

Nuclear Power: Fact vs. Fiction

Recent presentations have put forth misinformation regarding the possibility of restarting Indian Point. Monumental costs for nuclear energy that is unnecessary and won't be ready for a decade or more, will spend resources which are urgently needed to implement safe and reliable renewable energy with storage and efficiency. Other risks include serious dangers, radioactive exposure to the host community and highly radioactive waste which will be stored on site indefinitely.

- How much would rebuilding cost?
- How much would local tax and utility payments rise?
- When would the project be operational?
- Are the Holtec canisters safe, inspectable, and repairable?
- When would they need to be replaced? How would this be accomplished?

COST: Nuclear energy is the most expensive form of energy. Since 2021 Holtec has been paid handsomely to decommission Indian Point. If either of their recent proposals – to rebuild or build new reactors on site – were to move forward, they would be paid first to deconstruct Indian Point and then be paid again to reconstruct or to install so-called “Small Modular Reactors” (SMRs). SMR is a catch-all term for a wide range of technologies, none of which are safer or faster to implement than renewables. This would be a gross misuse of public and ratepayer funds. In addition, rate-payers have paid (and are still paying) \$7.6 billion to subsidize three aging nuclear plants in Western NY – and Governor Hochul proposes an additional \$33 billion to keep them operating for another 20 years, causing our energy bills to explode. For more information, please see: [The Next Nuclear Renaissance? Cato Institute](#)

GRID CAPACITY, NEED AND RELIABILITY: Given the increasing transition to beneficial electrification of buildings and transportation, increasing need for data processing and storage and other energy usage, there will be increased demand, and the grid will need to be upgraded, especially with regard to transmission – regardless of the source of generation. Claims comparing the reliability of fossil fuel, nuclear and renewables have also been misrepresented, including threats of rolling blackouts and other insufficiency. Fossil fuel needs to be phased out to reduce greenhouse gas emissions, which cause and increasingly worsen the global climate crisis. Renewables – including solar, wind, hydroelectric and geothermal – with safely sited and managed battery or other storage systems – provide excellent reliability. In Texas they have implemented renewables extensively and use battery storage to balance loads and reduce transmission costs.

Indian Point was closed primarily because of its history of problems, including hundreds of degraded baffle bolts discovered on the floor or loosely in place throughout the reactor, siren failures, fire safety violations and failure to comply with New York's Coastal Management Plan requirements – among other things. And it was too costly to maintain and operate. Nuclear plants have had to close during periods of extreme heat or drought. They are also subject to emergency shutdowns or blockage of airflow needed to cool the highly radioactive fuel rods stored in canisters on site – due to a combination of sea level rise and storm surges. During Hurricane Sandy in 2012, there was an 11-foot storm surge. Clearwater and Riverkeeper called the NRC to urge a planned shutdown, but NRC refused to take action until the storm surge

reached 15-feet. Then Indian Point experienced an emergency shutdown – a SCRAM – when New York City lost one third of its power. SMRs and ANRs are no more reliable and will not reduce the need for transmission and other grid upgrades. If ever there should be a problem with renewables, it would be far less dangerous than what a nuclear accident would cause. Remember Three Mile Island, Chernobyl and Fukushima, which are still posing dangers locally and globally.

Nuclear Power and Fossil Fuel, both old and new, are unnecessary in New York State. In the paper, [Examining the feasibility of converting New York State's all-purpose energy infrastructure to one using wind, water, and sunlight - ScienceDirect](#) Mark Z. Jacobson et. al. stress that processing nuclear fuel emits greenhouse gasses and particulate matter in every one of its 13 (Uranium mining to Spent Fuel Waste storage) stages. Focusing on reduced emissions at the power plant intentionally ignores those 11 other processes, whose emissions exacerbate climate disruption. But nuclear power is unnecessary and can be replaced with more than 30 devices. Eleven Carbon-reducing, life-enhancing criteria were used to select these technologies. In short, neither fossil fuel, nor nuclear power will be necessary in the future and both should be abandoned as soon as possible to save our lives everyday and the future of the earth's ecology system.

In addition, nuclear reactors not only depend on fossil fuel for many of their on-site functions but they release radiation, which can cause cancer, premature births and other health disorders, thereby increasing health risks and raising health care costs. In Louisiana fossil fuel drilling, refining and combustion have engendered Cancer Alley ([Honoring Juneteenth: Fighting for Environmental Justice in Louisiana's Cancer Alley](#)) and significant harm to many other Environmental Justice communities.

ENERGY CONSERVATION, SOLAR and WIND are the 3 best, fastest, most economical ways to halt and reverse our climate crisis. We have a finite amount of TIME & MONEY - survival depends upon our using them wisely! There is a gravely mistaken idea being put forth that nuclear energy is the best solution. Here are a few of the many reasons proving **nuclear is a false solution**:

- Since the 1970s, more than 100 nuclear reactors in the US were abandoned, over 120 reactors were canceled before construction even began. The cost of these abandoned/canceled nuclear power plants in the US since the 1970s is tens of billions of dollars – a loss of \$100 Billion for those abandoned in the 1980's alone.
- Often, rate payers are required to pay for the cost of the nuclear reactor when the license is granted, long before – sometimes years before – a single electron is ever generated.
- One example is the Vigil C. Summer nuclear generating Station Units 1 & 2 in South Carolina, pursued jointly by South Carolina Electric & Gas (SCE&G) and State owned utilities. It was licensed in 2012, but abandoned in 2017, leaving about a \$7 Billion loss, and the rate payers to bear the major portion of that debt. That's a 19-year burden on their electricity bills for an abandoned and useless hulk. Their elected legislators had to pass a special law to make such charges legal.

Given these facts, is nuclear energy a wise use of our time and money?

CLIMATE CHANGE: Nuclear power is NOT zero emissions or carbon-free. Nuclear power reactors emit huge amounts of global warming heat directly into our air and water. It is not a climate solution. See: [**Nuclear is Not A Solution to Climate Change Susan H.docx*](#)

See also NYCP presents: Dr. Richard Perez, Senior Research Faculty, Atmospheric Sciences Research Center, SUNY Albany, discussion, *"Factors to Consider in Developing a 100% Renewable Energy Future."* <https://youtu.be/EO-ck5uEwBI>

INFORMATION REGARDING HEALTH EFFECTS OF IONIZING RADIATION: Information regarding health effects of ionizing radiation and radioactive isotopes from nuclear power generation cannot be dismissed, with mounting evidence of damages to health -- especially to women, children and girls. The new report by Mary Olson presented at UN HQ proves this: [*Gender and Ionizing Radiation: Towards a New Research Agenda Addressing Disproportionate Harm → UNIDIR*](#) We quote Dr. John Goffman: "Licensing a nuclear power plant is – in my view – licensing premeditated murder. It is not a question anymore – radiation produces cancer and the evidence is good down to the last dose." This statement is from the 1982 book "Nuclear Witnesses: Insiders Speak Out." by Leslie J Freeman. EPA website: "Limits for radiation exposure are well below 10 rems to protect the U.S. population - including sensitive groups such as children from increased cancer risks from accumulated radiation dose over a lifetime...children and fetuses are especially sensitive to radiation exposure." The Bulletin of the Atomic Scientists: [*Trump's new radiation exposure limits could be 'catastrophic' for women and girls - Bulletin of the Atomic Scientists*](#)

We quote the late Dr. Herbert Abrams, Nobel Peace Prize Winner, regarding the BEIR VII Committee report: "There is no evidence of a threshold below which no cellular damage occurs. Gamma radiation does not discriminate. High radiation doses tend to kill cells, while low doses tend to damage the genetic code – DNA. Lifetime excessive risks were determined for 12 cancers including lung, liver, breast, prostate, stomach, colon, thyroid and leukemia." [*Dr. Herbert Abrams*](#)

Exposing the existing nuclear waste host community at Indian Point to another 20 to 40 years of additional radiation and emissions will mean many more illnesses, cancers, suffering and increased health care costs directly related to nuclear power generation. The mandate of the NRC is to protect human health and the environment. The NRC needs to strengthen, not weaken, the standards for radiation exposures.

See also from Mari Inoue, Esq. **Significant health information in Japan after Fukushima** https://docs.google.com/document/d/1IXSwxUXeygOY1_JRy5BOBgt6_nAbGEVTTaB7FEVmrZq/edit?usp=drivesdk

WASTE: Radioactive nuclear waste is forever. Indian Point stores nearly **2,000 tons of highly radioactive spent nuclear fuel rods** (certainly not a "thimbleful"), all transferred from the reactors into fuel pools and then into more than 120 large thin-walled, steel canisters housed in concrete dry storage casks on-site, awaiting transfer to an undefined permanent disposal facility, with decommissioning ongoing under Holtec International. However, there is no

national repository for the current and future radioactive waste, forcing environmental justice and Indigenous peoples' communities to be keepers of the waste indefinitely. And Holtec is using their own canisters, which have been found to be defective – at San Onofre for example.

Spent fuel is the 13th and last stage of the nuclear fuel chain

(<https://www.nrc.gov/docs/ML1014/ML101400441.pdf>); and it is the most toxic substance of the Anthropocene. More than 250 short- and long-lived radioactive isotopes and activation products emerge from a fission reactor. Eighty years with this intergenerational poison has failed to ascertain a solution to this conundrum. DNA, our hereditary chemicals, are a target of radiation's menace; but spent fuel was already present when biologists became fully aware of DNA; then uncovered the frightening changes stimulated by unstable isotopes. The history of nuclear colonialism's disregard for the welfare of humans, animals and plants spans the globe from the Bay of Fundy, across Canada, through Hanford, the American Southwest, North Africa, the Pacific Islands, and on to the Australian Outback (see *Atomic Thunder: The Maralinga Story* by Elizabeth Tynan, ISBN 978174234281)

But classifications of radioactive waste lesser than spent fuel contain activation products from the fission process; the huge volume of used worker's gear; the slag piles from uranium mining; excess volatile products that must be vented to the air, as at the Metropolis, IL/Paducah, KY complex; and transportation of low- to medium-level radioactive waste on roads, trains, airplanes and waterways; dubbed "Mobile Chernobyls", that cover the globe.

Specific to Indian Point is the battle against "proprietary information" that has allowed contamination of the Hudson basin, including the deadly 12-year-half-lived tritium, which can't be removed from water or air because it IS water. As tritium decays it affects genetics and epigenetics. But water is an essential chemical.

With regard to the 1.3 million gallons of radioactive water stored in tanks on site, NY State is appealing a decision that overturned the Save the Hudson Bill, which would prevent its discharge into the Hudson River. Seven communities upriver take their drinking water from the Hudson Estuary and, while their treatment plants can filter out PCBs and other contaminants, they cannot remove tritium, if tritiated water is released. In 2010 multiple radioactive isotopes, including Tritium, Cesium-137 and Strontium-90, were found on the far side of the reverse osmosis membrane at the pilot Suez Desalination Plant in Haverstraw Bay, Rockland County, which came from radioactive water that leaked or was actively released into the Hudson River from Indian Point, located 3.5 miles to the northwest.

SAFETY: Another important factor is that Indian Point rests near two seismic fault lines. The main fault line near Indian Point is the [Ramapo Fault Zone](#), a major fault system running through NY/NJ/PA that passes near the plant, but researchers also identified a significant intersecting fault, the [Stamford-to-Peekskill Line](#), which runs less than a mile north of the site, creating a complex seismic area. The site also has a high pressure natural gas line traversing the site underground. The potential for an earthquake or pipeline explosion must be considered. Radiation monitoring at a nearby elementary school is currently underway and being evaluated.

In Summary, Facts vs. Fiction:

1. Nuclear energy is the most expensive form of energy. If reimplemented at Indian Point, energy bills will increase drastically.
2. Nuclear power isn't zero emissions and isn't carbon free. It is NOT a climate solution.
3. Nuclear power reactors emit huge amounts of global warming heat directly to our air and water.
4. Nuclear power is unreliable. During storms and droughts reactors are often forced to shut down.
5. Nuclear reactors release radiation, which causes cancer, increases health risks and raises health care costs.
6. Radioactive nuclear waste is forever. There is no repository for the current radioactive waste forcing environmental justice and Indigenous peoples' communities to be keepers of the waste.

NO MORE BAILOUTS! Money spent on nuclear power is money not spent on renewables.

Affordable Renewable Energy is what is needed and what will work best for New York and beyond.

Thank you for considering these preliminary comments . More to follow.

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