

Opponent, Testimony HB 308 "To Include energy generated by nuclear reaction as green energy"

12/10/24 Senate Energy and Public Utilities Committee

Connie Kline, Ohio Nuclear-Free Network

"Today's problems come from yesterday's solutions." From MIT systems scientist Peter Senge's 1990 book The Fifth Discipline - a prescient warning for trying to solve climate change with nuclear power.

## Commercially-Generated Nuclear Power is NOT GREEN.

**LIAR LIAR PANTS ON FIRE** Please don't perpetuate more lies about nuclear power  
The nuclear industry falsely claimed ~~it is renewable~~.

### ● electricity too cheap to meter

[https://todayinsci.com/S/Strauss\\_Lewis/StraussLewis-Quotations.htm](https://todayinsci.com/S/Strauss_Lewis/StraussLewis-Quotations.htm)

"Abundant power from atom seen" 9/17/54

<https://www.nytimes.com/1954/09/17/archives/abundant-power-from-atom-seen-it-will-be-too-cheap-for-our-children.html>

### ● radioactive waste should be removed from reactor sites in five years

"NRC views long-term storage of wastes for more than five years as a significant safety and environmental matter..."

U.S. Nuclear Regulatory Commission, "Guide to the U.S. NRC's 10CFR61," Office of Nuclear Materials Safety and Safeguards, August 1989 p. 28 <https://www.nrc.gov/docs/ML1207/ML120720225.pdf>

### ● a serious accident chance of one in 100,000 to one in a 1,000,000,000...years

"Brookhaven Report WASH-740" p. viii <https://ia802301.us.archive.org/6/items/wash-740/WASH-740.pdf>

1982 "Calculation of Reactor Accident Consequences" <http://ccnr.org/crac.html>

"Projected Large Scale Radiological Release at U.S. Atomic Reactors"

<http://static1.1.sqspcdn.com/static/f/356082/10875171/1298351245463/CRAC+2+chart.pdf?token=PGuxgz5f4FZMvil8tC45ukdF8Ks%3D>

"The Case Against Nuclear Power" <https://cms.energypolicy.co.uk/243>

● Gregory Jazcko, former Nuclear Regulatory (NRC) Commissioner and Chairman from 2005 to 2012, is the latest among many nuclear regulators, engineers, physicists, physicians etc. to sound the alarm, writing, "I oversaw the U.S. nuclear power industry. Now I think it should be banned. The danger from climate change no longer outweighs the risks of nuclear accidents."

[https://www.washingtonpost.com/outlook/i-oversaw-the-us-nuclear-power-industry-now-i-think-it-should-be-banned/2019/05/16/a3b8be52-71db-11e9-9eb4-0828f5389013\\_story.html](https://www.washingtonpost.com/outlook/i-oversaw-the-us-nuclear-power-industry-now-i-think-it-should-be-banned/2019/05/16/a3b8be52-71db-11e9-9eb4-0828f5389013_story.html)

## NOT RENEWABLE

Uranium is, in fact, a finite, non-renewable resource. For example, according to the U.S. EPA, renewable energy is self-restoring. "Conventional power includes the combustion of fossil fuels (coal, natural gas, and oil) and the nuclear fission of uranium."

<https://www.epa.gov/green-power-markets/what-green-power>

## EXPENSIVE

● The Perry nuclear power plant, alone, cost \$6 billion and with Davis-Besse, the two Ohio reactors cost a whopping \$9 billion and billions more in maintenance, repairs, and subsidies.

"At a cost of six billion dollars, the Perry Nuclear Power Plant is one of the most expensive ever built."

<https://ema.ohio.gov/prepare-respond/emergency-preparedness/radiological-emergency/nuclear-power-plants/nuclear-power-plants>

<https://northperry.org/community/history/>

● Many analysts consider nuclear power the most heavily subsidized U.S. industry with estimates of hundreds of billions in handouts.

<https://www.iisd.org/gsi/commentary/gambling-nuclear-power-how-public-money-fuels-industry>

<https://content.time.com/time/health/article/0,8599,1812540,00.html>

<https://www.counterpunch.org/2016/01/01/nuclear-energy-dangerous-to-your-wallet-not-only-the-environment/>

<https://discover.hubpages.com/politics/The-Hidden-Costs-of-Nuclear-Energy>

<https://www.independent.org/news/article.asp?id=9082>

● The final astronomical cost of \$31 billion for the Westinghouse AP 1000 Vogtle reactors in Georgia, the first large reactors in decades, was the reason why the Summer plants in South Carolina were canceled in 2017.

<https://apnews.com/article/georgia-nuclear-power-plant-vogtle-rates-costs-c333da2957cce7a937008347f3487841>

<https://www.chooseenergy.com/news/article/failed-v-c-summer-nuclear-project-timeline/>

<https://spectrum.ieee.org/abandoned-nuclear-reactors-fit-a-global-pattern-of-new-build-tribbles>

<https://www.bizjournals.com/charlotte/news/2017/07/31/s-c-utility-votes-to-stop-building-16b-v-c-summer.html>

● Cost was a decisive factor in the 2023 cancellation of the Utah NuScale project, the only licensed so-called advanced small modular reactor (SMR).

<https://www.reuters.com/business/energy/nuscale-power-uamps-agree-terminate-nuclear-project-2023-11-08/>

● Billions of taxpayers dollars are subsidizing Bill Gates' Terra Power Natrium proposed "next generation" reactor.

<https://archive.thinkprogress.org/nuclear-power-is-so-uneconomical-even-bill-gates-cant-make-it-work-without-taxpayer-funding-faea0cdb60de/>

## NOT CARBON-FREE

● The nuclear power life cycle produces copious carbon and other greenhouse gases from uranium mining, milling, refining, conversion, and enrichment; fuel fabrication; transportation; reactor construction, maintenance, decommissioning; and radioactive waste management.

<https://theecologist.org/2015/feb/05/false-solution-nuclear-power-not-low-carbon>

[https://www.resilience.org/wp-content/uploads/2006/05/does\\_nuclear\\_energy\\_produce\\_no\\_co2.pdf](https://www.resilience.org/wp-content/uploads/2006/05/does_nuclear_energy_produce_no_co2.pdf)

<https://www.resilience.org/stories/2006-05-11/does-nuclear-power-produce-no-co2/>

● Dr. Benjamin Sovacool, Ph.D, Professor of Energy Policy at the University of Sussex, and others conclude that the nuclear fuel chain emits more greenhouse gases per kilowatt hour than all renewables including biomass, hydroelectric, solar, and wind. "Life-cycle carbon emissions from nuclear are twice as much as solar photovoltaic and six times more than wind or energy efficiency."

[https://www.nirs.org/wp-content/uploads/climate/background/sovacool\\_nuclear\\_ghg.pdf](https://www.nirs.org/wp-content/uploads/climate/background/sovacool_nuclear_ghg.pdf)

[https://scholarship.law.wm.edu/cgi/viewcontent.cgi?referer=https://r.search.aol.com/\\_ylt=AwrE19xGWdFc9.wAxQFpCWVH;\\_ylu=X3oDMTBzdWd2cWI5BGNvbG8DYmYxBHBvcwMxMAR2dGikAwRzZWMDc3I-/RV=2/RE=1557252550/RO=10/RU=http%3a%2f%2fscholarship.law.wm.edu%2f%2fcgi%2fviewcontent.cgi%3farticle%3d1040%26context%3dwmelpr/RK=0/R=3uQZ1j1hr1PnlWO4RURAX0cmSbU-&httpsredir=1&article=1040&context=wmelpr](https://scholarship.law.wm.edu/cgi/viewcontent.cgi?referer=https://r.search.aol.com/_ylt=AwrE19xGWdFc9.wAxQFpCWVH;_ylu=X3oDMTBzdWd2cWI5BGNvbG8DYmYxBHBvcwMxMAR2dGikAwRzZWMDc3I-/RV=2/RE=1557252550/RO=10/RU=http%3a%2f%2fscholarship.law.wm.edu%2f%2fcgi%2fviewcontent.cgi%3farticle%3d1040%26context%3dwmelpr/RK=0/R=3uQZ1j1hr1PnlWO4RURAX0cmSbU-&httpsredir=1&article=1040&context=wmelpr)

● While nuclear generated electricity is lower in carbon emissions than fossil fuels, it has never been carbon-free or "zero emissions." Reactors emit methane, a greenhouse gas, and radioactive carbon-14, with a 5700 year half-life meaning it's hazardous life is 57,000 to 114,000 years.. The human body and the environment cannot distinguish highly volatile, biologically damaging, radioactive carbon-14 from non-radioactive carbon.

■ "The radionuclide C-14 is and will be formed in all nuclear reactors due to the absorption of neutrons by carbon, nitrogen or oxygen."

C-14 Production in Nuclear Reactors (1977) prepared for the NRC by Wallace Davis, Jr. of the Oakridge National Laboratory, p.2 <https://www.nrc.gov/docs/ML0934/ML093421400.pdf>

■ "With its long half-life and high mobility in the environment, <sup>14</sup>C is a radionuclide of considerable interest in nuclear power production...in Pressured Water Reactors-PWRs, and Boiling Water Reactors-BWRs)...Carbon-14 is present in virtually all parts of the nuclear reactor primary system and has a high production rate. It is released to the environment through gaseous and liquid discharges and through the disposal of solid radioactive waste...(T)he life cycle of <sup>14</sup>C, start(s) from its production in reactors, to its transport and its potential incorporation in natural cycles."

Life cycle and management of C-14 from nuclear power generation (2006) Man-Sung Yim, Francis Caron (2005)

<https://www.sciencedirect.com/science/article/abs/pii/S0149197005000454>

■ "The characteristics of C-14 that distinguish it from many other radionuclides produced by nuclear power operation, are the long half-life of 5,730 years (amount of time it takes for a radioactive isotope to lose half of its radioactivity) and the ease of assimilation into living matter...An excess of C-14 (above background levels) in environmental samples...may be found in the close vicinities of nuclear

power plants due to the release of gaseous waste containing C-14."

C-14 Production by Nuclear Power Reactors - Generation and Characteristics of Gaseous, Liquid, Solid Waste (2007) Asa Magnusson, Introduction p. 1

[https://www.kth.se/polopoly\\_fs/1.469654.1550154389!/C-14%20Produced%20by%20Nuclear%20Power%20Reactors%20%E2%80%93%20Generation%20and%20Characterization%20of%20Gaseous.pdf](https://www.kth.se/polopoly_fs/1.469654.1550154389!/C-14%20Produced%20by%20Nuclear%20Power%20Reactors%20%E2%80%93%20Generation%20and%20Characterization%20of%20Gaseous.pdf)

#### UNSAFE

● World renowned nuclear engineer Dr. Arjan Makhijani, Ph.D, author of the ground-breaking book Carbon-Free and Nuclear Free: A Roadmap for U.S. Energy Policy, has said, "Carbon is not the only, or necessarily the most dangerous, element on the periodic table. Many radioactive elements are." <https://ieer.org/assets/downloads/carbonfree/CFNF.pdf>

● Nuclear plants leak and routinely release into air, soil, and water carcinogenic, teratogenic, and mutagenic radionuclides which are chemically indistinguishable from non-radioactive, life-sustaining elements.

"Leak First, Fix Later"

[https://static1.1.sqspcdn.com/static/f/356082/6590573/1271634765367/LeakFirst\\_FixLater\\_BeyondNuclear\\_April182010\\_FINAL.pdf](https://static1.1.sqspcdn.com/static/f/356082/6590573/1271634765367/LeakFirst_FixLater_BeyondNuclear_April182010_FINAL.pdf)

"Nuclear plants leak radiation and regulator faces scrutiny"

<https://www.usnews.com/news/articles/2016-03-15/nuclear-plants-leak-radiation-and-regulator-faces-scrutiny>

● Tritium, which is radioactive hydrogen, with a hazardous life of 120-240 years, leaks from nearly all reactors and cannot be removed from the water molecule.

● Tritium can have significant biological and health consequences. "It readily cross the placental barrier, can damage DNA, impair physiology and development, and lead to elevated risk of diseases, including cancer."

Exploring Tritium Dangers, Dr. Arjun Makhijani, Ph.D.

<https://ieer.org/wp/wp-content/uploads/2023/02/Exploring-Tritium-Dangers.pdf>

"Tritium leaks found at many nuke sites"

<https://www.ap.org/press-releases/2012/part-ii-ap-impact-tritium-leaks-found-at-many-uke-sites>

"Radioactive tritium found at 48 nuke sites"

[https://www.nbcnews.com/id/wbna43475479#.XOOzmZI\\_PDB](https://www.nbcnews.com/id/wbna43475479#.XOOzmZI_PDB)

● Perry has had a number of tritium leaks in the past decade as well as a recent determination that "Since January 2024, approximately 78.5 gallons of contaminated water had spilled to the ground.(containing) cobalt-60 and manganese-54..."

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML24332A080>

■ 1/20/2014 - 46,2000 pCi/L into groundwater due to a feedwater leak

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML14063A063>

■ July 2015 - 15,900 pCi/L

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML15223A440>

■ 1/31/20 through March 2021 tritium and cobalt-60.leaks in the reactor cooling system.

<https://www.nrc.gov/docs/ML2111/ML21119A030.pdf> (p. 115-117)

■ December 16 -17, 2021 to January 2022...tritium ranging from 10,100 to 14, 800 pCi/L

<https://www.nrc.gov/docs/ML2311/ML23117A196.pdf> (pp. 32-33)

■ 6/22/23 - 40,000 pCi/L. As of October 2023, the source of this significant tritium leak was unresolved.

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML23200A079>

■ 1/5/24 - 291,000 pCi/L, nearly 3 curies which is a large amount of radiation

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML24024A186>

● Nuclear power plants were not intended to operate past their initial 40 year license period. FirstEnergy applied for and was routinely granted inspection, maintenance, repair and upgrade waivers, deferrals, and exemptions. The deteriorating 40 year old Perry reactor's license extension to operate until 2046 is being challenged on the basis of leaks and site unsuitability including earthquakes, erosion, landslides.

● In its Perry License Renewal Application, Energy Harbor acknowledges problems with aging structures, components, parts, etc. and concedes (pp. 2020-2021) that:

“The issue [of inadvertent radionuclide release] is relevant to license renewal because all commercial nuclear power plants routinely release radioactive gaseous and liquid materials into the environment. These radioactive releases are designed to be planned, monitored, documented, and released into the environment at designated discharge points. But over the years, there have been numerous events at nuclear power reactor sites that involved unknown, uncontrolled, and unmonitored releases of liquids containing radioactive material into the groundwater. The majority of the inadvertent liquid release events involved tritium, which is a radioactive isotope of hydrogen. However, other radioactive isotopes, such as cesium and strontium, have also been inadvertently released into groundwater. The types of events include leakage from spent fuel pools, buried piping, and failed pressure relief valves on an effluent discharge line.”

Perry License Renewal Application (LRA) (July 2023)

<https://adamswebsearch2.nrc.gov/webSearch2/main.jsp?AccessionNumber=ML23184A081>

● The scientific and medical communities, including but not limited to, the U.S. National Academy of Sciences (NAS) and the European Committee on Radiation Risk have determined that there is no safe dose or threshold of radiation exposure.

National Academies of Science Health Effects of Low-Level Exposure to Ionizing Radiation (BEIR VII)

[https://nap.nationalacademies.org/resource/11340/beir\\_vii\\_final.pdf](https://nap.nationalacademies.org/resource/11340/beir_vii_final.pdf)

[https://www.ncbi.nlm.nih.gov/books/NBK230461/pdf/Bookshelf\\_NBK230461.pdf](https://www.ncbi.nlm.nih.gov/books/NBK230461/pdf/Bookshelf_NBK230461.pdf)

Recommendations of the European Committee of Radiation Risk

[http://www.inaco.co.jp/isaac/shiryu/pdf/ECRR\\_2010\\_recommendations\\_of\\_the\\_european\\_committee\\_on\\_radiation\\_risk.pdf](http://www.inaco.co.jp/isaac/shiryu/pdf/ECRR_2010_recommendations_of_the_european_committee_on_radiation_risk.pdf)

University of South Carolina (2012, November 13). “Even low-level radioactivity is damaging, scientists conclude.” Science Daily. <https://www.sciencedaily.com/releases/2012/11/121113134224.htm>

- Ingested or inhaled radioactive strontium-90 and cesium-137 replace calcium and potassium respectively, irradiating bones and muscles for decades.
- Carcinogenic, radioactive iodine-131 is absorbed by the thyroid gland which is the reason why potassium iodide is provided to residents near reactors.
- Cobalt-60 is a liver, kidney, and bone carcinogen.
- Specks of inhaled plutonium-239, with a half-life of 24,000 years, can cause lung cancer.
- As noted above, Energy Harbor admits that miles of buried, inaccessible, aging, deteriorating pipes have leaked tritium and other radionuclides at the Perry reactor.

Strontium 90 [https://radioactivity.eu.com/phenomenon/strontium\\_90](https://radioactivity.eu.com/phenomenon/strontium_90)

Cesium-137 [https://radioactivity.eu.com/articles/phenomenon/caesium\\_137](https://radioactivity.eu.com/articles/phenomenon/caesium_137)

Iodine 131 [https://radioactivity.eu.com/phenomenon/iodine\\_131](https://radioactivity.eu.com/phenomenon/iodine_131)

Cobalt 60

[https://www.cdc.gov/radiation-emergencies/hcp/isotopes/cobalt-60.html?CDC\\_AAref\\_Val=https://www.cdc.gov/nceh/radiation/emergencies/isotopes/cobalt.htm](https://www.cdc.gov/radiation-emergencies/hcp/isotopes/cobalt-60.html?CDC_AAref_Val=https://www.cdc.gov/nceh/radiation/emergencies/isotopes/cobalt.htm)

Plutonium-239 [https://radioactivity.eu.com/articles/phenomenon/plutonium\\_239](https://radioactivity.eu.com/articles/phenomenon/plutonium_239)

“Questions and answers about potassium iodide American Thyroid Assn.

<https://www.thyroid.org/questions-and-answers-about-potassium-iodide-ki-american-thyroid-association/>

“Types of Ionizing Radiation Including Plutonium 239”

<https://nuclear-news.net/2014/05/02/dr-helen-caldicott-explains-the-facts-on-radiation/>

**THREE DISASTERS IN 34 YEARS** - occurred at Three Mile Island (1979), Chernobyl (1986), and Fukushima (2011), and at many other reactors worldwide since the 1950s. The U.S. has 23 Fukushima-type GE Mark I reactors at 16 sites. The NRC and other researchers postulate a 50% chance of another catastrophic accident in approximately the next 20 years.

"Root Causes and Impacts of Severe Accidents at Large Nuclear Power Plants"

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3606704/>

"Nuclear Meltdowns and Disasters"

<https://www.cnn.com/2011/03/16/11-Nuclear-Meltdowns-and-Disasters.html>

"Nuclear Disasters"

<https://www.processindustryforum.com/hot-topics/nucleardisasters>

Fukushima GE Mark I reactors used in U.S. and long criticized

<https://www.nytimes.com/2011/03/16/world/asia/16contain.html>

"U.S. nuclear agency hid concerns, hailed safety record as Fukushima melted"

<https://www.nbcnews.com/storyline/fukushima-anniversary/u-s-nuclear-agency-hid-concerns-hailed-safety-record-fukushima-n48561>

"Five years after Fukushima, U.S. safety upgrades lagging"

[https://www.huffpost.com/entry/five-years-after-fukushim\\_b\\_9402962](https://www.huffpost.com/entry/five-years-after-fukushim_b_9402962)

"50% chance of another Chernobyl by 2030"

<https://www.technologyreview.com/s/536886/the-chances-of-another-chernobyl-before-2050-50-say-safety-specialists/>

● To limit owner/operator liability, Congress passed the 1957 Price Anderson Act which currently caps accident compensation at \$12.6 billion; however, a 1982 NRC-commissioned study conducted by U.S. Sandia National Labs calculated a severe accident could result in 50,000 fatalities, contaminate an area the size of Pennsylvania, and cause \$314 billion in property damage which is \$720 billion today's dollars. All private insurers exclude reactor accidents, and according to the NRC, state governments will cover "injury, sickness, disease, death, property damage, loss and living expenses for evacuees." "Nuclear industry shielded from big accident costs"

[https://money.cnn.com/2011/03/25/news/economy/nuclear\\_accident\\_costs/index.htm](https://money.cnn.com/2011/03/25/news/economy/nuclear_accident_costs/index.htm)

See also "Accident" citations under "Liar, Liar" above

#### UNSOLVABLE WASTE

● "A thousand-megawatt reactor contains as much long-lived radiation as...1,000 Hiroshima-sized bombs" from which humans and the environment must be protected forever, but the NRC admits that "no engineered structure can last the time required to isolate these wastes and that leakage will occur."

Dr. Helen Caldicott, M.D. "Nuclear Madness Still Relevant"

<https://www.helencaldicott.com/is-helen-caldicotts-nuclear-madness-still-relevant/>

Dr. Helen Caldicott "Arguing Against Nuclear Energy"

<https://www.helencaldicott.com/arguing-against-nuclear-energy-dr-helen-caldicott/>

● Early warnings by nuclear insiders to resolve radioactive waste before licensing new reactors were ignored. There are 90,000 tons of irradiated fuel "temporarily" stored in problem-plagued spent fuel pools and dry casks at 75 environmentally unsuitable reactor sites in 33 states because no permanent repository exists.

Government Accountability Office "Congressional action needed for spent nuclear fuel"

<https://www.gao.gov/products/gao-21-603>

● "There is no way to guarantee that any disposal facility, for any waste, will not release some amount of radioactivity...No structure or site can be guaranteed to contain radioactive waste in perpetuity. Given the fact that facilities deteriorate and human institutions may not maintain complete control, NRC chose to rely on the more realistic requirements of 100 years of institutional care..."

p. 28 <https://www.nrc.gov/docs/ML1207/ML120720225.pdf>

● Reprocessing, euphemistically called "recycling" of used fuel is no solution because it:

■ is a nuclear weapons proliferation risk and extremely expensive

Congressional Research Service "Nuclear Fuel Reprocessing U.S. Policy Development" 3/27/08

<https://crsreports.congress.gov/product/pdf/RS/RS22542>

"Federal Register Notice 7/29/21 NRC Discontinuing Rulemaking Activity on Nuclear Spent Fuel Reprocessing Sought by Nuclear Industry"

<https://www.federalregister.gov/documents/2021/07/29/2021-16173/spent-fuel-reprocessing>

"Nuclear Reprocessing: Dangerous, Dirty, and Expensive"

<https://www.ucsusa.org/resources/nuclear-reprocessing-dangerous-dirty-and-expensive>

■ does NOT reduce the volume of radioactive waste

"Reprocessing increases total volume of nuclear waste"

<https://www.ucsusa.org/resources/reprocessing-nuclear-waste>

"Reprocessing - The Dirty End of the Nuclear Fuel Chain"

<https://beyondnuclear.org/reprocessing-the-dirty-end-of-the-nuclear-fuel-chain/>

"Nuclear Fuel Reprocessing Pamphlet"

<http://static1.1.sqspcdn.com/static/f/356082/6963800/1274119098123/ReprocessingIgl.pdf?token=jkC3WA7HX4lwnoaVdQle2QNaIwc%3D>

■ failed at West Valley, NY where a reprocessing plant only operated for six years from 1966-1972 due to fires, high worker radiation exposure, and radioactive releases. Remediation will take decades and billions additional dollars.

Government Accountability Office - "Congressional Action Needed to Clarify a Disposal Option at West Valley Site in New York", January 2021

<https://www.gao.gov/assets/gao-21-115.pdf>

"History of West Valley"

<https://www.nirs.org/wp-content/uploads/radwaste/decommissioning/wvfcfs2.pdf>

"The Real Cost of Cleaning Up Nuclear Waste, West Valley Nuclear Site" Marvin Resnikoff, Ph.D.

[https://www.nirs.org/wp-content/uploads/radwaste/decommissioning/wvstudy\\_appb.pdf](https://www.nirs.org/wp-content/uploads/radwaste/decommissioning/wvstudy_appb.pdf)

"West Valley Nuclear Waste Facility Still Years Away From Full Decommissioning"

<https://www.wxxinews.org/post/west-valley-nuclear-waste-facility-still-years-away-full-decommissioning-video>

<https://www.wxxinews.org/local-news/2014-04-11/west-valley-nuclear-waste-facility-still-years-away-from-full-decommissioning-video>

"Brief History of Reprocessing and Clean Up in West Valley, NY"

<https://www.ucsusa.org/resources/brief-history-reprocessing-and-cleanup-west-valley-ny>

■ has been a disaster world-wide at Sellafield, England; Rokkasho, Japan; La Hague, France, Kyshtym, Russia

"International Experience With Reprocessing and Related Technologies" Dr. Arjun Makhijani, Ph.D.

<https://ieer.org/wp/wp-content/uploads/2006/01/repro-intl.pdf>

● Sellafield (formerly Windscale) in England

"Sellafield exposed: the nonsense of nuclear fuel reprocessing"

<https://theecologist.org/2016/sep/06/sellafield-exposed-nonsense-nuclear-fuel-reprocessing>

"Windscale Fire"

<https://www.history.co.uk/articles/windscale-fire-nuclear-disaster>

● La Hague, France

"La Hague: France's Nuclear Waste Nightmare and Extreme Greenwashing"

<https://themillenniumreport.com/2017/02/la-hague-frances-nuclear-waste-nightmare-and-extreme-greenwashing/>

"Nuclear Power in France setting the record straight"

[http://static1.1.sqspcdn.com/static/f/356082/9183072/1288372992903/France\\_Pamphlet\\_Summer2010.pdf?token=i8jeJzbBuIWEii%2FosReMljlohEo%3DKyshtym](http://static1.1.sqspcdn.com/static/f/356082/9183072/1288372992903/France_Pamphlet_Summer2010.pdf?token=i8jeJzbBuIWEii%2FosReMljlohEo%3DKyshtym)

"La Hague France Nuclear Facility"

<https://www.nuclear-risks.org/en/hibakusha-worldwide/la-hague.html>

"Toxic Effects of Reprocessing at Sellafield and La Hague"

[https://www.europarl.europa.eu/RegData/etudes/etudes/join/2001/303110/DG-4-JOIN\\_ET%282001%29303110\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/etudes/join/2001/303110/DG-4-JOIN_ET%282001%29303110_EN.pdf)

● Rokkasho, Japan

"Rokkasho plant too dangerous, costly"

<http://large.styford.edu/pub/users/rjlawler/rokkasho.html>

"International scientists call for an end to Rokkasho plant"

<https://nautilus.org/napsnet/napsnet-special-reports/plutonium-and-japans-nuclear-waste-problem-international-scientists-call-for-an-end-to-plutonium-reprocessing-and-closing-the-rokkasho-plant/>

● Kyshtym, Russia

"The Day Russia Nuked Itself: The Kyshtym Disaster"

<https://dyatlovpass.com/kyshtym-disaster>

"Kyshtym Disaster"

[https://www.nuclear-heritage.net/index.php/Kyshtym\\_Disaster](https://www.nuclear-heritage.net/index.php/Kyshtym_Disaster)