



Department of Public Service

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September 1, 2022

VIA EMAIL

Hon. Michelle L. Phillips
Secretary to the Commission
3 Empire State Plaza
Albany, NY 12223-1350

Re: Matter No. 21-01188 – In the Matter of the Indian Point Closure Task Force and Indian Point Decommissioning Oversight Board.

Dear Secretary Phillips:

Please accept for filing in the above-captioned matter, the following documents:

- (1) Email from Holtec responding to questions from DOB Board member Richard Webster (PDF p. 2) dated August 30, 2022;
- (2) Email from Holtec responding to questions from Hudson River Sloop Clearwater (PDF p. 5) dated August 31, 2022;

Should you have any questions regarding this filing, please contact me.

Respectfully submitted,

Tom Kaczmarek
Executive Director
Indian Point Closure Task Force
Indian Point Decommissioning Oversight Board

From: [Richard Burroni](#)
To: [Richard Webster](#)
Cc: [Kaczmarek, Thomas \(DPS\)](#); [Congdon, Thomas \(DPS\)](#); [David Lochbaum](#); [Richard Burroni](#)
Subject: DOB Questions
Date: Tuesday, August 30, 2022 7:40:53 AM
Attachments: [image001.jpg](#)

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Mr. Webster,

Please note the following in response to your questions from the Decommissioning Oversight Board Meeting on July 27th ; I paraphrased where needed:

1. **Your first question centered around High Burn-up Fuel and why are we able to remove this type of fuel earlier than in years past.**

Answer: As I stated at the meeting, the use of Metamic insert material in the Multi-Purpose Canister (MPC) allows us to cask this fuel earlier than we use to do previously.

2. **As a follow-up, you asked what is Metamic and how does it work (I also expanded the answer below to describe how the fuel is cooled within the system)**

Answer: Metamic is an aluminum boron carbide metal matrix composite material that has a high cross section for neutron absorption. Metamic is also stable (i.e. – maintains its integrity) at higher temperatures than steel, allowing for more heat dissipation (generation) created from the decay of fission products. Metamic material does a better job of controlling higher temperatures than steel.

Assisting with the cooling of the spent fuel is helium. The Multi-Purpose Canister is pressurized with Helium which transfers heat from the fuel assemblies to the shell of the MPC. The vents provided in the HI-Storm System then create a chimney effect (convection cooling) that removes the heat generated by the assemblies. The presence of Helium, which is an inert gas, also prevents oxidation and corrosion induced degradation of the spent fuel assemblies.

As a side note: Part of the discussion at the meeting inferred that if a

canister were to leak, the combination of oxygen and helium would result in an explosive mixture – since helium is an inert gas it will not be the catalyst for an explosion. Further, as Mr. Lochbaum pointed out, the fuel being at a hotter temperature will result in a higher pressure in the MPC therefore there will be no driving force to allow Oxygen into the MPC and there will be very little increase in radiation exposure with no explosion. Last but not least, and this is an important note, there is no history of any MPC manufactured by Holtec that has leaked.

3. **Your next question centered around “damaged fuel”. I assume this was based on the LAR / Exemption request we filed with the NRC. We further discussed why we need the Exemption request, what are the current limitations with casking failed fuel, what are the types of fuel failures, and how is damaged fuel casked.**

Answer: The current safety evaluation for the casks allows for the casking of non-damaged fuel, non-damaged fuel with a secondary or primary source, and damaged fuel. (Damaged / Failed are the same here) What it doesn't allow is the casking of damaged fuel that contains a source. Primary and secondary sources were used during reactor operation to initiate and control the fission process in the reactor. Due to compatibility issues of the sources with the existing fuel, these source do not fit in existing non-damaged fuel assemblies. There are 13 of these types of assemblies and as I stated at the meeting, these assemblies can not be casked with our current safety analysis associated with the Hi-Storm system, thus the need for the Exemption.

A fuel assembly can be classified as failed for reasons other than the breach of the cladding; these include assemblies that were not tested for failure due to its location in the spent fuel pool, inability to test due to interferences within the pool, a grid strap not in the correct position, etc., etc. In short, although we may classify a fuel assembly as failed, it does not necessarily mean that the zirconium cladding which contains the fuel pellets has been breached.

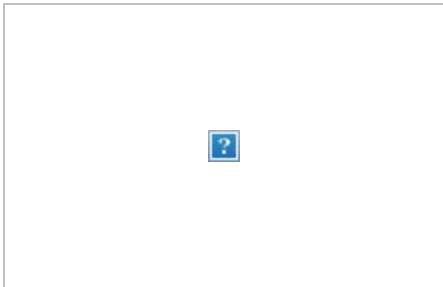
For casking purposes, an assembly noted as failed is placed in a Damaged Fuel Canister made of stainless steel, then inserted into the MPC thus affording the additional protection required.

If you have any more questions as a follow-up to the above, or anything else you would like to know about, just let me know.

Regards,

Richard J. Burroni

Site Vice President - Indian Point
Holtec Decommissioning International
450 Broadway, Buchanan, NY 10511
Phone: +1 914 254 6705
r.burroni@holtec.com
www.holtec.com



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From: [Richard Burroni](#)
To: mannajo@clearwater.org
Cc: [Richard Webster](#); [Victoria Leung](#); [Kaczmarek, Thomas \(DPS\)](#); [Congdon, Thomas \(DPS\)](#); [Don Mayer](#); [Richard Burroni](#)
Subject: Response to Manna Jo Greene email dated 8/20/"22
Date: Wednesday, August 31, 2022 2:26:27 PM
Attachments: [FW Updated - DOB 03-17-22 - NYS Pollutant Discharge Elimination System.msg](#)
[Report on water filtration.msg](#)

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Hi Manna Jo,
In response to your email, please note the following:

- The presentation slides from the March 19th DOB meeting pertaining to the release of processed waste from IPEC is attached. Based on additional information there have been some changes made.
- As you can see below, your questions (and the associated answers) are broken out based on the text of your email. In addition, I have included the link to the NRC website where you can obtain a full copy of the Indian Point Energy Center 2021 Annual Radioactive Effluent Release Report. The tables referenced in some of the responses are from the report specifically.
- The second attachment is your original email

With that said, note the following question from your email and our response:

1. Which Isotopes are able to be filtered out of the water before it is released into the Hudson River and which are not.

- All radioisotopes can be filtered with the exception of tritium which is consistent with Nuclear practices across the country.

2. For those that are able to be filtered, how effective is treatment?

- Plant waste processing systems are routinely maintained by operations and chemistry personnel to ensure that the efficiency of the removal filtration systems is optimized. This ensures that the actual dose compared to off-site regulatory limits remains well below guidelines.
- Consistent / repetitive sampling of the effluent combined with changing the filtration media ensures the effluent concentrations are maintained low.

3. How much of each isotope is able to be filtered out of the water before it is discharged?

- Filtration removal efficiencies range generally between 90% to over 99.5% of the isotopes being removed.
- The way we assess the efficiency of the removal process is evaluation of the releases vs the limits to ensure we remain a small fraction (<1%) of what the NRC requires.

4. It is important to know that they meet NRC standards, but people are asking for real numbers.

- The way the nuclear power industry is required to manage the amount of radioactivity that can be released is to ensure that we remain well below the effluent release limits in the NRC regulations. The limits are presented in terms of dose (e.g. units of mrem).
 - To explore “real numbers” one can refer to the Effluent Release Report. The report provides numbers that describe the amounts and isotopes released both in terms of activity amount in curries (e.g. Ci) and dose (mRem).

To aid in reviewing the data in the report:

- Table 6-1 Summation of Dose Assessments indicates that the total dose associated with liquid releases (i.e. after filtration) is less than 1% of the annual NRC limit of 3 mrem. Note, *this includes tritium which is not affected by filtration as previously noted*.
In 2021 for example, the dose reported in Table 6-1 for liquid releases to the Hudson is 0.014 mrem which is less than 1% of the 3 mRem limit
- Tables 4.2, 4.3 and 4.4 provide the names of the isotopes measured and reported as well as the amount of each isotope released. The sum of all the radionuclides released as listed in these tables results in the doses reported in Table 6-1.

5. The link to the Annual Radioactive Effluent Release Report at NRC.gov is: [Indian Point Energy Center - Resubmittal of the 2021 Annual Radioactive Effluent Release Report \(nrc.gov\)](#)

If additional information, or interpretation of the report is needed for clarity, I would like to have a meeting , preferably face to face, to accommodate discussion. Let me know if this is needed.

Respectfully,

Richard J. Burroni

Site Vice President - Indian Point
Holtec Decommissioning International
450 Broadway, Buchanan, NY 10511
Phone: +1 914 254 6705
r.burroni@holtec.com
www.holtec.com



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State Pollutant Discharge Elimination System



N.Y. State DEC

DEC On October 22, 2021 the NYS DEC received an application to renew the SPDES permit for IPEC from Holtec. This was required to be submitted 180 days prior to the expiration of the existing permit date of April 30, 2022.

There was also a request to transfer the permit from Entergy to Holtec which was granted on 2/22/'02.

Based on its review, the NYS DEC has informed us that the renewal application was timely and sufficient. (had to be submitted greater than 180 days from expiration) Therefore, in accordance with the State Administrative Procedures Act, the current permit will remain in effect beyond its current expiration date (April 30th) until the Department issues a decision on the renewal application.

The NYS DEC will undertake a full technical review of the SPDES permit during its review of the renewal application to determine the need to incorporate new permit requirements under the Federal Clean Water Act and applicable state regulations.

Nuclear Regulatory Commission

The controlled release of effluents within specified limits has been an established part of a normal nuclear facility's operation, and the NRC's regulations and licensing reviews for the facility take into account such releases as part of the NRC's safety and environmental determinations.

Processed Waste and Unprocessed Waste have been methodically discharged to the river in accordance with all state and federal requirements since the units have been in service.

Unprocessed Wastewater does not require any filtering since it is clean water, however it is continuously monitored. It includes Steam Generator Blowdown (no longer in service) and the Unit 1 Sphere Foundation Sump (natural spring under the Unit 1 Sphere)

Processed Waste will currently be from water in the Spent Fuel Pools and the Reactor Water Storage Tanks (RWST). Processed Waste is also generated by the North Curtain Drain System which is due to past operating history of the Unit 1 Spent Fuel Pool which contains cesium and strontium.

State Pollutant Discharge Elimination System



All water in the Spent Fuel Pools, RCS and RWST are one in the same, they effectively communicated during refueling outages in the past. The water in the Spent Fuel Pools is constantly circulated and filtered. Its clarity allows for the off-load of fuel without obstruction.

No water from the Processed Waste Streams are directly discharged to the river. With the exception of the North Curtain Drain, this water is filtered, housed in collection tanks, circulated, analyzed then discharged. See attached simplified diagram. North Curtain Drain water is filtered and analyzed prior to discharge.

The total number of gallons between the RWST's and the Spent Fuel Pool is ~1.3 million gallons. This water will not be discharged until all fuel is casked and segmentation efforts are complete. Note that during years of operation, total gallons discharged to the river (Processed and Unprocessed Waste) averaged around 55 million gallons.

Variables at present time and future are the North Curtain Drain and Sphere Foundation Sump which are weather dependent.

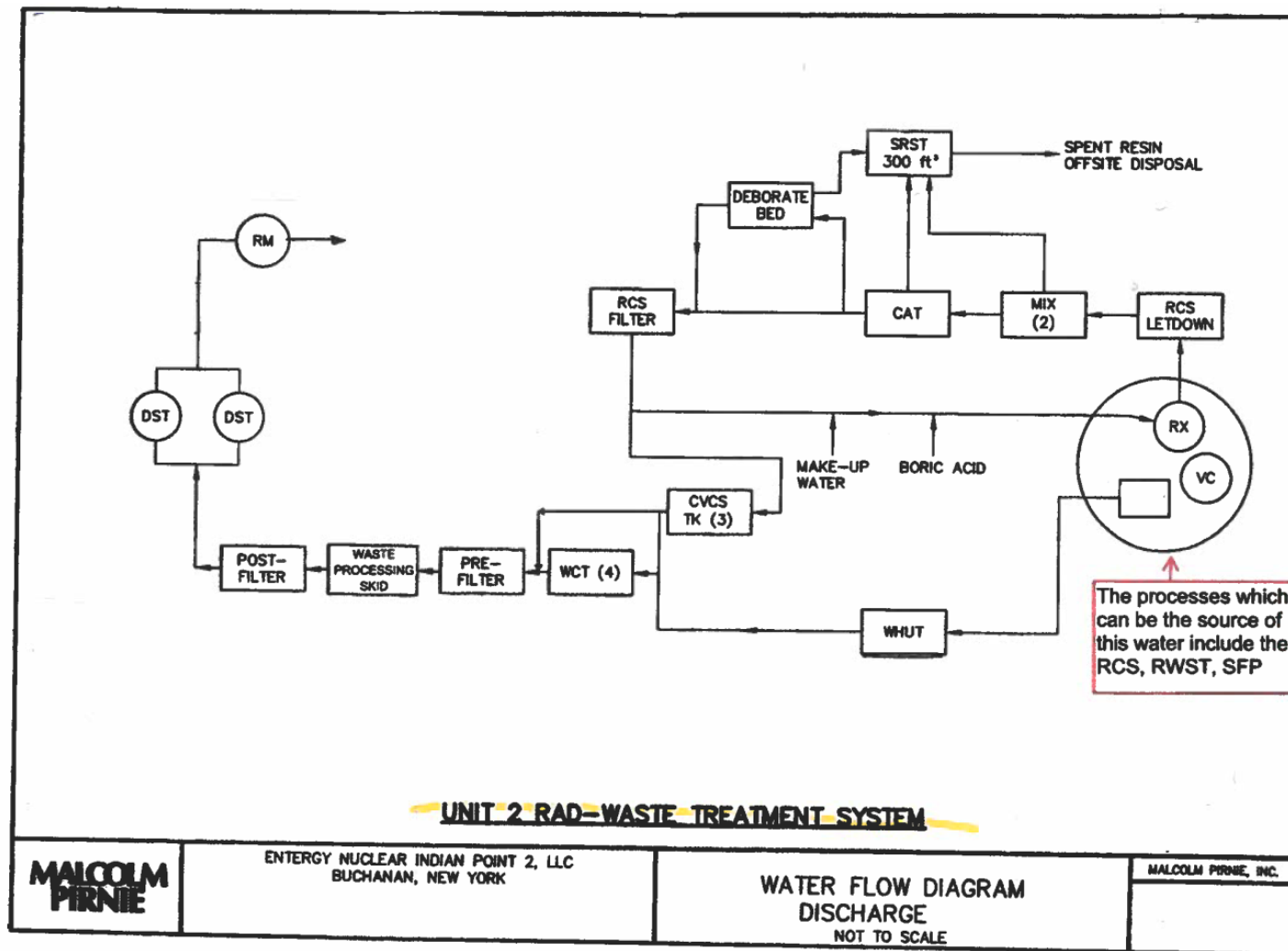
The SPDES Permit requires the monitoring of boron, lithium., oil & grease along with total suspended solids.

The principle radionuclides that are monitored include tritium, iodine, cobalt, cesium, strontium, nickel, manganese, iron, silver and antimony.

Our liquid discharges of radionuclides do not exceed 1% of the allowable NRC and EPA limits and 1/10th of 1% for ground water discharges. NRC limits for radionuclides is 3 mr/yr. (.003 rem/yr)

We are required to submit to the NRC an annual radiological environmental operating report with the results of the Radiological Environment Monitoring Program (REMP) and a radioactive effluent release report every year, both of which are publicly available.

State Pollutant Discharge Elimination System



Attachment 2

From: [Manna Jo Greene](#)
To: [Richard Burroni](#); [Stephanie Bentley](#)
Cc: [Richard Webster](#); [Victoria Leung](#)
Subject: Report on water filtration
Date: Saturday, August 20, 2022 12:17:59 PM

You don't often get email from mannajo@clearwater.org. [Learn why this is important](#)

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Holtec's servers with malicious viruses.**

Rich, thank you very much for a very informative tour of Indian Point as it is being decommissioned. It is very different to see it in person than to imagine what that reality is.

During the meeting we had with other staff members I asked about the process for treating water, to which you responded that you had explained at a Decommissioning Oversight Board meeting previously. If you could please send those slides, I would be most appreciative.

There was also mention of a report that detailed this information. One of the staff members gave an overview, but it was not specific as to which Isotopes are able to be filtered out of the water before it is released into the Hudson River and which are not. For those that are able to be filtered, how effective is treatment? It is important to know that they meet NRC standards, but people are asking for real numbers. How much of each isotope is able to be filtered out of the water before it is discharged?

Can you please provide a link to or copy of that report?

Many thanks for your help with this request.

Manna

Manna Jo Greene, Environmental Director
Hudson River Sloop Clearwater, Inc.
724 Wolcott Ave., Beacon, NY 12508
845-265-8080 x 7113 Fax: 845-831-2821
845-807-1270 (cell)
845-687-9253 (home office)
www.clearwater.org

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