation reactor designs are being proposed without the traditional or even any protective containment structures, and with proposals calling for reduced or even eliminated emergency safety planning zones. [16]

While many of the proposed designs call for below-grade placement, the depth of the crater holes in Ukraine [17] demonstrate clearly that this might not always be a safe enough design concept.

Some in industry have even suggested that these new designs be exempted from Price Anderson Act coverage against nuclear accident damages. [16]

ENVIRONMENTAL JUSTICE CONCERNS:

- A “next generation” of nuclear power plants automatically calls for a continuation of the nuclear fuel chain, the starting point of which is uranium mining. This invariably takes place on Indigenous lands domestically and internationally. It is opposed by the local Indigenous populations universally, due to the resulting contamination and failure of governments to conduct clean-up of past uranium mining.
- It should also be noted that the White House Environmental Justice Advisory Council (WHEJAC) has publicly stated that it does not support continued nuclear power, deeming nuclear power and waste as not benefitting local communities.[19]

JOBS AND FUTURE ECONOMIC OPPORTUNITY:

- More disturbing logic about SMNRs prevails on the issue of jobs and future economic development. As well-intended as the arguments might sound, they are problematic and fraught with uncertainty. The types and effects of jobs created must be evaluated and deemed worthwhile and cost-effective to society. Just because we create construction and guard jobs by building prisons does not argue for more crime.
- Compared to SMNRs, renewable energy and energy storage projects produce jobs, local tax base support, and cheaper climate-change-fighting clean energy **NOW**, or within 2 years of initial construction, not in the 2030s. [20]
- While SMNRs may or may not provide some jobs and economic development for host communities, we know for certain that with a finite energy pie, more SMNRs means fewer renewables and efficiency jobs, thus subverting the goals of FEJA and CEJA.
- The number of Illinois jobs already provided by renewable energy (22,999, end of 2021) and energy efficiency (82,592, end of 2021) far exceed the number of current nuclear power jobs (3,726 as of 2022). [21] Their numbers are reliably verified by history and current reality. No such

reliable figures exist for the non-existent SMNRs; it's all speculation. If the State is looking for investment opportunities, reality would be a logical place to look.

AN OFFER:

- Time restrictions do not permit us to go into the vastly greater amount of detail the Legislature needs to consider concerning SMNRs – a topic that requires a 30-40 minute PowerPoint to do it justice. We have previously invited legislators to [ZOOM sessions](#) (passcode w^NAk!P3) where we explored these issues in greater depth; and have formally requested an opportunity to present materials about SMNRs to the Legislative Green Caucus. We have not received a response to our offer.

In the meantime we welcome any opportunity to conduct one-on-one ZOOM briefings (or in district meetings, if near the Chicago area) with any legislator who would request one. Please contact us by e-mail if you are interested: neis@neis.org

CONCLUSION:

SB0076 is unacceptable public policy. It literally prematurely and unnecessarily dismantles a successfully protective statute of Illinois law. The recent Ohio vinyl chloride train derailment and the two Boeing 737MAX crashes demonstrate what happens when effective, demonstrably protective regulation is subverted, weakened and ignored. No matter how well intended, SB0076 demonstrates a lack of deep thinking, and amounts to poor and detrimental public policy.

For these reasons we urge the Committee to vote against SB0076, and channel public resources into effective and needed energy solutions: increased energy efficiency and renewables, energy storage, and an improved transmission grid.

Thank you for your consideration of these views.

NOTES AND SOURCES:

** “Disposal” and “Storage” are terms legally and precisely defined in the 1982 High-Level Radioactive Waste Policy Act. They are NOT interchangeable terms, and mean qualitatively different things. Great care and legal precision should be used when using either of these terms. “Disposal” is permanent, requiring deep-geological burial; “storage” is temporary, and is usually above ground/grade. The Illinois Moratorium requires a federal “disposal” solution, NOT “storage.”

[1] [NuScale makes public debut but requires ‘a lot of financing’ to launch small nuclear reactor in 2029](#); Published June 1, 2022 – UTILITY DIVE, By Elizabeth McCarthy

[2] [Nuclear Energy Startup Transatomic Backtracks on Key Promises](#), MIT Technology Review, Feb. 24, 2017.

[3] [Nuclear waste from small modular reactors](#), Lindsay M. Krall <https://orcid.org/0000-0002-6962-7608> Lindsay.M.Krall@gmail.com, Allison M. Macfarlane <https://orcid.org/0000-0002-8359-9324>, and Rodney C. Ewing <https://orcid.org/0000-0001-9472-4031> Authors Info & Affiliations; Edited by Eric J. Schelter, University of Pennsylvania, Philadelphia, PA; received June 26, 2021; accepted March 17, 2022 by Editorial Board Member Peter J. Rossky. May 31, 2022. <https://doi.org/10.1073/pnas.2111833119>.

- [4] [What's the cheapest source of electricity?](#), [Christian M.](#), Aqua Switch, 2022.
- [5] [Overnight Capital Cost of the Next AP1000](#), Koroush Shirvan, Center for Advanced Nuclear Energy Systems, MIT-ANP-TR-193. March 2022.
- [6] [The Promise of Low-Cost Power from UAMPS Small Modular Reactor is Fading Away](#), Institute for Energy Economics & Financial Analysis, by David Schlissel, November 17, 2022.
- [7] [The Hollow Promise of Small Modular Nuclear Reactors.](#) [M.V. RAMANA](#), Counterpunch, August 3, 2022.
- [8] [Accelerating renewable energy buildout faces big hurdles, even with Inflation Reduction Act: developers](#), Utility Dive, Sept. 6, 2022.
- [9] [PPA prices jump 9.6% in Q3 as growing demand hits supply chain, transmission roadblocks: LevelTen](#), Utility Dive, Oct. 18, 2022.
- [10] [Former Nuclear Regulatory Commission chair argues nuclear power isn't a climate solution](#), By [Justine Calma](#) / [@justcalma](#), The Verge, Jan 27, 2022.
- [11] [Nuclear Energy Will Not Be the Solution to Climate Change](#), Allison Macfarlane, Foreign Affairs, July 8, 2021.
- [12] [Former heads of US, German, French nuclear regulation and Secretary to UK government radiation protection committee: 'Nuclear is just not part of any feasible strategy that could counter climate change.'](#) Communiqué – Statement, Jan. 6, 2022.
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- [14] **US nuclear power: Status, prospects, and climate implications**, Amory B. Lovins, Stanford University, USA. Electricity Journal, <https://doi.org/10.1016/j.tej.2022.107122>, 2022.
- [15] [We don't need 'miracle' technologies to fix the climate. We have the tools now](#), Mark Z. Jacobson, Stanford University. *The Guardian*, Feb. 7, 2023.
- [16] ["Guinea Pig Nation: How the NRC's new licensing rules could turn communities into test beds for risky, experimental nuclear plants,"](#) powerpoint from Dr. Edwin Lyman, Union of Concerned Scientists, slides 6 and 10. NEIS Night with the Experts, Nov. 17, 2022.
- [17] [Photos of bomb craters in Ukraine](#)
- [18] [Nuclear energy too slow, too expensive to save climate: report](#), [Marton Dunai](#), [Geert De Clercq](#) - REUTERS 10-8-22. [The World Nuclear Industry Status Report 2022](#).
- [19] **White House Environmental Justice Advisory Council: Justice40 Climate and Economic Justice Screening Tool & Executive Order 12898 Revisions -- Interim Final Recommendations**, p. 58. May 13, 2021.
- [20] [Developer begins construction on 800 MW Illinois project with U.S. made components](#), PV Magazine, MARCH 29, 2023.
- [21] [A Return to Rapid Clean Energy Job Growth in Illinois](#), 2021.