



Hudson River Sloop Clearwater Questions and Comments on Holtec's Post Shutdown Decommissioning Activities Report (PSDAR) for Indian Point

Please note: These comments and questions are a compilation of comments provided by several concerned citizens and organizations that have been following Indian Point-related issues over the years.

The complex information provided in the PSDAR underscores **the need for technical experts to review Holtec's proposal, especially with regard to decommissioning activities and cost-estimates, and for long-term monitoring of Decommissioning Trust Fund (DTF).**

Canisters and Casks: Holtec has not specified which casks are currently in use and which they plan to use. This is an area that Holtec is especially qualified to address.

- Will they be inspected (some have never been)?
- How will they be monitored?
- What is the model type and weight of the canisters planned for storage?
- Are they capable of being transported?
- Will there need to be an overpack?
- What if there is an accident or wall deterioration that leads to the need for repackaging?

New Crane: Holtec has requested to use a new crane to transfer IP spent fuel. The NRC will hold a partially closed meeting on Jan 16 to discuss with Entergy Operations, Inc. and Holtec International a License Amendment Request to Replace the Indian Point Nuclear Generating Unit No. 3 Fuel Handling Building Crane with a New Holtec High-Lift Crane.

The transfer cask that takes Spent Nuclear Fuel (SNF) from the pool to dry cask has a water filled jacket, which prevents more radiation from escaping. But the water makes it too heavy, so they are proposing to move the casks minus the water, which increases radiation exposure. Holtec wants an exemption to raise the exposure limits to workers to 3500 mrems/hour which experts say is very high.

Significant Omissions from PSDAR:

Emergency planning and response: There is no serious consideration of accidents, or the need for ongoing first responder training and response. In fact, possible decommissioning accident scenarios are not dealt with at all. Instead the PSDAR references the GEIS NUREG-0586, which, in Section 4.3.9.2 page 4-40, clearly stated that potential for a radiological accident is actually higher during decommissioning than during plant operations due to extensive activity that does not occur during normal operation of the active plant, especially surrounding reactor deconstruction. At Oyster Creek, Holtec is not providing for any emergency response plan, planning or training. This is being left entirely to the local first responders, with no financial contribution from Holtec. What is the Emergency Planning Zone and who will be responsible for Emergency Response? Who will pay for this service?

There is no mention of multiple high-pressured Algonquin gas pipelines running under critical areas of the site. Indian Point is the only nuclear power plant in the nation that is co-located with natural gas transmission pipelines. New York State conducted a risk assessment of co-locating the "Algonquin" Pipelines at the site.

Cover letter here: <https://sape2016.files.wordpress.com/2018/12/nys-letter-to-ferc-re-risk-assessment-june-22-2018-2.pdf>

Executive Summary here: <https://sape2016.files.wordpress.com/2018/12/executive-summary-hdr-aim-ip-risk-assessment-2.pdf>

New York State concluded that "NRC and FERC must coordinate a review of Entergy's decommissioning plan when filed to determine potential impacts to the original Algonquin pipelines and the AIM pipeline. Given the heavy excavator work that will be part of decommissioning, FERC may need to require Enbridge, Inc. to temporarily cease gas operations during the decommissioning activities that may threaten the pipeline integrity."

Researchers at Princeton University (Lyman et al, Nuclear safety regulation in the post-Fukushima era, Science, 2017) conducted a study measuring the impacts of a fire of irradiated spent fuel. Their conclusion was that a spent fuel fire could dwarf the impact of Fukushima. The existence of these pipelines is known. The Executive Summary of the NYS Risk Assessment and the conclusions of it are publicly available. The New York State Indian Point Closure Task Force has discussed these pipelines, including as part of the reuse study due to the large acreage that cannot be reused. The NYS Public Service Commission is actively monitoring the gas pipelines and the inability of Enbridge to shut them down in the event of a rupture. Holtec has wholly ignored the risks that the pipelines pose to the 40+ years of irradiated spent fuel at Indian Point and ignored the increased risks that demolition and decommissioning pose to those pipelines.

Storage and Transport of High Burn-Up Fuel (HBF): There is no mention of the added risks associated with high burnup fuel, which has been used at Indian Point for several years and is much hotter and more radioactive than fuel used previously

- How long will HBF need to stay in fuel pools before they can be safely transferred to dry cask storage?
- How will HBF assemblies be stored in casks? What is the specific configuration?

Leaks of Radioactive Isotopes into Groundwater: There is mention radioactive isotopes contaminating the groundwater under the IPEC facility, but no description of how it got there. This a unique problem and Indian Point and needs more explicit description and may require more aggressive treatment than Monitored Natural Remediation (MNA).

PSDAR: 2.0 DESCRIPTION OF PLANNED DECOMMISSIONING ACTIVITIES

2.4.3 Segmentation and Dismantling of the RVI and RPV: Why is Holtec planning to decommission IP-3 before IP-2, which will close first?

2.4.4 Removal of fuel pools is ill-advised. What if there is a problem in a cask? No mention of a -- cell. Leaving a fuel pool for emergency is a wise precaution.

2.5 Ongoing ISFSI Operations

Dry Cask Storage: The PSDAR includes no discussion of standards for dry cask storage. Instead it indicates that there is room for 54 casks to be located on the first ISFSI and that 71 casks will be located on the second ISFSI. Where is the second pad being built? Can it be built in one year? It took years to build first pad because there wasn't enough concrete production available to meet the demand of the ISFSI pad locally. See also initial questions above re: Canisters and Casks.

“Fuel and GTCC waste shipping will be performed when repositories for this type of waste are developed by the DoE...” What if they are not developed?

2.7 Changes in Management and Staffing: Holtec promised IP worker retention -- there is no mention of Entergy staff and management being retained in the PSDAR. Later, in the IP Site-Specific Cost Estimate, Section 3.2: Management after License Transfer..., it does say that “site incumbent personnel” (Entergy employees) will be offered to join the CDI team after license transfer according to their expertise and previous position held. It is far better to retain and retrain Entergy IPEC staff, who know the facility from years of experience than to bring in workers that are unfamiliar with the facility and would need to rely on manuals and site plans in the event of an emergency. **There is no mention of training or retraining.** NYS Department of Labor has said they will help create customized transition plans for each worker at Indian Point. How many of the approximately 700 remaining staff will be retained? Is there a department by department break down of number of employees, union and non-union that can show segment areas of employment for just transition and retraining? What about the security force; the electrical workers, maintenance staff, etc.?

3.0 SCHEDULE OF PLANNED DECOMMISSIONING ACTIVITIES

Timeline: The PSDAR includes a chart on page 16 with the schedule of planned decommissioning activities. Demolition continues through 2031, site survey and approval goes to mid 2032, site restoration continues until sometime after 2034, spent fuel stays onsite until 2062, after which there is a decontamination of the spent fuel storage pad, a final site survey and license transfer to another owner. The narrative contains many unknowns, and the PSDAR itself is subject to change. The IP PSDAR timeline says the spent fuel will be stored onsite until 2061. Site restoration is planned to continue through 2033. This means the full site would not be released for redevelopment until sometime after 2061. The plan is based on the possibly unlikely assumption that DOE will be accepting spent fuel in 2030, which may prove to be faulty. If the DOE is not able to accept spent fuel stored on site at IP at the appropriate time (Holtec anticipates the end of 2061 or potentially earlier), who then will be responsible for spent fuel storage management at IP?

4.0 ESTIMATE OF EXPECTED DECOMMISSIONING AND SPENT FUEL MANAGEMENT COSTS

Specific cost estimates are \$598 million for IP-1, \$702 million for IP-2 and \$1,002 million for IP-3, totaling \$2.302 billion.

Exemption for transfer of fuel assemblies to dry cask storage. This is a cost of operation, not decommissioning and should be borne by Entergy or Holtec, if license is transferred.

Decommissioning Trust Fund: Will the Decommissioning Licensee reimburse the Decommissioning Trust Fund (DTF) the amount that they eventually receive from DOE for onsite waste storage and management?

Background: In 2012 the nuclear industry won a court case that gave the decommissioning licensee the right to obtain funding for nuclear waste management because there is no national repository. This is the basis of Holtec's application to the NRC for an exemption to use the DTF for nuclear waste management. However, the licensee can eventually receive 95%-98% reimbursement from DOE for the nuclear waste management.

Revenue from DoE: By keeping any funds from DTF, Holtec will profit from money ratepayers invested over many years to ensure the safest possible decommissioning. If DTF is insufficient to complete decommissioning **who will cover the balance?** What assurances are there that Holtec will take responsibility if cost estimates are exceeded?

Holtec's PSDAR says there is enough money in the Decommissioning Trust Fund, including enough to deal with spent fuel. However, their plan is to then sue DoE to recover the money they spend on spent (but still highly radioactive) fuel management, because DoE has not met their obligation to provide a repository for storing the waste. If Holtec does not put the money it recovers from DoE back into the trust fund; it will keep it for profit, and the ratepayers' investment will not be available for its intended use. Since the decommissioning timeline at Indian Point has gone from Holtec's original estimate of 7-8 years to 15 years, the spent fuel management budget will run into a significant portion of the trust fund. If Holtec were to receive \$25,000,000 per year for just the 15 years (or more) it will take to decommission Indian Point, that would come to \$375,000,000, leaving about \$1,800,000,000 in the DTF, which by their estimate would be insufficient to properly remediate the site.

There is no money detailed in the cost estimate for specific site decontamination. There is a reference to soil removal down three feet relative to the buildings and whatever radiological contamination is in the physical structures and pieces of the reactor systems.

SSDCE, p. 106: If funding assurance demonstration shows that the NDT's (Nuclear Decommissioning Trusts) are not sufficient, then an alternative funding mechanism allowed by 10 CFR 50.75 (e) and the guidance provided in regulatory guide 1.159 (reference 13) will be put in place. (Reference 13 - "Assuring the availability of funds for decommissioning nuclear reactors"). What does this mean?

The **Federal Stranded Act** will be critical in helping communities, but money received through this act should be used solely at the Indian Point site, and should not go to profit Holtec.

If there is a pool or cask incident, this could bankrupt Holtec. That would pause the entire decommissioning process indefinitely.

ALARA: The whole concept of "As low as reasonably achievable" is critical but a clear definition has not been included. The site decontamination plan focuses on buildings, internal equipment and pipes, throughout the documents, but not on other forms of contamination to soil, groundwater or air.

Financial Sufficiency: Given their history (cite most recent case), Holtec should be required to demonstrate financial sufficiency as a condition of the license transfer.

5.0 ENVIRONMENTAL IMPACTS

5.1.1.1 Onsite Land Use: New dock (See above)

Soil Removal: The IP PSDAR says "During demolition, above-ground structures will be removed to a nominal depth of three (3) feet below the surrounding grade level." However, IP soil contamination and

groundwater contamination goes a lot deeper than that. At Yankee Rowe, contamination of soil and groundwater went down 300 feet, yet they used a "derubblization" approach that scraped off the top few feet of topsoil and called it remediated. Radioactive and toxic contamination of the soil and water was left after decommissioning, and Rowe has the fourth highest cancer rates in Massachusetts. See https://www.eesi.org/files/Nuclear_Plant_Decommissioning-Backgrounder.pdf

5.1.2 **Water use. Radioactive decay** -- What is the actual rate of decay in the fuel pools; in the groundwater?

5.1.4 **Air Quality** -- PSDAR cites "Small impact as per GEIS". We need experts to evaluate plans for baseline and ongoing monitoring. A generic EIS is insufficient when people's health is at stake.

What steps will be taken to reduce the release of radioactivity or dust from deconstruction?

5.1.8.3 **Public dose: Groundwater remediation is Monitored Natural Attenuation (MNA)** -- as in slow migration and discharge of radioactively-contaminated water into the Hudson River via fractured bedrock under the plant. Indian Point also has documented contamination of groundwater above drinking water standards, which includes tritium (radioactive water), Strontium-90, Cesium-137 and other highly dangerous radioisotopes.

The PSDAR indicates Holtec isn't going to do anything to actively remediate the radioactive waste leaking into the groundwater and the Hudson River, other than to just wait and watch: "A plume of radiologically-contaminated ground water associated with the IP1 and IP2 spent fuel pools was discovered in 2005, fully investigated and subject to an ongoing Long-Term Monitoring Program (LTMP). The primary contaminants in the plume are tritium and strontium-90. **The selected remedy is Monitored Natural Attenuation (MNA)** being addressed under the oversight of the NRC. NRC has concluded that the LTMP has been effectively implemented and conforms to regulatory requirements that protect public health and safety and the environment (SEIS, Vol.5; Reference 16). HDI will continue the LTMP, including provisions of the program intended to detect inadvertent releases that may affect groundwater, until the objectives of the selected MNA remedy are achieved."

5.1.9 **Radiologic Accidents: San Onofre** is an example of what can and has gone wrong. Thin-walled canisters have been scratched and gouged when transferred from fuel pools to casks. In one case a canister got caught while being lowered into the storage cask and was dangerously suspended for hours. Holtec did not report this occurrence. It became known only when a whistleblower discussed the incident at a public hearing. This is an example of why we question the trustworthiness of this company to be honest about potential and actual problems at Indian Point, and why many oppose the License Transfer Application from Entergy to Holtec/HDI.

5.1.13 **Environmental Justice (EJ):** Clearwater filed an extensive EJ contention in the IP relicensing case. Holtec should cite and evaluate if there are any other disproportionate impacts on communities of color, low income or other disadvantaged or vulnerable communities -- beyond what Clearwater has already documented and ASLB specifically acknowledged as valuable information to complete the public record.

5.1.17 **Transportation:** A portion of nuclear waste will be removed by barge and transported to an appropriate site to be transferred to rail cars or trucks. Where? The destination is not specified.

Proposed Transport by Barge: Will Holtec need to construct a new dock? How much weight will the existing dock bear? What is the weight of the crane plus cargo?

- **For deconstruction/demolition -- larger components**
- **Fuel assemblies: For transport of casks in canisters when DoE "takes ownership"**

Holtec envisions shipping the larger components via barge, subject to a Waste Management Plan they haven't written yet: "The waste transportation process will be fully defined in the WMP to include the number of shipments, the disposal facilities and applicable requirements. HDI may elect to ship large plant components by barge." Clearwater and many others are concerned about the safety of barges loaded with decommissioning waste being transported down the Hudson. Accepting an unwritten plan is dangerous in the extreme — what if the proposal is not acceptable, and that is not discovered until decommissioning is already in process?

We believe that Holtec would have to build a new dock at IP to support cranes and heavy equipment to load the barges. There are no contingency plans for the accidents that could happen. Holtec has not specified the proposed route, whether the barge would go to the Port of Newark or other railheads, either upstream or downstream, or how close it would come to NYC. We don't know whether the rail line from the Port of Newark or other railhead could carry the weight -- this is very questionable. In the case of Oyster Creek, the public was not informed about transport decisions. The Department of Homeland Security, NJ police and DEP meet together on these issues, but don't allow public observation and don't reveal transport routes. Oyster Creek citizens report that this has evolved into a general pattern of secrecy and lack of transparency around disposition and transport of the waste. We need to ensure that this pattern is not repeated -- that all relevant information is shared with communities through which material is transported, especially all first responders and all Community Advisory Panels established in these communities.

In IPEC SSDEC, p.67, Waste Transport, specifies that Class A, Low Specific Activity and Contaminated object classes would be removed by truck, barge or rail, while Class B, Class C, Greater than Class C (GTCC), hazardous and mixed waste removal would be transported by truck, as would spent fuel to the DOE, when and if is ready to receive it.

- What routes would be used and what dangers would truck or other forms of transport pose to the population along these routes?
- Are first responders in all of those communities trained and prepared to deal with any potential accidents?
- If not, what responsibility does Holtec or any transportation entity have for ensuring public and environmental safety?
- Even if removed from the IPEC site by barge, are the rail or roadways safe for transporting the weight, including bridges and overpasses from port to destination?
- Where will the fuel assemblies go? There is no discussion of interim or permanent off-site disposal sites for high-level radioactive waste.

Exemptions and Revisions: In the case of Oyster Creek (OC), Holtec revised its PSDAR several times, so this first report is not really a blueprint for its intentions at IP. Concerned citizens from the Oyster Creek area report successive versions of the OC PSDAR, in which Holtec reduced requirements and boosted its potential profits from the decommissioning trust fund from \$100 million to \$300 million. For example, **it abandoned responsibility for asbestos and soil remediation.** It cut the fire brigade budget in half. It reduced liability insurance from \$400 million to \$100 million. This sort of change should be prohibited without review by state and local governments, all Citizen Advisory Panels, and the NRC.

This Indian Point PSDAR **assumes Holtec will get certain exemptions from regulation**, but they haven't applied for most of them yet. Experience at other reactors shows that once licensees are at the stage of applying for exemptions, it's too late -- they are just waived through by the NRC as a matter of course, with serious consideration or input from independent experts. The time to raise issues about Holtec's assumptions/intentions is now, before they start applying for the exemptions. Exemptions allowed at other reactors must not be assumed to be acceptable at Indian Point, but must be evaluated on the merits in relation to our specific site and situation.

One exemption Holtec is already requesting is to relax regulations re: **condensate tanks**.

Asbestos: The IP PSDAR says Holtec will remediate asbestos, but they reneged on that in the case of Oyster Creek. Indian Point is known to have extensive asbestos contamination.

INDIAN POINT ENERGY CENTER (IPEC) SITE-SPECIFIC DECOMMISSIONING COST ESTIMATE (SSDCE)

ISFI: On pages 69-77, Site Specific Decommissioning Cost Estimate, in the Period 5 Activities column, "On-Going ISFI Operations" has no cost associated with it on any page.

Maps would help clarify several important aspects of the PSDAR:

- IPEC Site: showing IP-1, IP-2, and IP-3 buildings, the current and proposed Independent Spent Fuel Storage Installations (ISFSI), docks and roads
- The path of the Algonquin Pipeline under the plant property
- Diagram of radioactive leaks through bedrock under the plant
- The multi-county region surrounding IP showing, among other things, the Emergency Planning Zone, seismic fault lines, and the wider path of the Algonquin Pipeline, and barge, rail and road facilities.

For more information on Nuclear Decommissioning and Holtec's track record, please see the [Fall 2019 Regional Nuclear Decommissioning Forum](https://www.clearwater.org/fall-2019-regional-nuclear-decommissioning-forum/): <https://www.clearwater.org/fall-2019-regional-nuclear-decommissioning-forum/> Pay special attention to f Rear Admiral Len Hering, Sr. USN (Ret.), safety expert from San Onofre, CA at 1:04:04 [Panel of Representatives from Nuclear Reactor Communities](#).



And today's WNYC article: [Is The Company Poised To Dismantle Indian Point Too Radioactive?](https://gothamist.com/news/company-poised-dismantle-indian-point-radioactive) <https://gothamist.com/news/company-poised-dismantle-indian-point-radioactive>

There are also two Congressional Briefings filled with related information at:

- June 16, 2018 Congressional Briefing: [Decommissioning Nuclear Power Plants: What Congress, Federal Agencies and Communities Need to Know](#)
- May 13, 2019 Congressional Briefing: [Decommissioning: A New Era in the U.S. Nuclear Power Industry; a Critical Need for Congressional Oversight](#)

Respectfully submitted,

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