**Hudson River Sloop Clearwater Comments Submitted   
to the US Nuclear Regulatory Commission**

**on Holtec’s Planned Shut-down Activities Report (PSDAR)**

Submitted July 29,2021

Problems with Holtec’s planned spent fuel handling and dry storage systems include:

**Cask and Canister issues:** There is a 20 - 25 year warranty on canisters and cask system; what will happen after that? Will fuel assemblies need to be moved again?

* Holtec plans to continue to use a containment system for Spent Nuclear Fuel (SNF) of thin-walled canisters (½” -- ⅝”) inside thicker concrete casks lined up like bowling pins on a concrete tarmac -- a configuration which is more vulnerable to terrorism than Hardened Onsite Storage (HOSS), which could be much safer and should be explored. In Europe and many other countries nuclear waste is stored in more robust canister systems (10” - 20” thick) and often in hardened buildings.
* Visual inspection of canisters is not adequate (see below under monitoring). There are no pressure monitors or relief values to assess and protect canister integrity. The Nuclear Waste Technical Review Board.(NWTRB) recommends that Spent Nuclear Fuel (SNF) and its containment must be *maintained, monitored, and retrievable* in a manner that prevents radioactive leaks and hydrogen gas explosion.
* The radiation release limit of 10 mRem embodied in Joint Proposal should be honored, as opposed to the 25 mRem required by NRC

**High Burnup Fuel:** About 60% of Indian Point’s spent fuel inventory is high-burnup (HBU) fuel, which is much hotter and more radioactive than ordinary spent fuel, and requires at least seven years or more before moving it to dry cask storage. Holtec’s plan to compress this process to three years or less may reduce costs, but also puts workers and the surrounding community in jeopardy.

**Inadequate Site Remediation:**  Holtec’s preliminary Post Activities Shutdown Report (PSDAR) indicates that it will do nothing to remediate radiological contamination known to be leaking into the groundwater and the Hudson River, and that it will only superficially remediate contaminated soils,

**Radiation Monitoring:** Holtec’s Post shutdown plan makes no provision for effective, accurate, off-site radiation monitoring despite the fact that radioactive particles and gasses are expected to be released into the air during the demolition of structures on site. The NRC has no requirement for offsite monitoring and therefore absolves Holtec from paying for it. There is also no plan to detect increasing pressure or temperature, container crack formation, or other problems that can lead to radiation leakage from the sealed thin-walled canisters they plan to use -- nor any way to respond to and remediate a leak or other failure, should it occur.

* Perimeter monitoring is not adequate to capture issues directly at the work site which can impact the workers.
* Offsite monitoring is needed, especially at the nearby elementary school.
* At Bruce Units 1 & 2 in Ontario, Canada more than 500 workers were exposed to radioactive dust and volatilized isotopes while cutting channel tubes that needed to be replaced.

**Pipeline Risks:** Indian Point is not only located at the intersection of two earthquake faults, it is also unique in that it has the Algonquin and a new 42” high-pressure AIM gas pipelines running under and adjacent to the facility. No other nuclear site in the nation is so threatened by pipelines. Demolition work inherent to decommissioning elevates the hazard. NYS and multiple independent experts recognize the risk. However, the pipelines are not even mentioned in Holtec’s PSDAR. The NRC’s Office of Inspector General (OIG) harshly criticized the NRC staff for dismissing the danger of an explosion as “not credible, and instead ignoring key data and tailoring its modeling of explosion risks to fit the desired foregone conclusion that no action is necessary.

**Earthquake Zones** should be studied further to have a full picture of the environment in which the decommissioning will take place. Request information from Columbia University Lamont Doherty Earth Observatory (LDEO)

* North Anna: Dominion is seeking a license to build a new plant, despite the Aug. 23 earthquake at North Anna 1 & 2, which didn’t meet seismic standards -- but they are now designing Unit 3 to do so. Units 1 & 2 are still operating
* Information on two earthquake zones has been scrubbed from record

**Emergency Planning and Response**: In the Joint Proposal, NYSDHSES will oversee Emergency Management and Response, with funding provided by Holtec, starting at $1,000,000 per reactor in 2022, decreasing when all the radioactive fuel is move to dry cask storage and then dropping to $250,00 -- $750,000 depending on when that transfer is completed, and to $100,000 after Partial Site Release and as low as $25,000 until License Termination. Although dangers resulting from failure of a reactor, steam turbines, transformer explosions or other major failures have decreased since the plant ceased operation, nearly 2,000 tons of highly radioactive fuel is stored on site and dismantling the facility poses new dangers and the need for emergency planning will continue as long as waste is stored on site. The funding schedule is clear but not the actual emergency evacuation plan for various occurrences.

* Oyster Creek has a transfer pit, but no onsite overpack. It will take many hours or days to get one transported from Camden to Lacey Township and it is questionable whether this is an effective solution or whether a very expensive hot cell is needed.

**Transportation:** Holtec’s plan envisions shipping Indian Point’s radioactive waste, including highly radioactive spent fuel, down the Hudson River by barge.

* Barging contaminated materials down the Hudson River through NY Harbor poses a risk to river towns and the greater NYC Metropolitan area.
* As the high-level nuclear waste is transported across the country, it will threaten the safety of communities along the transport routes, especially EJ populations in under-represented cities and rural areas.
* A 2019 Department of Energy (DOE) Gap Analysis indicates that more needs to be understood about the impact of changing the vertical orientation used in dry cask storage to a horizontal orientation for transport, including increased temperature and possibility of degrading the cladding which hold the fuel pellets in place in the fuel road. It recommended additional modelling, which is not being done.
* Aging infrastructure along transportation routes -- road, bridges, overpasses, and tunnels -- has not been assessed to see if it is capable of handling 120,000 metric tons of nuclear waste that would be sent to proposed Consolidated “Interim” Storage (CIS) in Texas or New Mexico -- let alone preparing for effective emergency response should an accident occur due to failed infrastructure and/or other causes. Note: Interim is in quotes because, if allowed, it could well become indefinite, if not permanent.

**Environmental Justice Concerns:** The operation and decommissioning of nuclear power plants, transportation and storage of spent nuclear fuel disproportionately impacts communities of color and low income in reactor communities, such as those at and surrounding Indian Point, those transportation routes, and especially indigenous and Latinx communities at potential recipient communities in TX and NM.

* Leona Morgan, Dine activist, gave a compelling overview of the long history of harmful impacts to the Downwinders from the Trinity Atomic test site, uranium mining, milling, processing, transportation and now storage. These communities -- mainly indigenous and Latinx -- have been burdened with radiation exposure and have suffered health and other impacts and should not be forced to host most of the 3,200 spent fuel canisters -- the nuclear waste from nearly 100 reactors across the nation.
* The proposed CIS facilities are collocated in areas of fossil fuel extraction -- including active oil fields and hydraulic fracking sites, which can induce earthquakes.
* Holtec’s plans for off-site transport of radioactive waste, shipping Indian Point’s spent fuel to New Mexico to be stored at Holtec’s consolidated interim storage facility are unacceptably dangerous, and violate the principles of environmental justice and consent-based siting, as well as federal law, which prohibits interim storage before a permanent repository is sited.

Because transportation is so dangerous and the proposed CIS storage is both unjust and unlawful, we must be very certain that onsite storage is done as safely as possible.

**Pressing need for Nuclear Harvesting and Autopsy, especially to inform License Extension Applications:**  Reactor owners are now seeking 40 - 60 - 80 year license extensions, but little to nothing has been learned about effects of operations on aging. Indian Point can serve as a pilot to design an engineered testing system to send samples for autopsy. We need regulations requiring autopsy of closing reactors so that lawmakers and the NRC and other regulatory bodies will have information on which to base future decisions, especially in the face of so many license extension applications. The *Seattle Times* will publish an article on this in Sept, which we will add to the NRC and NYS Decommissioning Oversight Board dockets.

**Financial Risk to New Yorkers:** With the License Transfer, Holtec has taken over the $2.3 billion plus Decommissioning Trust Fund. While NYS has negotiated some important financial assurances, Holtec is a privately owned company with no financial transparency. Ultimately, if everything does not go according to Holtec’s Plan, New York taxpayers may be left holding the bag.

**NRC Oversight:** Given its history of easily granting waivers and exemptions to the nuclear industry, often at the expense of public health and safety, and of at times not following its own regulations, the NRC has been described as an “industry-captured agency”.

* Frank von Hippel, former assistant director for national security in the White House Office of Science and Technology, recently wrote, “*Over the past two decades, the NRC has been captured by the nuclear power companies it is supposed to regulate. The process of capture and resulting erosion of regulation has been driven in part by the increasingly poor economics of nuclear energy as companies struggle to avoid large costs due to additional safety measures. However, the path has been laid to a potential disaster.”*
* NRC ignores or dismisses many of the problems cited above. It has allowed Holtec to make unauthorized and flawed design changes stand, has exempted Spent Nuclear Fuel (SNG) containment from meeting American Society of Mechanical Engineers Standard (ASME) Standards, ignored NWTRB recommendations, and made other decisions that compromise their role as regulators and could have severe consequences.
* This is a chance for the NRC to honor its mission by putting public health and safety and environmental protection before industry profit and making wise decisions that include planning for worst case scenarios, rather than dismissing those as “not credible.”

On Feb. 25, 2021, Clearwater submitted a more detailed document on Holtec’s PSDAR as contained in the License Transfer Application and the Joint Proposal to the NYS Public Service Commission, which is attached to these brief comments.

Thank you for considering these comments.

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