

Say NO to Indian Point Radioactive Wastewater Discharges into the Hudson River

- Richard Webster, Riverkeeper's representative on the Decommissioning Oversight Board (DOB)
- Michel Lee, Attorney
- Assemblymember Dana Levenberg, 95th Assembly District
- Jeremy Cherson, Sr. Manager of Government Affairs, Riverkeeper

Welcome

- Facilitated by **Rebecca Martin**, *Director of the Community Partnership Program*
- The presentation is being recorded (the Q&A session at the end of the webinar this evening will not be recorded)





Our Mission

Riverkeeper protects and restores the Hudson River from source to sea and safeguards drinking water supplies, through advocacy rooted in community partnerships, science and law.

Support us to do more of this important work and become a member. Contact **Monica Dietrich** at **mdietrich@riverkeeper.org** to learn how.

Agenda

- Presentations
- Assemblymember Dana Levenberg
- Take Action with Riverkeeper!
- Q & A





Richard Webster, Riverkeeper's representative on the Decommissioning Oversight Board (DOB)

Richard Webster is an attorney with over 20 years of experience in environmental litigation, in addition to 10 years experience as an environmental consultant and expert. He has represented numerous environmental groups and municipalities on a wide variety of issues. He is also Riverkeeper's representative on New York's Decommissioning Oversight Board that oversees the decommissioning of Indian Point. Until last year, Richard was the Legal Director for Riverkeeper and now serves as outside counsel. Before joining Riverkeeper, he litigated an aging management issue in the relicensing of the Oyster Creek nuclear power plant, an environmental justice issue in the Indian Point relicensing, and multiple issues in an initial licensing for the Levy nuclear power plant in Florida. Before becoming an attorney, Richard was an expert hydrologist and environmental scientist. Richard received his J.D. in 2002 from Columbia Law School. Long before that he earned a Master's Degree from London University in Engineering Hydrology and a B.A. in Physics from Oxford University in England.



Riverkeeper's position on Indian Point Tritium Discharges



Richard Webster,
Riverkeeper's
representative on the
Decommissioning
Oversight Board
(DOB)



Why Did Riverkeeper Campaign to Close Indian Point?

- Genesis was cooling water discharges - power plants that suck
- Concerns re radioactive contamination - groundwater discharges and tritium discharges
- Risk of accident - earthquakes, poor maintenance e.g. O rings, baffle bolts, packed spent fuel pools (“SFP”); Co-location of gas pipelines
- Consequences of accident: Failed evacuation plan, close to NYC



Closure - How and Why

- State, Riverkeeper, and Entergy agreed in Jan 2017 to close Indian Point in 2020 and 2021
- These parties were in the proceedings at the Nuclear Regulatory Commission (“NRC”) regarding license renewal and the state regarding the cooling water discharges
- Entergy’s decision precipitated by various state actions and economic factors
- State decisions prompted by public pressure from Riverkeeper, Clearwater, Indian Point Safe Energy Coalition (“IPSEC”) and others
- Upstate nukes got bailouts - give the people what they want.

Closure - Problems

- Entergy had the right to delay decommissioning until 60 years after closure - safe storage (“SAFSTOR”)
- Entergy selected Holtec as its decommissioning specialist - track record of bribes, lies and risk taking
- NRC is captured by the industry and unresponsive to public pressure
- No full time NRC inspector onsite
- NRC Citizen Advisory Boards are run by the licensee
- Preemption
- Who got the \$15M community fund?



Closure - Opportunities

- Holtec promised to get the decommissioning done in 15 years and to get fuel out of the fuel pools very quickly, reducing risk
- Coalition including Riverkeeper sought greater state oversight
- Public Service Commission asserted jurisdiction over the license transfer
- Riverkeeper and other parties at the Department of Public Service (“DPS”) license transfer proceeding agreed to settle with Holtec in return for the concessions in the Joint Proposal (“JP”)
- JP provides important financial guarantees, DEC supervision of the site clean up, emergency planning, etc.
- Governor agreed to set up the Decommissioning Oversight Board (“DOB”)
- DPS provided a full time resident inspector



Decommissioning: Can't Always Get What You Want. Are we getting what we need?

- Gas Pipeline remains but safety protocols in place to prevent rupture due to heavy equipment
- School remains close to the edge of the site, but robust radiological monitoring is in place and will be augmented
- Emergency response remains in place until SFPs are empty
- Holtec continues to push for exemptions to loosen the NRC requirements
- Dry casks for spent fuel are vulnerable to terrorist attack and the aging management is inadequate
- Radioactive groundwater continues to leak from the site
- Additional tritium discharges proposed in a “business as usual” approach

Tritium - Why?

- Issue arose in Massachusetts after citizen pressure EPA inserted a provision in the NPDES permit to prevent SFP water discharge. There is an ongoing debate about the issue there
- Entergy had routinely discharged radioactive water to the Hudson for over 50 years while the plant was operational
- A treatment plant reduces the other radionuclides in SFP water to a very low level
- What is good for Cape Cod is also good for the Hudson - showed these discharges could be stopped
- Campaign to prevent tritium discharges led by grassroots groups
- Prompted Riverkeeper to evaluate the issue further

Tritium - What Is It and Whats the Problem?

- Tritium is water (H_2O), with an extra two neutrons in the nucleus of one of the hydrogen atoms
- It is chemically equivalent to water
- Only way to separate it from water is by weight
- When the nucleus decays it emits an electron - called beta emitter
- Half life is around 12 years - time for activity to halve
- If the tritium is in your body when it emits an electron, that could cause genetic damage - should avoid ingestion
- No good health based standards
- Concern about bathers and organisms in the river.



Tritium - Tangled Jurisdictional Web

- NRC directly regulates the tritium discharge and allows it
- The Clean Water Act does not regulate radioactive discharges
- NRC will not stop discharge - need state to assert jurisdiction
- State might be able to prevent discharge of boron from the SFP using the SPDES program - EPA approach
- State legislation - to avoid preemption have to be careful not to venture into nuclear safety, but stick to economic and health issues



Riverkeeper's Position

- If we can avoid the tritium discharge, we should
- Two potential options to explore - solidification and separation
- Store SFP water in tanks for 12 years while we evaluate options
- Why 12 years? One half life plus does not impede site reuse
- Groundwater discharges should also be stopped - unfiltered and contains radioactive strontium and cobalt
- Support the Harkham and Levenberg bill - it's the best way to get action before August when Holtec intends to start the tritium discharges



Thank you!

Please save your questions for panelists during the Q & A period that will occur at the end of the presentations.

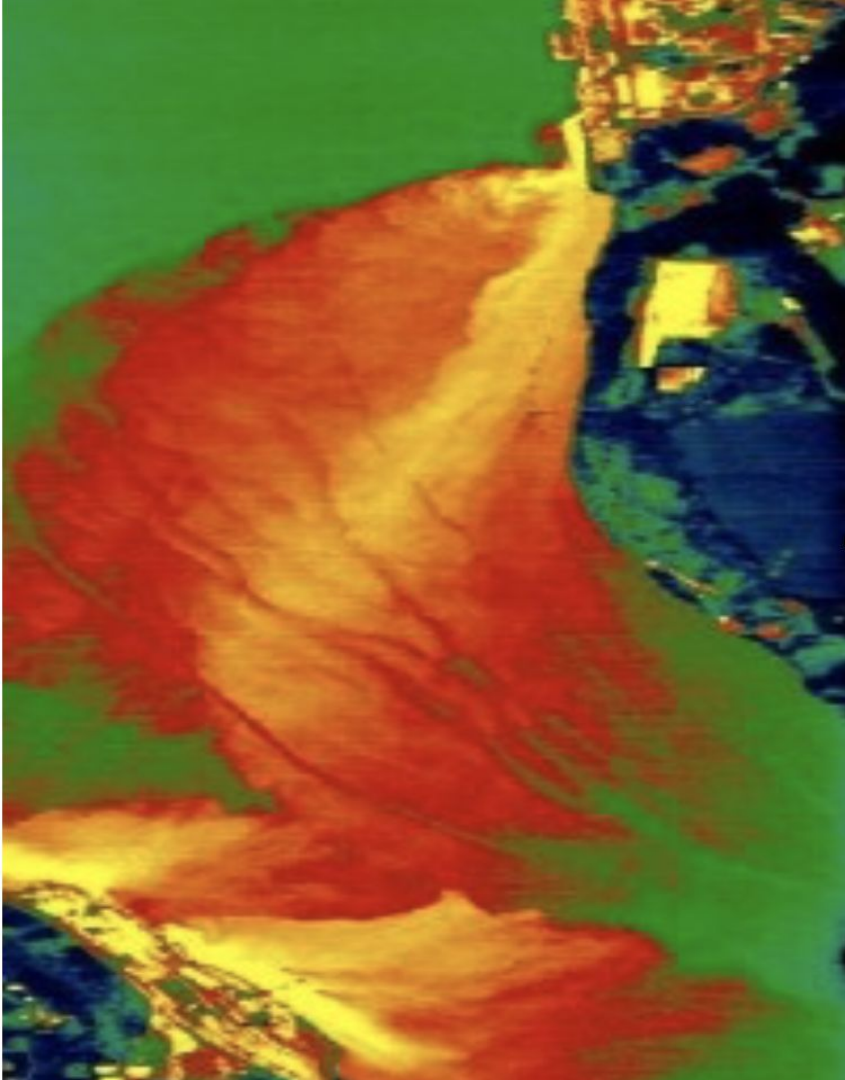


Michel Lee, Attorney

An attorney by training, Michel works in a pro bono advocacy capacity with a number of environmental groups in New York and serves on the board of the Nuclear Information and Resource Service (NIRS), an industry watchdog organization based in the Washington DC area. She is a member of the Nuclear Consulting Group (ncg), an international interdisciplinary think tank which focuses on a wide variety of issues which intersect with nuclear matters, including public health, safety and security.

Why This Matters

- The public has a right to a clean river
- Dilution is NOT the solution
- The Hudson River and the community have been dumped on enough



This image was acquired with a multispectral sensor and is from the thermal channel data showing thermal plumes from Indian Point (upper right) and the Lovett plant (lower left).
Riverkeeper, courtesy of Spectra Vista Corporation (Oct 2011).

Hudson: Tidal Estuary - Dynamic System

Rypina II, et al Spreading pathways of Pilgrim Nuclear Power Station wastewater in and around Cape Cod Bay (2022):

- *High likelihood of Pilgrim's wastewater entering Bay.*

Kenna TC, et al Determining Sources and Transport of Nuclear Contamination in Hudson River Sediments (2004):

- *"... elevated levels of Cs-137" observed in sediments collected in the vicinity of Indian "30km {18 miles} downstream of the plant's location."*

Bondareva L, et al, Tritium: Doses and Responses of Aquatic Living Organisms (2022):

- *Tritium "one of the most **biologically significant** radionuclides" and it can pollute the biosphere on local, regional, and global scales.*

Makhijani, A, Exploring Tritium Dangers: Health and Ecosystem Risks of Internally Incorporated Radionuclides (2023):

- *"For a given mass, it is, for instance, about 150,000 times as radioactive, in terms of disintegrations per unit time, as plutonium 239. One teaspoon of tritiated water (as HTO) would contaminate about **100 billion gallons of water** to the U.S. drinking water limit."*

National Academies

- Leveraging Advances in Modern Science to Revitalize Low-Dose Radiation Research in the United States (2022)
- “[T]he U.S. NRC’s regulations for protection against radiation (known as *10 CFR Part 20*) are still based primarily on scientific publications issued in the 1970s.”
- Research low-dose and low-dose-rate radiation in US: “limited and fragmented.”
- There is “increasing evidence” low-dose radiation exposure associated with “non-cancer health outcomes such as cardiovascular disease, neurological disorders, immune dysfunction, and cataracts.”
- “Past and present environmental exposures are especially concerning to some communities which are typically exposed involuntarily and may not receive or even agree with the presumed societal benefit.”



Health Experts:

*Expert Forums on Public Health and Safety Impacts of Indian Point Decommissioning:
Jan. 26 & Feb. 16 2023: <https://www.grassrootsinfo.org/indianpointforum>.*

"Physicists talk convincingly about 'permissible doses' of radiation. They consistently ignore internal emitters — radioactive elements from nuclear power plants that are ingested or inhaled into the body, giving very high doses to small volumes of cells. They focus instead on external radiation sources outside the body. Doctors know that there is no such thing as a safe dose of radiation, and that harmful impacts are cumulative. Children are ten to twenty times more vulnerable to the deleterious effects of radiation than adults and little girls twice that of boys."

- **Dr. Helen Caldicott, Nobel laureate, co-founder Physicians for Social Responsibility**

"Exposure to even very low levels of radiation is more dangerous than previously estimated, especially for women, children, and during prenatal life. Developing embryos, fetuses, and children have immature and rapidly growing organ systems, making them exquisitely sensitive to environmental exposures. Proportionally, they also receive greater doses of contaminants found in air, water, and food compared with adults, putting them at much greater risk from exposure to even tiny amounts of radioactive contaminants. There is no safe dose of radiation during prenatal and perinatal life, and cumulative harmful effects would result from multiple, ongoing exposures."

- **Dr. Kathy Nolan, pediatrician, bioethicist, president Physicians for Social Responsibility NY, co-founder Concerned Health Professionals of NY**

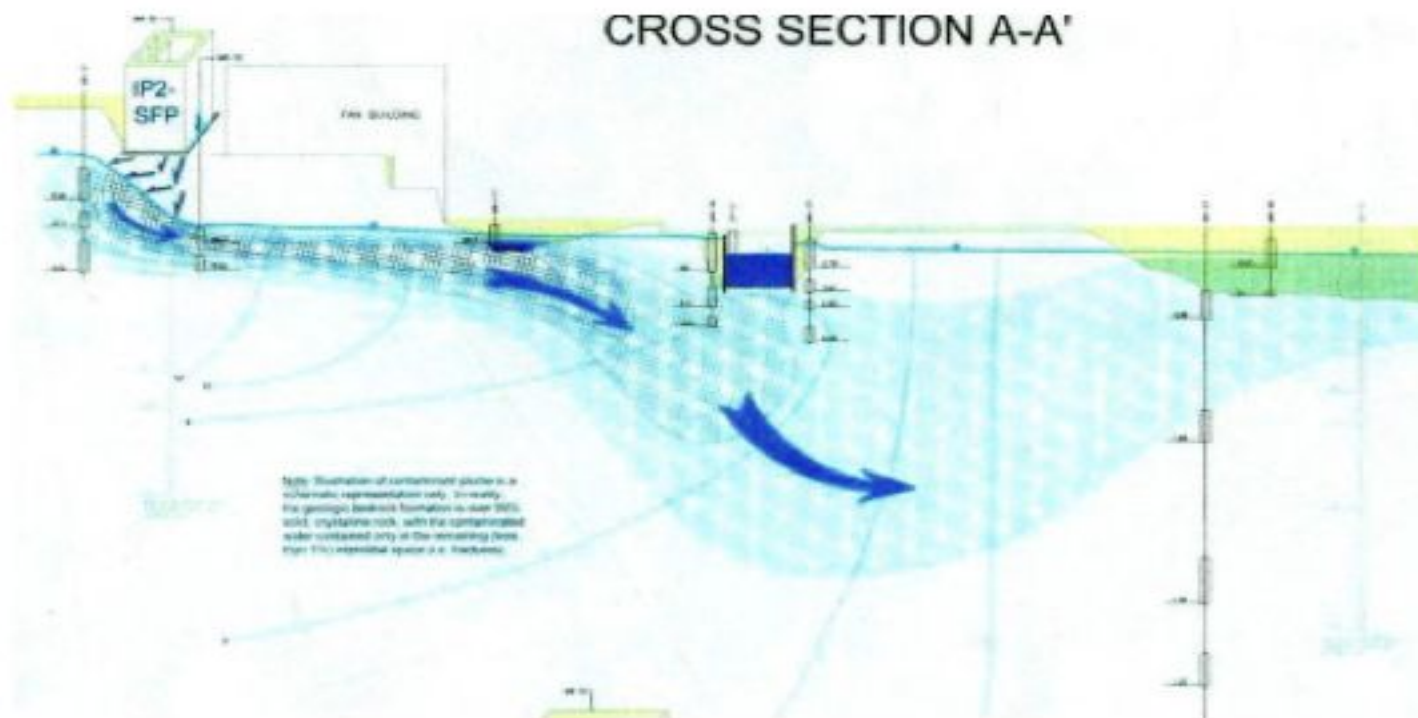
EJ - Basic Ethics: ENOUGH

Community-Based Environmental Justice Inventory:

- BASF Corporation
- Buchanan Village Sewage Treatment Plant
- Indian Point
- Lafarge North America
- Landfills
- Lovett Generating Station (closed)
- Peekskill Sanitary Sewer District Sewage Treatment Plant
- Wheelabrator Westchester

Raimundi KC, Wilson MJ, Greene MJ, Peekskill Environmental Justice Council:
Community-Based Environmental Justice Inventory for the City of Peekskill, Peekskill
Environmental Justice Council, Hudson River Sloop Clearwater, In. and Citizens for
Equal Environmental Protection report, Dec 2010.

Legacy Indian Point Radioactive Leaks





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Senator Pete Harckham

Pete Harckham was elected to the New York State Senate in November 2018, and re-elected in 2020 and 2022—the culmination so far of a distinguished career in public service. Currently, Harckham chairs the Senate Environmental Conservation Committee. Harckham helped pass the toughest climate protection legislation in the nation, and also introduced legislation, later enacted, requiring all new passenger car and truck sales to be zero emission by 2035. Harckham also founded K&E Farms, a small horse farm in Katonah, NY, where he donated conservation easements from the farm to the Westchester Land Trust. Both his prior residence and farm were converted to solar power.



Assemblymember Dana Levenberg

Dana's experience as Assemblywoman Sandy Galef's Chief of Staff, as well as nine years on the Ossining School Board, gave her the skills needed for managing staff and taxpayer dollars. During her tenure as Ossining Town Supervisor, Dana focused on building healthy communities—economically, environmentally, physically and mentally—all through a lens of equity. Dana brings a positive, can-do attitude to her work along with an instinct for collaboration. She co-founded the Ossining MicroFund as well as the newly formed Open Arms for Refugees, organized in the wake of the US withdrawal from Afghanistan. Dana also served on a number of boards or advisory boards throughout the region, including Sustainable Westchester, the Sing Sing Prison Museum, the Westchester Municipal Planning Federation, the Westchester Municipal Officials Association, Historic Hudson River Towns, and Teatown. Dana will continue working to make the 95th Assembly District greener, fairer and more prosperous for all through partnerships and innovative approaches to problem solving.



Riverkeeper Call to Action: Stay Engaged!

Urge Governor Hochul & State Legislators to stop radioactive dumping into the Hudson River Join Riverkeeper calling for secure storage of contaminated water on the Indian Point site while safer disposal methods are evaluated.

Go to [Riverkeeper.org/indianpoint](https://www.riverkeeper.org/indianpoint)



Questions & Answers about Riverkeeper's position and action alert



Thank you!



For more information, please visit:

[Riverkeeper.org/indianpoint](https://riverkeeper.org/indianpoint)