SIGN ON TO LETTER CALLING FOR A MORATORIUM ON INDIAN POINT NUCLEAR REACTOR RADIOACTIVE WASTEWATER DISCHARGE & ENVIRONMENTALLY SOUND ACTIONS WITH FULL PUBLIC INPUT

The deadline to sign is this Tuesday, July 18, 2023–fill out this form to add yourself to the letter here.

Governor Kathy Hochul
Attorney General Letitia James
Lisa Garcia, Environmental Protection Agency Region 2 Administrator
Ray Lorson, Deputy Regional Administrator, Nuclear Regulatory Commission
U.S. Senator Chuck Schumer
U.S. Senator Kirsten Gillibrand
Congressman Michael Lawler
Chair and CEO Director Rory Christian, Public Service Commission
Commissioner Basil Seggos, Department of Environmental Conservation
Commissioner James V. McDonald, M.D., Department of Health
Thomas Congdon, Department of Public Service, Chair, Indian Point Decommissioning Oversight Board
Mike Mastroianni, Assistant Secretary for Education
Senator Peter Harckham
Assemblywoman Dana Levenberg
Rachel Adler, Department of Labor
Mark Pattison, Department of State
Mark Massaroni, Department of Taxation and Finance
Jennifer Wacha, Division of Homeland Security and Emergency Services
Tom Scaglione, Empire State Development
Joe Leary, New York Power Authority
Alyse Peterson, New York State Energy Research and Development Authority
David Lochbaum, Nuclear Engineer (ret.)
Richard Webster, Riverkeeper
Rich Becker, Supervisor, Town of Cortlandt
Theresa Knickerbocker, Mayor, Village of Buchanan
Susan Spear, Deputy Commissioner of Emergency Services, Westchester County
Catherine Borgia, Westchester Co. Board of Legislators
Colin Smith, Westchester Co. Board of Legislators
Dr. Dennis Lauro, Hendrick Hudson School District
Lou Picani, President, Teamsters Local 456
Bill Smith, Vice President, Utility Workers Union of America Local 1-2
Thomas Carey, President, Westchester Putnam Central Labor Council

Dear Governor Hochul, Administrator Garcia, Administrator Lorson, Attorney General James, Senator Schumer, Senator Gillibrand, Congressman Lawler, Chair Christian, Commissioner Seggos, Chair Congdon and Esteemed Members of the Indian Point Decommissioning Oversight Board:

We, the undersigned, write to urge the Governor, the federal and state agencies, and the members of the Indian Point Decommissioning Oversight Board (DOB), to establish up to a two-year moratorium to research many serious outstanding issues and to develop an environmentally and economically responsible waste management process and plan that determines how to best address the Indian Point (IP) nuclear power plant tritium-contaminated radioactive wastewater from the spent fuel rod pool. We represent many elected officials; national, state and regional organizations; health, environmental justice, legal, civic, faith and community leaders.

Holtec wants to discharge radioactive tritium wastewater into the Hudson River this summer. This environmentally irresponsible proposal was temporarily delayed following massive protests by many state and local elected officials, over 400,000 people, communities, and organizations seeking to protect the Hudson River, its ecosystem, and residents. This letter describes the many important economic, environmental, health, jurisdictional, legal, good government practice, and right to know reasons for the moratorium. For each issue, we have included recommendations for judicious and environmentally sound actions to be conducted during the moratorium period.

1. Comprehensive Testing to Ascertain Toxic & Radioactive Components of the Wastewater
2. Comprehensive Testing to Investigate Impact of Past Discharges to the Hudson River

Before any decision can be made on what to do with IP's wastewater, it is incumbent on the state and federal agencies to require comprehensive testing for both radionuclides and toxic chemicals. This is a standard federal and state procedure, known as the "remedial investigation" phase, under the State and Federal Superfund and Brownfield Cleanup Programs, and it is a standard state practice for any proposed storage, disposal or discharge permits of toxic or radiologically contaminated waste. As importantly, such testing is also based on the "Right-to-Know" principle embodied in federal and state policy.

The Hudson River is a designated Federal Superfund site due to PCB contamination by General Electric (GE). The first stage in addressing GE's pollution was for the company to fund a comprehensive investigation, with careful oversight and monitoring by the Environmental Protection Agency (EPA), to test the river's ecosystem to determine the scope, level and types of chemical pollution. The state and federal government have a responsibility to do the same in relation to investigating and testing: 1) the IP wastewater; and 2) the current Hudson River ecosystem near IP to ascertain if any past air pollution, State Pollutant Discharge Elimination System (SPDES) permit discharges, spills, fires, etc. has left contamination that should be remediated. This investigation would be an important accountability action for the government to conduct, as opposed to Holtec, which has a financial conflict of interest.

Comprehensive Independent Testing: There is a high level of public distrust due to past "self-regulation" practices whereby Holtec and Entergy conducted their own testing of the Hudson River ecosystem, with little oversight from the agencies. The concerned public has also had substantial problems with obtaining past test results in a format and style that is easy to understand and compares such results with existing state and federal standards, in the same measurement units. It is also important that, for instance, fish sampling not be "averaged" but rather the test results for each fish be listed separately. Holtec should be responsible for funding both investigations, however, they must be done by the agencies, with full public input and oversight. Therefore, we request "split sampling" where the agencies take two samples from each site on the sampling grid and send the two samples to different state-certified laboratories. In addition, we request that an independent testing company determine the sampling protocols. For instance, national expert Arnie Gundersen states that the water should be circulating when the samples are taken by an independent agent and the samples split then. Dr Marco Kaltofen of Boston Chemical Data, another leading national expert, recommends using Eberline Labs for fuel pool water tests. In the case of Per- and Polyfluoroalkyl (PFAS), the samples should be sent to laboratories with the capability of a detection level of 2 PPT.

Comprehensive Wastewater Testing Plan: A responsible investigative process needs to be conducted starting with the release of a draft work plan for the IP wastewater which includes testing for all the possible radionuclides and toxic chemicals. The draft plan would have a 90-day public comment period, a public meeting to discuss the submitted comments, and a responsiveness summary detailing a response to each public comment. Clearly, the agencies should err on the side of caution and require testing for any possible contaminant, based on wastewater from other nuclear reactors, including tritium, uranium, krypton-85, cobalt–60, cesium–137, strontium 90, nickel– 63, carbon-14, and PFAS.[1] The Pilgrim reactor's wastewater contained PFAS and Perfluorooctanesulfonic acid (PFOS).

Comprehensive Testing Plan of the Hudson River Ecosystem: A responsible investigative process needs to be conducted starting with the release of a draft work plan on testing the river sediment, water, biota, such as fish, deer, otter, other wildlife, and cow milk for all possible radionuclides and toxic chemicals. The draft plan would have a 90-day public comment period, a public meeting to discuss the submitted comments, and a responsiveness summary detailing a response to each public comment. Clearly, the agencies should err on the side of caution and require testing for any possible contaminant, based on wastewater from other nuclear reactors. In the 1980s, the Department of Health (DOH) released annual reports to the public of strontium-90 test results of deer, fish and cow milk for all the communities living adjacent to a nuclear reactor. These historical reports, and the annual reports of Holtec, Nuclear Regulatory Commission (NRC), DOH and Department of Environmental Conservation (DEC) should also be reviewed to develop a comprehensive sampling grid.

3) Environmental and Public Health Assessment Process and Plan

Again, like the Superfund site procedures, a full assessment, with public input, needs to be conducted on the environmental and health impacts of any pollutants found in the wastewater, such as tritium, krypton-85, PFAS and PFOA. Tritium poses a significant health and environmental risk due to its radiological properties, as it is carcinogen, mutagen, and teratogen, and it bioaccumulates in fish, wildlife, biota and humans.[2]
Krypton-85 is a radioactive isotope which may cause cancer, thyroid disease, liver or kidney disorder.

https://www.environmentalpollutioncenters.org/krypton-85/ A scientific study found krypton-85 from nuclear fission interferes with the atmospheric-electrical system ... “There may be a krypton-specific greenhouse effect and a collapse of the natural atmospheric-electrical field … human well-being may be expected to be impaired …”[3] Holtec reported that 21% of krypton-85 was not filtered out of the polluted wastewater.[4] PFAS and PFOA chemicals are toxic, highly persistent and bioaccumulative. This year, the EPA released a health advisory stating that there is no safe level of exposure to toxic PFAS and PFOA chemicals, known as “forever chemicals.”

The agencies need to release a *draft assessment work plan* of how they will assess the various pollutants and their impact on the entire ecosystem, including sediment, soil, water, fish, birds, wildlife, insects, and humans. It would include comparison with state soil cleanup objectives, water quality standards, comprehensive database searches for studies done on “emerging contaminants”, such as tritium,PFAS and PFOA, fish advisory standards, and SPDES and other state biota protection standards. The draft work plan would have a 90-day public comment period, a public meeting to discuss the submitted comments, and a responsiveness summary detailing a response to each public comment. A *final draft Environmental and Public Health Assessment* would then be released for a 90 day public comment period, followed by the aforementioned public participation process.

4) A 30-day Discharge Notice Violates Citizen Suit Provisions of two Federal Laws

Holtec’s agreed upon 30-day notice before discharging the wastewater renders the Clean Water Act (CWA) and the Endangered Species Act (ESA) citizen suit provisions moot. Holtec’s *30-day notice* violates the CWA and ESA provisions allowing for the filing of an intent to sue notice with a *60-day waiting period* for an agency and/or Holtec to redress any potential violations. The one month notice – without any investigation or development of a waste management process - is grossly irresponsible and an insult to the residents of the Hudson River and to the State. A moratorium would allow for a legal, responsible and prudent process to be employed, with full public input.

5) New York State Wastewater Management Process and Plan, with Full Public Input

<u>As an NRC and EPA “Agreement State,” we maintain that the State of New York could establish a responsible state-lead administrative process to develop a waste management plan with full public input, based on state standards, and taking into account economic and other impacts to Hudson River communities.</u>

A strong case can be made that the State of New York, as an “Agreement State”, has the authority to administratively conduct a wastewater management process, with full public input, and determine the most economically and environmentally sound management plan. It is based on two federal agencies delegating their regulatory authority to DEC, state law, and state regulations. During a moratorium, the Attorney General’s Office, state agencies, environmental lawyers and organizations, could fully research the issue of the state’s authority, including contacting states and groups elsewhere in the country who are dealing with a nuclear power plant decommissioning situation, and reviewing case law.

First, the State and New York City, including the DEC, the DOH and the NYC Department of Health and Mental Hygiene, have been delegated by the NRC to regulate the discharge and remediation of certain radiological materials. An agreement between the U.S. Atomic Energy Commission (precursor to the NRC) and the State of New York was signed in 1962.[5] *(Attached.)* According to federal NRC regulations, the NRC is authorized to enter into such agreements with the Governor of any State providing for the discontinuance of the NRC’s regulatory authority and the delegation of that authority to a State to regulate materials “for the protection of the public health and safety from radiation hazards.”[6] This includes “byproduct”[7] materials such as tritium.

Second, the DEC has been delegated by the EPA to implement the National Pollutant Discharge Elimination System (NPDES). DEC implements the NPDES program through Article 17, Title 8 of the Environmental Conservation Law, with the SPDES program. State law specifically empowers the DEC with the authority to regulate “pollutants” and the definition of pollutants includes “radioactive materials” (Article 17, Title 1-0105).

The process to determine the management of the radioactive and toxic wastewater from a closed non-operating, private nuclear power reactor is precedent-setting. Future generations will have to live with the decision that is made. It is incumbent on the State to establish a judicious and fair process, with a priority to select the waste management option that best protects the river’s ecosystem, communities, and the economic, societal, health and environment of the Hudson River region. Public participation is a cornerstone of any government remediation or waste management program. Concerned citizens, policymakers and organizations have a plethora of complaints, concerns, questions, and requests for information that have not been adequately addressed, nor have they been an integral part of the so-called wastewater management process to date. Good government practices require meaningful public involvement, comprehensive public information that is readily available, and regular opportunities to have two-way

communication with government decision-makers. (See DEC Public Participation guidance for Superfund/Brownfield sites).

There are many outstanding issues surrounding the storage or disposal of radioactive and toxic wastewater, and a critical need for a contemplative government and public process. The following are just a few of the many important issues that should be addressed.
➤The impact on EPA's Federal Superfund Hudson River five-year permanent remedy review process, and its ongoing lower Hudson River PCB investigation.
➤Whether leaking tanks of waste can be addressed by a system that assumes such leakage will occur and is engineered to address it – namely above ground storage with monitoring and retrievability for regular repackaging – and how to set up structured funding, such as a trust fund, to ensure necessary repairs occurs in the long-term.
➤Research on effective nuclear and toxic waste management remediation, storage and disposal methods.
For example, a 2008 independent scientific study recommended the following management plan for the high-level nuclear wastewater at the West Valley site. "The most significant contamination in the HLW [high level waste] tanks is expected to be in the residual liquid in the bottom of tanks 8D-1 and 8D-2, holding 14,000 and 5,000 gallons of high level waste, respectively, and in filters designed to capture radionuclides and remove excess liquid from wastes. The filters, estimated to hold 94,000 curies of cesium-137,115 would be flushed out; the flushing liquid would be mixed into cement to form a Class C radioactive solid waste. The tank contents would be flushed and solidified with grout. These solids, as well as the demolished tank shells, would be transferred into 55-gallon drums …"[8]

It is long past time for the State to assert its authority to develop a waste management plan which fully assesses all options with an end goal to safeguard the economy, public health and environment of the communities along the Hudson River. **The State's wastewater management plan and, if needed, a remediation plan, should be conducted with full public input, and should fully explore the various storage and disposal options for the wastewater.** The process and final management decision should follow state statutory and regulatory standards that are fully protective of human health, and the ecosystem, including biota, fish and wildlife, and should assess the impact on the economy of Hudson River communities.

The Plan should be grounded in an environmental justice framework following the State's recent designation of the communities surrounding Indian Point using the Disadvantaged Community Criteria (DAC). Several census tracts near Indian Point are on the DAC list, including Peekskill, Buchanan, Montrose. Haverstraw and West Haverstraw. This designation indicates that these areas have unfair environmental burdens and have socioeconomic factors that leave them unable to manage the health impacts of pollution.[9] For instance, a Hudson River resident, Courtney Williams, is in a census tract in Peekskill with a higher environmental burden than 98% of census tracts in New York. The State should utilize the Commissioner's Policy 29 [10] which provides environmental justice communities with an enhanced public participation plan. The Plan should include the establishment of a *Hudson River Advisory Group* composed of state and local elected officials, residents, and environmental, environmental justice, health and civic group representatives. The Plan should also include an *Expert Advisory Group* of independent scientists, health and nuclear energy engineers without conflicts of interest to provide input.

6) Follow State Standards on Air, Water, Soil, Sediment & Wildlife Pollution

The NRC License Termination Rule (LTR) policy has a radiological standard for "unrestricted use" of 25 millirems per year, which is based on a cancer risk of 1 in 500 people.[11] This means the exposure to all remaining radioactive materials after remediation is estimated to result in one in 500 people contracting cancer. The EPA has stated in 1997 testimony,[12] a 2000 letter, and a 2014 memorandum that the NRC LTR policy is not protective. EPA requires a risk range of 1 in a million (10^{-6}) to 1 in 10,000 (10^{-4}) cancer incidence risk. For instance, an EPA official stated: [The NRC policy] "would not adequately protect either the health of our citizens or our nation's natural resources ... To put it bluntly, radiation should not be treated as a privileged pollutant. You and I should not be exposed to higher risks from radiation sites than we would be from sites which contained any other environmental pollutant." *See Appendix XX for more information.*

New York State's statutory and regulatory policies for toxic air pollution and toxic waste site remediation are based on a 1 in a million cancer risk level, as well as protection of drinking water, surface water and air (including indoor air), sensitive populations, including children, and ecological resources, including fish and wildlife. This 10^{-6} policy is explicitly stated in the NYS 2003 Brownfield Cleanup Program & State Superfund statute (Article 27, Title 14). "… All remedial programs shall be protective of public health and the environment including but not limited to groundwater according to its classification pursuant to section 17-0301 of this chapter; drinking water, surface water and air (including indoor air); sensitive populations, including children; and ecological resources, including fish and wildlife … the target risk of residual contamination at a site shall not exceed an excess cancer risk

of one in one million for carcinogenic end points …"[13] The DEC Air Guide 1 also sets Annual Guideline Concentrations for permit emissions at the 10^{-6} level.[14] **The NRC LTR cancer risk of 1 in 500 people is a public health policy travesty and is in direct conflict with our State's policies.**

7) State Championed Responsible, Economically-Sound Management of Nuclear Waste Utilizing Above Ground Storage through State Funded Study and Legislation

New York State has twice championed an environmentally responsible nuclear waste storage proposal with a landmark study and legislation proposing that "low-level" radioactive waste be stored in an above ground storage building that would isolate the waste from the environment and be designed to ensure comprehensive monitoring and retrievability. When a tank or barrel of waste inevitably starts to leak, a monitor would alert the engineers, and the leaking barrel would be mechanically retrieved, repackaged, and put back into the ABG storage building. In both instances, the State sought an alternative approach to an irresponsible federal agency plan or a federal law which was later partially overturned by the U.S. Supreme Court.

Ban On Shallow Land Burial Law & Reactor Above Ground Storage Legislation: In the late 1980s, New York State passed a law that banned shallow land burial of "low-level" radioactive waste (LLRW), banned the disposal of LLRW at the leaking West Valley nuclear waste site and established a Commission to site a "low-level" radioactive waste disposal facility. At the time, federal law required all states to develop LLRW disposal plans. During this multi-year process, Senator Lack and Assemblymember Luster introduced legislation requiring the State to construct an above ground storage LLRW monitored and retrievable building in the "buffer zone" area of a state-owned reactor. This bill was strongly supported by many state legislators and organizations. A lawsuit led by New York State counties was heard by the U.S, Supreme Court which ruled that states were not responsible for the management of privately generated waste from nuclear reactors and other facilities.

State Funded Study Found Storage/Off-site Disposal of West Valley Nuclear Waste Poses Least Risk to Population, and Lowest Economic, Societal and Project Cost: A study by Synapse Energy Economics and a team of scientists evaluated two cleanup alternatives presented in a federal report for the West Valley nuclear waste site, located 30 miles south of Buffalo, NY. The West Valley Nuclear Waste Site was the country's only commercial nuclear reprocessing facility and it failed, leaving behind buried massive tanks, holes and trenches of commercial and weapons hazardous and radioactive waste. The study, funded by the Legislature, found that waste excavation and on-site above ground storage monitored and retrievable storage facility (for 73 years), followed by off-site disposal of the waste is less expensive than continually managing a leaking buried waste landfill. Over a 1000-year timeframe, the excavation and above ground storage option presented the least risk to a large population and the lowest economic, societal and project cost. [15]

Emergency Meetings Request: Since Hudson River communities and the river's ecosystem are at substantial risk from the proposed discharge of radioactive wastewater, and since over 400,000 people, over 30 municipalities and over 138 organizations are strongly opposed to the discharge, we request a series of emergency meetings to discuss all the issues embodied in our call for up to a two-year moratorium. The meetings would be with the Governor's senior staff, and officials from the EPA, NRC, Department of Public Service (DPS), DEC, DOH, members of the DOB, and representatives of the constituencies that signed this letter. We request the meetings be held in July, August, and September 2023, with full public input on the meeting agendas. These meetings are necessary and in addition to the July 31st meeting.

Thank you for considering our request. We look forward to receiving a timely response from the Governor, the state and federal agencies, and DOB members due to the emergency nature of the situation. Please do not hesitate to contact us if you need more information or have questions. The contact is: *(Will add name, email and phone number of an organizational representative.)*

Sincerely,

Cc: Jeshica Patel, Assistant Counsel, Office of the Governor
Daniel Schroeder, Chief, NRC Division of Reactor Projects
Brett Klukan, NRC Regional Counsel
Richard Guzman, NRC Project Manager
Lem Srolovic, Chief, AG Environmental Protection Bureau
Kelly Turturro, DEC
John Sipos, DPS Counsel

Tom Kaczmarek, DPS Executive Director
Lee Gough, Leah Krauss, Nina Nichols, The EcoAssembly of NY

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[1] *Responses to Public Comments and Questions* February 2, 2023 DOB Meeting
[2] Dr. Gordon Edwards, *Health Dangers of Tritium Emissions*, http://ccnr.org/tritium_1.html; Alan Williams, University of Plymouth, Scientists call for coordinated global effort to assess the full environmental impacts of tritium. 4/4/2023, https://phys.org/news/2023-04-scientists-global-effort-full-environmental.html; Dr. Ian Fairlie, The Hazards of Tritium, 3/13/2020, https://www.ianfairlie.org/news/the-hazards-of-tritium/; PPT, 2023, https://mail.google.com/mail/u/0/#search/valeria%40dtesq.com/WhctKKXwxrWnWgjDdjGskgkhSrJCmcVmHdSwSlKTKMXCHXwwtdHSCNdFlTmnJVfnMjKXskQ?projector=1&messagePartId=0.1; and Makhijani, Arjun, "Exploring Tritium Dangers: Health and Ecosystem Risks of Internally Incorporated Radionuclides", IIER Resource Books, 2023. Exploring-Tritum-Dangers.pdf (ieer.org).
[3] *Climate risks by radioactive krypton-85 from nuclear fission Atmospheric-electrical and air-chemical effects of ionizing radiation in the atmosphere*. (1994). http://inis.iaea.org/search/search.aspx?orig_q=RN:26044629
[4] Holtec International, "Decommissioning Oversight Board," April 27, 2023, slide 15.
[5] *Memorandum of Agreement between the U.S. Atomic Energy Commission and the State of New York*, 10/15/1962, https://www.nrc.gov/cdn/nmss/pdf/nyagreements.pdf
[6] 42 U.S. Code § 2021 - Cooperation with States, https://www.law.cornell.edu/uscode/text/42/2021
[7] Ibid.
[8] Alice Napoleon, Jeremy Fisher, PhD, William Steinhurst, PhD, Synapse Energy Economics; Professor Michael Wilson, PhD, SUNY Fredonia; Frank Ackerman, PhD, Tufts University; and Marvin Resnikoff, PhD, Emily Brown, Radioactive Waste Management Associates. Pg. 53. *The Real Costs of Cleaning Up Nuclear Waste: A Full Cost Accounting of Cleanup Options for the West Valley Nuclear Waste Site,* 2008, https://www.nirs.org/wp-content/uploads/radwaste/decommissioning/wvfcareport1108.pdf
[9] DEC, March 2023, https://climate.ny.gov/resources/disadvantaged-communities-criteria/
[10] https://www.dec.ny.gov/regulations/36951.html
[11] PART 20—STANDARDS FOR PROTECTION AGAINST RADIATION, § 20.1402 Radiological criteria for unrestricted use. https://www.nrc.gov/reading-rm/doc-collections/cfr/part020/full-text.html
[12] Statement on the Nuclear Regulatory Commission's Rule on Radiological Criteria for License Termination, April 21, 1997, Ramona Trovato, EPA Director, Office of Radiation and Indoor Air.
[13] Environmental Conservation Law, § 27-1415. Remedial program requirements.
Laws of New York (state.ny.us)
[14] DEC Policy DAR-1: Guidelines for the Control of Toxic Ambient Air Contaminants. Air Guide 1, Guidelines for the Control of Toxic Ambient Air Contaminants http://www.dec.ny.gov/chemical/30681.html
[15] Alice Napoleon, et al. *The Real Costs of Cleaning Up Nuclear Waste: A Full Cost Accounting of Cleanup Options for the West Valley Nuclear Waste Site,* 2008, https://www.nirs.org/wp-content/uploads/radwaste/decommissioning/wvfcareport1108.pdf