NEW YORK STATE | Department of Public Service

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July 28, 2023

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 June 15, 2023 Indian Point Decommissioning Oversight Board meeting transcript. Should you have any questions regarding this filing, please contact me. Thank you.

Respectfully submitted,

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

6/15/2023 - Indian Point - 21-01188

NEW YORK STATE

DEPARTMENT OF PUBLIC SERVICE

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

JOINT MEETING

DATE: June 15, 2023 at 6:00 p.m.

VENUE: Zoom

Reported by Danielle Christian

6/15/2023 - Indian Point - 21-01188

(The meeting commenced at 6:00 p.m.)

(PLEDGE)

MAYOR KNICKERBOCKER: That is our tradition here in the village that we do the pledge before every meeting. And I also want to mention I have Trustee Dan Stewart here with us this evening. And Tom, I'm going to turn it over to you.

CHAIR CONGDON: Okay, thank you very much, Mayor. My name is Tom Congdon. I'm the chair of the Indian Point Closure Task Force and the Decommissioning Oversight Board. Welcome everyone. I'll begin tonight with a roll call. Senator Pete Harckham?

SENATOR HARCKHAM: Here.

CHAIR CONGDON: Assemblywoman Dana LEVENBERG, I think is on her way.

MS. SPEAR: She's -- yeah, she's parking.

CHAIR CONGDON: She's parking, great. Excellent. John Sipos?

MR. SIPOS: Here.

CHAIR CONGDON: Tom Kaczmarek D.P.S.?

MR. KACZMAREK: Here.

CHAIR CONGDON: Kelly Turturro --

MS. TURTURRO: Here.

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CHAIR CONGDON: -- Department of Environmental Conservation. Alex Damiani, Department of Health?

MR. DAMIANI: Here.

CHAIR CONGDON: Rachel Adler, Department of Labor?

MR. CAREY: She's downstairs.

CHAIR CONGDON: Down in the overflow room, thank you. Mark Pattison, Department of State, may be online? Mark Massaroni, Department of Tax and Finance? Also potentially online. Jennifer Wacha, DHSES? Tom Scaglione --

MS. WACHA: Hi.

CHAIR CONGDON: -- E.S.D.? Thank you, Jennifer. Tom Scaglione?

MR. SCAGLIONE: Here.

CHAIR CONGDON: I know Joe Leary sent a replacement person from New York Power Authority. Just introduce yourself.

MR. LEARY: Joe Leary.

CHAIR CONGDON: Thank you very much. Alyse Peterson from NYSERDA?

MS. PETERSON: Here.

CHAIR CONGDON: Our environmental technical

experts, and I'll start with Dave Lochbaum, who we know is online?

MR. LOCHBAUM: Yeah, I'm here in Chattanooga.

CHAIR CONGDON: Thank you, Dave. Dave made it as far as Atlanta today I believe, and flights were canceled. Sorry for the difficult travel today. But thank you for joining via the virtual. Richard Webster, Riverkeeper?

MR. WEBSTER: Yeah, I'm here.

CHAIR CONGDON: Hi, Dana, welcome.

MAYOR KNICKERBOCKER: You're way up here.

CHAIR CONGDON: Right up here. For Rich Becker, I think we have Jim Creighton?

MR. CREIGHTON: Yeah, Thank you.

CHAIR CONGDON: Welcome. Mayor Knickerbocker?

MAYOR KNICKERBOCKER: Here.

CHAIR CONGDON: Susan Spear from --

MS. SPEAR: Here.

CHAIR CONGDON: -- County Executives Office. Catherine Borgia? And I know Dr. Lauro from Hendrick Hudson School District couldn't be with us tonight. Our Labor Representatives Bill Smith, --

MR. SMITH: Here.

CHAIR CONGDON: -- Tom Carey --

MR. CAREY: Here.

CHAIR CONGDON: Is Lou here, Lou Picani?

MR. CAREY: No.

CHAIR CONGDON: Okay. And that is our roll call. Did I miss anyone? Okay. I'm just going to go over a few meeting logistics. If we could go to the next slide, please. Oh, if you could run the slides.

MR. KACZMAREK: Yeah.

CHAIR CONGDON: Sorry.

MAYOR KNICKERBOCKER: He's trying to do two things at the same time.

CHAIR CONGDON: So it's important for the in-person folks to please speak into the mic. This will ensure that our court reporter gets an accurate transcript. And it will ensure that people tuning in virtually can hear us.

The panelists who are joining by zoom, please keep your mics muted until you want to speak. And for the Zoom participants, please reserve the chat feature for reporting technical issues, such as audio or visual issues, and only use the Q&A field

for questions because that's the only place we will be able to capture them and log them for handing out to our experts to answer in between meetings.

All Panelists and participants please remember to indicate your name before speaking. Next slide please. So as is often the case with these meetings, we are holding a joint meeting. This is of the Indian Point Closure Task Force, as well as the Decommissioning Oversight Board. The membership of the two entities overlaps entirely with the exceptions of Dave Lochbaum and Richard Webster who serve exclusively on the Decommissioning Oversight Board.

Very quickly one slide for some task force business, which, you know, the task force for those of you tuning in more recently to these meetings, was focused since 2017 on largely the economic impacts that the closure had on the community and the taxing jurisdictions. We also worked on developing projects to be funded out of the closure settlement fund, $15 million fund set aside by Entergy.

Just a very quick update, last meeting in April, we announced some adjustments to the grants that were made out of that fund. And I'm pleased to

report that contracts have been signed for two out of the three updates.

First, the 250,000 for the plumbers and steamfitters to do welding training. So thank you for your partnership Tom Carey. And we're also pleased that we worked with the B.V. elementary, actually the Hendrick Hudson School District to sign a contract for the $500,000 they will use to perform an environmental assessment at B.V. Elementary.

And we're working together with the town and the village to amend their existing contract for the 250,000 adjustment. And that's going along well with and -- and we're making progress there. So next slide please. Switching over now to the Decommissioning Oversight -- Oversight Board business. We have a full agenda again this evening. I know a number of us have a hard stop. And I'm -- I'm going to endeavor to keep us on schedule.

We have presentations planned by the Nuclear Regulatory Commission, we're really pleased to have you back with us, joined us in April. And there were a number of questions that emerged from the April meeting that we thought would merit, you know, a follow-up presentation. So we'll be hearing

more about the N.R.C. radiological limits and the process by which those limits are regularly reviewed. Getting a little feedback, Tom.

Okay. We're getting a little feedback. Okay. We will also hear from N.R.C. an update on their oversight role, and specifically with respect to when violations are found, how they go about their enforcement activities. We will then turn to David Lochbaum, our independent technical expert on the D.O.B. Dave has refined the options analysis with respect to the disposal methods for the wastewater on site.

As folks recall, Dave presented a detailed presentation of the options analysis in February. Since that time, I think there have been -- there's been a larger focus on an option that is storage on site. And so Dave did a deeper dive on that option. And he's going to present those findings.

What Dave did with this -- this analysis is, he also provided it to a number of peer reviewers, other experts that reviewed his work, provided comments, and Dave responded to those comments as part of his presentation. So we're looking forward to that.

We're also going to hear from Department of Health on a protocol they've been working on. Assuming the discharges go forward, we've been working to create a protocol whereby the State would independently sample the wastewater prior to discharges recommencing. And so we'll be hearing from them an update on how that would work. We'll then turn to a State oversight update.

The agencies involved in the State oversight aspects of decommissioning are doing a lot that, you know, in -- in -- in past meetings, we haven't had a chance to get to so I'm hoping we have sufficient time to be able to hear from them. Thank you for that. We also have an operational update from Holtec. And -- and we'll have discussion throughout. Next slide please.

So before I turn it over to N.R.C., I just want to say a word of thanks. We have a number of State agency, public servants who have had to work overtime in answering all the questions we're throwing at them, they’re absolute professionals at the D.E.C., at the Department of Health, at the Department of Public Service, NYSERDA and -- and all the agencies involved in the D.O.B., just have

enormous respect for all the work everyone's doing.

And as well, the federal officials who are here with us today. There have been a lot of meetings that we've had, between these public meetings, where we've posed a number of questions to our federal partners. They've been extremely responsive to our questions and -- and we're grateful for the partnership.

And lastly, I want to do a special shout out and thank David Lochbaum, who is unpaid, volunteer, independent expert, who is dedicating an enormous amount of time to helping us navigate and understand the important issues at play. So my gratitude to all of you, and my gratitude as well to Mayor Knickerbocker for hosting us this evening.

MAYOR KNICKERBOCKER: My pleasure.

CHAIR CONGDON: While your facilities are excellent, and you have a spillover room, I am acknowledging it's -- we have spillover, we have an overflow crowd. I know many people wish they had seats. And so to folks that are in the standing room only, I want to let you know we will look for larger spaces for future meetings, and appreciate your attendance tonight. So with that, Bruce Watson from

the U.S. N.R.C.

MR. WATSON: Mic on.

MAYOR KNICKERBOCKER: Is your mic on?

MR. WATSON: I really guess it's on.

MR. SIPOS: Get in closer.

MR. WATSON: And I will get in closer. Okay, there we go. Well, first of all, let me say thank you for inviting me. It's been, I think a couple of years since I was last here. We held a P.S.D.A.R. post shutdown decommissioning activities report here in the local area post COVID. So I think it was our first N.R.C. public meeting post Co -- post COVID. And so we were happy to be here then and get that public meeting completed.

As mentioned, I'm Bruce Watson. I'm with the Office of Nuclear Materials Safety and Safeguards in the Division of Decommissioning Uranium Recovery and Uranium -- and Waste Programs. As a matter of a thumbnail sketch of myself, I'm -- have been a health physicist for over 40 years, over 35 years as a certified health physicist. I'm certified by the American Board of Health Physics.

I was the -- I operated nuclear power plants for 20 years and most of that was a -- as a

Radiation Protection Manager at Calvert Cliffs. So -- and then after that I spent some time with the Department of Energy decommissioning the weapons complex in particular in the nuclear weapons area.

And after that, I spent some time doing some domestic and international decommissioning work, and have spent the last 20 years with the N.R.C. doing both decommissioning domestically oversight from a regulation standpoint and working with the international community.

So -- so again, I thank you for the opportunity to speak here tonight. And I'd like to provide you with some information on the radiation -- N.R.C.'s radiation dose standards.

Next topic -- next page. These are the general topics I plan to discuss with you this evening. Our topic is dose -- N.R.C.'s dose standards and the relevance of those standards in the decommissioning projects such as Indian Point. I also plan to discuss liquid effluent discharges since it's a subject of high public interest.

Next slide, please. The N.R.C. regulations are entitled 10 Code of the Federal -- Federal Regulations Part 20. The last major revision of the

regulations was in 1991. I'm sure you're wondering why the regulations have not changed over the past few decades.

Well, the reason is -- is not much has changed in the Radiation Science area, even though there are a significant amount of work on -- of ongoing work in this area by various U.S. and international experts.

Next slide, please. I provided you here a list of organizations and their reports which formed the basis for the radiation protection standards. N.R.C. helps businesses review all new technical reports as consideration for revising the regulations in our standards for the -- in -- in our regulations.

So over the years, the N.R.C. also has been well-represented with -- at the I.C.R.P. by a fellow -- by my friend -- an old friend of mine, Dr. Donald Cool, who was with the N.R.C. for many years and retired, and recently he has announced his retirement as the vice chair of I.C.R.P.

Next slide, please. So the I.C.R.P. provides a system of radiological protection, and it's the world -- and provides the worldwide basis for all radio -- radiological protection standards.

And this is for protection of patients, workers, the public, the environment from ionizing radiation. These standards take into account all populations, including children, fetuses, and women.

So the N.R.C. did a thorough job of reviewing I.C.R.P. 103, and other published expert reports and one of items of interest that the -- the I.C.R.P. did not rec -- recommend was changing the public dose limit of 100 millirem per year. To put that in context, the average American is exposed to 620 millirems of radiation each year from both natural and manmade sources.

Natural sources include radon and -- and are in certain foods. While manmade sources involve nuclear medicine treatments, cellphone use, and other things.

Next slide, please. In 2012 the staff advised the Commission. Those are the people that are designated by the President and confirmed by the Senate to be Commissioners. They informed that -- they advised the Commission that the N.R.C. standards could be -- could be revised to the new dosimetry models based on the changes to the I.C.R.P. recommendations.

In response, the Commission determined that the N.R.C. standards that were presently in effect, were found to be -- provide reasonable assurance and protection of the public, and did not need to be revised based on the I.C.R.P. and other expert organizations recommending changes at that time. And this is still the case today.

In 19 -- in 2016, the N.R.C. Commission also reviewed this issue again, and came to the same conclusion that the current dose standards are adequately protecting the public health and safety, the environment. And so there we are.

One provision in the regulations I do want to remind everybody is that the -- the regulations require the practice of ALARA, which is as low as reasonably achievable. And actual doses in the industry are -- generally result in small fractions of the regulatory limits. These ALARA requirements are codified in Part 20, specifically in 10 C.F.R. 20.1101(b).

A good example of this -- of the -- good example of the ALARA principle is that even the regulatory limit of 100 millirems a year to the public -- even though the regulatory limit is 100

millirems to the public, the actual exposures to the public living in the vicinity of a nuclear power plant are less than one millirem per year.

So our review of our liquid release limits -- effluent releases from the Indian Point over the years indicate that they have been aligned and with the current regulations and these concerns -- these limits are conservatively set. Sorry, I'm skipping around here a little bit.

Next slide please. So what would it take for the N.R.C. to revise the regulations? Well, as shown in this slide, there would need to be a significant safety issue for the N.R.C. staff to recommend revising the agency's radiation standards to the Commission. The bottom line is that the I.C.R.P. and other experts change their recommendations.

They do it frequently, but not in any sub -- substantive manner that would warrant a change in the N.R.C. regulations. They may tweak a few things here and there, but the bottom line is, they're pretty much not much different.

With the recommendations that the I.C.R.P. and any other scientific body, N.R.C. is always

reviewing and considering the adoption of new dosimetry models. Such changes remain under ongoing review to -- in consideration, however, they're not changed in a significant way to warrant revising the regulations.

Next slide, please. I thought it would be good to recap the environmental regulations. As noted in this slide, E.P.A. rep -- E.P.A. -- U.S. E.P.A. Environmental Protection Agency regulates the environment, and the N.R.C. regulates all types of licensees using radioactive material, including nuclear power plants.

In general, though, the N.R.C. adopted the E.P.A. federal radiation protection guidance for environmental issues for radioactive discharges to the environment. The E.P.A. guidance was endorsed by the National Council on Radiation Protection and the National Academy of Sciences.

Next slide, please. The E.P.A. regulations are in 40 C.F.R. 190. In the E.P.A. regulations, the N.R.C. has set a drinking water concentration limit for tritium at 20,000 picocuries per liter. Consuming drinking water at this level of tritium for a year would result in individual -- in an individual

receiving about 4 millirem in one year.

The E.P.A. and the State's roles -- primary role in nuclear facilities is to regulate the non-radioactive releases from through the use of national pollution -- national -- always get this one mixed up. National Discharge Pollution Elimination System or N.P.D.E.S. permits. And I believe New York regulates -- provides that permit in -- in the State, right?

Next slide please. So as I mentioned, the N.R.C. regulates the radioactive effluent from nuclear power plants and does so by including environmental and -- environmental and effluent requirements in each of the State in each of the plant's license. Regional decommissioning inspectors are required to inspect the site's environmental and effluent programs at least annually.

In the licensing requirements, the plant owner, in this case Indian Point, Holtec is required to limit the liquid effluents doses to less than three millirem per year. These -- these releases are performed in accordance with the N.R.C. approved offsite dose calculation manual, which is publicly available.

Every nuclear power plant -- every nuclear reactor is -- licensee is required -- required to provide an annual report on the effluents from the plant. These reports are compiled by the N.R.C. and are made publicly available. And -- and in all cases, these liquid effluents are well below the N.R.C. and the E.P.A. limits.

Next slide please. One issue of public interest that I keep hearing is that -- is the water -- does decommissioning water change? Does decommissioning change the water? Well, the answer is -- in reality is, the water is the same as it was used during operations. So principally the answer is no.

The water is the same water used during operations to refuel the reactor, keep spent fuel pool cooled, and serve as a source of shielding the water -- water is served as a source of shielding for decommissioning the plants such as dismantling the reactor internals.

And of course during operations, the water is available for use in emergency situations. The major difference is -- in decommissioning is that the plant is no longer in operation, is no longer

producing neutrons. Therefore the fissioning has stopped, producing new fission products, and the impurities in the water are no longer being activated by the neutrons that were there.

So the only radioactive materials that are created into this water are the activities associated with decommissioning. So as the plant is the segmented and parts are cut up, the other probably some metal particulate matter that enters the water but those are filtered out, and they're fairly large particles. So there is some changes, but they're maintained and cleaned up.

Light-water reactors have been operating for almost 75 years. And in an -- in this water environment, just mainly water and metal. There are no new chemicals produced other than basic chemical compounds. And these behave as if they are a non-radioactive species if they enter the environment.

So we're not creating anything new. We're not doing any exotic organic chemistry that would create new compounds, it is basically water chemistry, and the nuclides behave as they would in a non-radioactive environment.

So another question. Next slide, please.

Another question I have seen is, does decommissioning change the liquid effluents? Well, pretty much the answer is no. As previously noted, the same water is -- was used that was used to operate the plant. The only significant difference of course is that the radioactivity is slowly being reduced after the reactor ceases operation, and enters the decommissioning phase.

The same slightly contaminated water that was used to cool the spent fuel is used to -- to -- to cool spent fuel until the spent fuel is transferred to the dry storage, and is also used as shielding as I mentioned, to dismantle the highly radioactive components in -- like such as the reactor internals. Well, when the water is no longer needed, the water is filtered and treated, and released in small batches using the same process that was used during operations.

In this case, to discharge the liquid effluents, the water is treated to reduce the level of contaminants consistent with the ALARA principle, and the water is sampled before it is discharged, and of course, it is monitored as it is discharged. Should any discharges exceed conservative set limits,

the release -- release will -- will alarm and halt the flow of the water being discharged.

Next slide please. So let's put tritium in perspective. Tritium or tritiated water is a natural occurring radioactive element produced in the Earth's upper atmosphere. Tritium can be found in low concentrations in lakes, streams, and even in some rivers. Tritium is produced by reactors in a very low concentration levels, and are released to the environment in fractions of the regulatory limit.

Tritium is used in medicine, industry, research, and in the defense complex. It is used in many applications such as exit signs and, you know, for its luminescence. Exit signs have sufficient quantity of tritium that are regulated by the N.R.C. under a specific license. Tritium does not bioaccumulate in plants, humans, or animals since it is water. Biological half-life with tritium in humans is about 10 days.

And of course, the tritium is dispersed in the human tissues and are cleared rapidly from the body since they are continuously replenished -- we -- we continuously replenish the water of our body on a daily basis.

Next slide please. So in closing, the N.R.C. radiation standards are adequately protective with the public health and safety and the environment, to ensure the radiation protection standards remain pro – protective of the public -- the public, the environment.

The N.R.C. continuously reviews, considers new scientific information provided from the experts such as the I.C.R.P. and N.C.R.P. As a point of reference, I've provided the Board with a copy of the health physics tritium fact -- fact paper for your consideration and use.

And so there's a tremendous amount of -- of tritium information on the N.R.C. website, and -- and it was just publicly available and hopefully you can find it of use. So with that, thank you for -- for -- very much for letting me speak tonight. And I hope I've provided some good information for you to consider.

CHAIR CONGDON: Thank you very much, Bruce. And we've been joined by County Legislator, Catherine Borgia, welcome. Thank you.

MS. BORGIA: Sorry I didn't realize there was a change in venue.

CHAIR CONGDON: Well, that's okay. Any questions for Bruce before we move to the next -- yes, sir, go ahead?

MR. WEBSTER: Yes.

CHAIR CONGDON: Say again? State your name please.

MR. WEBSTER: Richard Webster, DOB member. A couple questions for you. One is I don't see any mention of actual health in here. Right, so this 100 millirem per year how does that translate into cancer risk for different -- different --.

MR. WATSON: It is calculated that the incremental increase in exposure would probably be around less than 0.1% over your lifetime due to the exposure from the power plant -- living near a power plant.

MR. WEBSTER: Point 1% of what?

MR. WATSON: Less -- of the average like typically, I think the cancer rate for men is like 40%. I think women is slightly less, but. So you're less than 1% of increasing that limit.

MR. WEBSTER: Okay.

MR. WATSON: So we have tremendous amount of natural cancer cases, and this is highly unlikely

it would cause any additional cases.

MR. WEBSTER: This causes a small number, right?

MR. WATSON: Right, right.

MR. WEBSTER: And is that the same for -- for women, children?

MR. WATSON: Yeah, yeah, the regulations take into account, as I said, the women --

MR. WEBSTER: No, I don't mean the regulations.

MR. WATSON: -- the unborn and children.

MR. WEBSTER: The additional cancer risk, it can't be the same surely for each one?

MR. WATSON: It is about the same, yes.

MR. WEBSTER: Really? Okay. The changes, yeah, the change --

MR. WATSON: The change, yeah, they don't.

MR. WEBSTER: Thank you.

MR. WATSON: Right.

MR. WEBSTER: And then my other question is, I understand that N.R.C. started doing some can -- some studies of cancer risk around reactors and then canceled those. Is that right?

MR. WATSON: Well, typically the N.R.C.

does not do the epidemiology studies you're talking about. What we do is we collect the data from all the licensees. There's a report called the annual radiation the REIRS is called the radiation exposure report that is provided to the N.R.C., it's like it's NUREG-0713.

We produce the radiation data -- actual data of doses around the nuclear -- at the nuclear power plants and other scientific communities use that data to do the epidemiology studies. So maybe the National Academy of Sciences or the N.C.R.P. will look at those type of things, not the N.R.C.

MR. WEBSTER: Okay. So was it -- was there a government study that was cancelled?

MR. WATSON: It could have been, I don't know. But it -- it -- the N.R. -- and it's not our purview to do that. We're an independent safety regulator. That would be covered by another -- either government agency or another independent science agency.

CHAIR CONGDON: Richard, it seems like you have some knowledge --

MR. WEBSTER: I study --

CHAIR CONGDON: -- of the study.

MR. WEBSTER: -- I know the study, which was cancelled, but I'm not sure whether N.R.C. was taking it or another -- another government body, but.

MR. WATSON: Well, I know -- I know the Electric Power Research Institute was going to do a big study back in the 1980s.

MR. WEBSTER: Uh-huh.

MR. WATSON: And -- yeah so. But no, the N.R.C. does not do that. That's -- they leave that up to the independent science community to do that.

MR. WEBSTER: Okay, thank you..

CHAIR CONGDON: Senator?

SENATOR HARCKHAM: Thank you very much, Tom. And Bruce, thank you and your team for being here. Thank you very much. Quick question. You know, we've been talking a lot about different options for the wastewater and Vermont, there was solidification. I believe Three Mile Island was evaporation, here we're talking discharge.

So my question is, does the N.R.C. have a preferred method or are you sort of silent on the method as long as the method meets your safety requirements?

MR. WATSON: Well, first of all, you're

right, it has to be done safely, no matter what it is. The N.R.C. leaves that up to the licensee to do --

CHAIR CONGDON: In the mic.

MR. WATSON: Yeah, the N.R.C. leaves those processes up to the licensee that they choose to -- to do the thing as long as it's within the regulations, and we -- and they maintain the safety of it. The second part of your question, though, I want to make sure you understand that the N.R.C. requirements are -- is that the plant must be completely decommissioned within 60 years.

SENATOR HARCKHAM: Well, that -- that we know. I -- I --

MR. WATSON: Yeah, I -- I --.

SENATOR HARCKHAM: -- what I was talking about is just -- just getting rid of the liquid from the --

MR. WATSON: Yeah.

SENATOR HARCKHAM: -- site.

MR. WATSON: We have -- yeah, we have regulations that allow the licensee to discharge it. And we have -- they can do evaporation but you know, evaporation of tritium goes into the atmosphere,

becomes part of the water cycle. So you -- you -- you're just changing the form in which it enters the environment, correct?

SENATOR HARCKHAM: Yeah.

MR. WATSON: You know, so -- you know, so. It's really up to the licensee how they want to do it. Vermont ships a lot of water. They don't necessarily solidify all of it, but they do ship tremendous volumes, and they agreed with the state to do that when they -- when the company that's doing the decommissioning accepted that the -- I guess the -- the state issues a, what's it called? Certificate of common good or public good, and that was part of that decision making by them.

SENATOR HARCKHAM: All right, so as long as it's a method that's already accepted by you and it meets your safety requirements?

MR. WATSON: Yeah.

SENATOR HARCKHAM: Okay. Thank you.

MR. WATSON: Yeah.

CHAIR CONGDON: Assemblywoman?

ASSEMBLYWOMAN LEVENBERG: Thank you so much again for coming in this -- for this presentation. You talked a lot about the difference in the water or

the -- the effluent from the spent fuel pools being different or the same during -- you know, when the plant was operational versus now.

Yesterday, we had the pleasure of visiting Holtec, and they talked a lot about sort of moving the water around and using it for different purposes as part of the decommissioning process. And it seems like maybe that's different than maybe what would happen during the operation of the plant.

I mean, they were using it at one point to, you know, the lowering and raising the level of the pool water so they could clean the boric acid from the sides and -- and then the -- the effluent moved around to a different place. Is there any -- are we really, you know, comparing apples to apples when we're looking at what the effluent would be from during this process as during operational?

MR. WATSON: I'm -- I'm going to go back to my -- my slides, and it's -- it is the same water. During this --

ASSEMBLYWOMAN LEVENBERG: I guess --

MR. WATSON: -- during --

ASSEMBLYWOMAN LEVENBERG: -- that's not exactly --

MR. WATSON: Yeah, during --

ASSEMBLYWOMAN LEVENBERG: -- what I'm saying.

MR. WATSON: Yeah. Well, during refueling, you use the same water and you --

ASSEMBLYWOMAN LEVENBERG: Yeah.

MR. WATSON: -- raise the water level, you drop the water level. You have to raise it to -- to -- to move the fuel under water. They raised the water to segment the internals of the reactor because it's highly contaminated or radioactive.

So the water levels are going to change, and eventually they're going to reach a point where they decommission the spent fuel pool after they removed the fuel, and they'll be decommissioning that so they will lower the water level. Okay.

So you know, it's the same water, it's going to get -- get mixed with all the other water that's onsite so that can be all processed. So it would be processed in small batches. They're going to be sampled and -- and filtered and treated just like it would any other water that -- from the plant operation.

The biggest difference is it's not

circulating through their -- the inactively -- active reactor core, where it could be having new radioactive material entered into it in the fission process or from activation of the products, impurities in the water.

ASSEMBLYWOMAN LEVENBERG: Okay. I guess the question is, are there other contaminants that we need to concern ourselves with?

MR. WATSON: Well, I think the radioactive components are pretty well documented. The -- the operators of the nuclear power plants do their best to keep all impurities that they can out of the water, because they want -- they don't want to create a radiation issue they don't -- going to have to deal with. So you know, when they don't -- the water is kept as clean as it can be. It's continuously cleaned up.

There's a system called the letdown system where they refurbish the water, so to speak, clean it and put it back into the system. So you know, from -- from a reactor operation standpoint, they want the best water they can have in here, which is if they could -- if they could have the distilled -- distilled water, that's what they would use.

But -- so water chemistry is extremely important because they want the reactor components to last forever, so to speak, obviously beyond the license time. And so things like steam generators and reactor internals they want to lab -- have them last a very, very long time, because they're very expensive to replace.

CHAIR CONGDON: I believe Dave Lochbaum has a question virtually.

MR. LOCHBAUM: Yeah, this is Dave Lochbaum. I wanted to follow up on Richard Webster's comment about the -- the cancer study. A few years ago, the Nuclear Regulatory Commission was going to fund a study that was done by -- going to be done by the National Academy of Sciences or the National Cancer Institute, one of those organizations. They did the Phase-I study, which scoped out the Phase-II study, which was epidemiological study, looking at routine releases and whether they caused harm.

But the N.R.C. cancelled the Phase-II study because it costs too much, about a million dollars a year for eight years, which is less than the cost of the N.R.C.'s annual regulatory information conference. But the N.R.C. decided not to do that

study, or fund that study, excuse me.

CHAIR CONGDON: Thanks for the -- for the context, Dave.

MR. WEBSTER: Can you tell me why?

MR. WATSON: That wouldn’t be our call. That would be the Commission's call.

MR. WEBSTER: Did the Commission offer an explanation at the time?

MR. WATSON: I --

MR. LOCHBAUM: Costs too much.

MR. WATSON: -- I -- I don't know. Other than it cost too much, I guess it's -- and I'll take David's word for it, yeah. Like I said, we're not in the epidemiology business, we're in the --

MR. WEBSTER: Well --

MR. WATSON: -- safety business so.

MR. WEBSTER: -- when you say that -- when you say -- let me read from their website here. In 2010, the N.R.C. sought to address these concerns by asking the National Academy of Sciences to perform state of the art study on cancer risk in population surrounding N.R.C. facilities. So with respect it sounds like the N.R.C. is in that business. You may not be personally, but the agency is.

MR. WATSON: Well, I -- I -- I think there's a big difference between contracting and having someone independently do it and not doing it ourselves. So.

MR. WEBSTER: Well, a lot of things are done by contract. I mean if the agency commissions a study, it's an agency study?

MR. WATSON: Okay. I'm just saying it was -- as I mentioned, it was decided by the Commission not by the staff, so.

MR. WEBSTER: Right, the N.A.S. didn't cancel it, the N.R.C. decided to cancel it, correct?

MR. WATSON: Okay. For -- for whatever the Commission's reasons were, I'd have to agree with you.

MR. WEBSTER: Okay. Thank you.

CHAIR CONGDON: John -- John Sipos.

MR. SIPOS: Thank you. Can you hear me, Bruce?

MR. WATSON: Yeah.

MR. SIPOS: Well, and again, thank you for coming here tonight. Just a couple of questions about the tritium. So I understand there's tritiated water inside Indian Point right now. Is that

correct?

MR. WATSON: Yeah, the water contains some element of some concentration of tritium.

MR. SIPOS: And that tritium is the result of the fission process from when the reactors were operating. Is that correct?

MR. WATSON: Yes. Principally, yes.

MR. SIPOS: And so the tritium that's in the water that's inside the plant is the result of Indian Point generating electricity. Is that correct?

MR. WATSON: That's correct.

MR. SIPOS: Thank you.

CHAIR CONGDON: Tom Carey, did you have a question?

MR. CAREY: Yes. Are you aware of any other separation or extraction process something new that's been talked about to release the tritium?

MR. WATSON: I honestly don't know the – haven’t been keeping track of all the technology and research going on on that area. I know it's -- you know, tritium is tritiated water. It's very difficult to remove water from water so to speak. And so I'm sure there's people trying to figure it

out. But, you know, I don't -- I really can't say that I'm aware of any.

MR. CAREY: Okay.

CHAIR CONGDON: Tom we -- we -- as part of Dave Lochbaum's work of evaluating options, we were sent a flyer by supervisor Becker, who learned of a process being demonstrated in I believe the State of Washington by a company called Veolia, which is now a company that owns a water utility, Rockland and Westchester, the Suez water company. We've reached out to Veolia to learn about that technology.

And Dave could speak to this probably better than I, but what I learned is, just to briefly answer your question is that the tritium removal technology is commercially available for heavy water applications, where there is a higher concentration of radionuclides, tritium in particular.

For the light-water reactors it is not commercially available, but Veolia did demonstrate that technology can work for light-water systems, but it's -- it's never been deployed commercially for that type of application. And they said it would be extremely expensive to do it. And it does not result in an elimination of tritiated water. It results in

a highly concentrated, much lower volume.

So it's a way to take a large volume of tritiated water, remove -- it's an electrolysis process that removes the -- the tritium from most of the water, but it then concentrates it on a smaller volume. That's how it was explained to me.

MR. CAREY: So it is -- in essence, it's a extrication process, right?

CHAIR CONGDON: Yeah, it's an electrolysis process.

MR. CAREY: Separation, yeah.

CHAIR CONGDON: Yes.

MR. CAREY: Okay.

CHAIR CONGDON: Yeah -- yeah. And they're -- in the process, there is some air emissions associated with that. And by making it into a higher concentration, they could further -- they could further work with the water to then extract it further and -- and -- and solidify it on metal plates. But that would be on top of an already very expensive process.

Dave Lochbaum, do you want to add to anything I said, because I know that you looked at that as an earlier option that you evaluated?

MR. LOCHBAUM: Yeah. When I looked at it, I looked -- it's being used in Canada and some places in Europe. And the volume that they were dealing with was much larger, so we got the economy of scale effect.

And as you say, they -- those were heavy water plants, where it is a little bit easier to deal with than light-water reactors so that -- that's why the cost is a little bit higher. Not a little bit higher, why it was higher for -- if you try to apply it to our type of reactors.

CHAIR CONGDON: Yeah, and that's a good point. And -- and the reason it was being demonstrated was in response to Fukushima, because the volume there is so much greater than what you're seeing with -- with other, you know, light-water applications --

MR. WATSON: Yeah, I --

CHAIR CONGDON: -- right. So -- so that was why it was developed. But the decision makers in Fukushima chose not to pursue that as their option.

MR. WATSON: I was going to bring up the Fukushima example which you just did, but they have a tremendous problem, yeah.

CHAIR CONGDON: Other questions?

MR. CREIGHTON: Yeah.

CHAIR CONGDON: Other questions? Yeah.

MR. CREIGHTON: So just following up on that then, how -- how does that fit into the ALARA principle if -- if we're talking about as low as reasonably achievable, doesn't that show that it is reasonably achievable to get a lower rate? And -- and I'm -- I'm struggling with the ALARA principle and the cost principle.

MR. WATSON: Yeah.

MR. CREIGHTON: I -- I know it costs money. I think the question is, is it reasonably achievable? Can we get that number down? Can we get it out of the river? And I think that's the goal if it can be done. And I -- I -- you know, I think that somewhere I saw that -- that the -- the expectation is that you want it as low as possible, and if you could get to zero, that would be what you would want. But it needs to be reasonably achievable.

So where does this new technology fit in? I know it hasn't been around 50 years, but it seems to be around now, and it's been demonstrated that it works. So is it worth a shot?

MR. WATSON: Well, that would be up to Holtec to do the cost benefit analysis and for possibly the State to oversee that -- that review. So it'd be up to them to determine how they want to process the water. We would just make sure that it was done safely, whatever technology they chose. And so you know the -- we would not be doing the cost benefit analysis for them.

Our regulations allow the discharge of the water, and plain and simple. And that's been the ALARA practice to minimize the amount of radioactivity into the environment.

MR. WEBSTER: Bruce --

MS. WARNER: I'm going to --

MR. WEBSTER: -- I don't quite understand that.

MS. WARNER: -- add something here.

MR. WATSON: Yeah, absolutely.

MS. WARNER: Katherine Warner, Senior Health Physicist with N.R.C., I'm the lead decommissioning inspector for Indian Point. I would add to that that ALARA is as low as reasonably achievable, not as low as reasonably attainable. And also in our regulations in 10 C.F.R. 50 Appendix

Indigo, that's where we define the ALARA design objectives for liquid release.

And those design objectives are incorporated into the sites -- offsite dose calculation manual. So as long as they're meeting those dose, about three millirem, then we consider them meeting our ALARA standards, so.

MR. WATSON: Does that make sense to you?

MR. CREIGHTON: I definitely understand the three millirem. But if -- if there was a process to get it to zero, or to get it to one, is it worth pursuing?

MR. DIMITRIADIS: And the limit is three.

MR. CREIGHTON: I -- I understand. Just because the limit has been stated as three, if it could get to one, and it's reasonable, isn't that worth pursuing?

MR. DIMITRIADIS: No.

MR. CREIGHTON: Okay.

MAYOR KNICKERBOCKER: You know, I'd like to comment also on the zero because I have heard the zero to get it to zero. And I -- and I think you need to look at the whole picture here too. We have medical facilities, through -- up and down the Hudson

River we have people who do testing, cancer testing, cancer treatment.

So what are we going to say to them zero also? All the hospitals and medical facilities, research facilities? You know, so -- you know, we're --

MR. CREIGHTON: If you want --

MAYOR KNICKERBOCKER: -- we're --

MR. CREIGHTON: -- them to be reasonable, you want them --

MAYOR KNICKERBOCKER: Absolutely.

MR. CREIGHTON: -- to be as much --

MAYOR KNICKERBOCKER: -- I'm not -- Jim, let me state this. I want a safe decommissioning. I'm not looking to hurt the Hudson River. It's a majestic river, so let me put that out there because I've been accused of a few things. I learned -- just like Warren Smith, I learned -- and Tom Carey, we probably learned the same day, learned how to swim in that river. I love the river. I'm not looking to hurt it. I don't think there's anybody looking to hurt it.

We want the safe, prompt, decommissioning of the Indian Point facility. But what I just want

to say to you even in the atmosphere, it's in the atmosphere. So how -- you'll never going to get a zero anywhere. It just -- it's -- it's not going to happen. I do understand you want the lowest -- we all, that would be great. But it's never going to be zero anywhere. Because even in the water now, you're still going to have this stuff.

MR. CREIGHTON: Totally understood, but --

MAYOR KNICKERBOCKER: So it's natural, it's manmade --

MR. CREIGHTON: If you can keep it --

MAYOR KNICKERBOCKER: -- it's there.

MR. CREIGHTON: -- closer to background, that would be great.

MAYOR KNICKERBOCKER: Absolutely. So we keep it at ALARA.

CHAIR CONGDON: I think the -- the -- the point of trying to keep it closer to background, you know, we -- we heard from the N.R.C. at the last meeting where they went through and the measured actual. And maybe Katherine you could refresh the D.O.B. on your conclusion slide that you know went through -- I'm sorry to put you on the spot --

MR. DIMITRIADIS: April.

CHAIR CONGDON: -- but from the April meeting, you know what the measured calculated dose was from the liquid effluent highest dose from the, you know, historical discharges? Do you recall that -- that number?

MS. WARNER: Of course, off the top of my head, Tom.

CHAIR CONGDON: Yeah.

MS. WARNER: All right, so I'll -- I'll go through a couple of the numbers here. So just for a touch point for occupational workers, 5000 millirem is our occupational total effective dose limit.

MR. DIMITRIADIS: 5000?

MS. WARNER: 5000.

CHAIR CONGDON: In a year?

MS. WARNER: In a year.

MR. DIMITRIADIS: In a year.

MS. WARNER: I got it. And then 620 millirem is the average that a person gets just existing in the United States. And then we have a 100 millirem, that is the overall dose limit to a member of the public from all pathways, that's including ingestion, inhalation, direct exposure, everything.

And then 25 millirem a year is the E.P.A. dose limit for releases, including for the nuclear fuel cycle. And then three millirems a year is the O.D.C.M. design objective that the site is to meet per their license.

CHAIR CONGDON: That's from all types of releases liquid, air, everything?

MR. WATSON: Just liquid.

CHAIR CONGDON: Just liquid? Okay, sorry. Go on.

MS. WARNER: And then the actual dose from 2021, if I'm recalling correctly from liquid releases was like .0011 millirem somewhere around there. I might have mixed the zero up, but well below all of those limits. Does that help?

MR. CREIGHTON: That is -- that's --

CHAIR CONGDON: So when you say, could we get it to zero, or to one, it's from historical discharges .001?

MR. CREIGHTON: Right, but these discharges are discharges of -- of storm water, right? Storm water that's collected on site and filtered. I mean, it was described yesterday.

MS. WARNER: So --

MR. CAREY: This -- this was -- this was from a fuel dump -- a fuel pool dump?

MR. BURRONI: Our -- our discharge from any source will be less than 1%. So if you want me to get to one, I can, but we were at less than 1%.

MR. WEBSTER: Let me -- let me ask you a question. If you're -- if the discharge is at less than 1%, why is ALARA three? It seems like ALARA should be lower?

MR. WATSON: Generally, a good -- pretty good question. Well, considering -- considering -- considering that we used to have a general limit of 10 millirem, three is much, much lower.

MR. WEBSTER: But it's not ALARA, is it?

MR. WATSON: Well, it is ALARA because when you consider what it could be, you know.

MR. WEBSTER: Obviously, it's achievable to go to point one or -- or --.

MR. WATSON: Well, no, the operation -- the design operation is that we will be below three.

MR. WEBSTER: I know.

MR. WATSON: After you -- after you do all the ALARA steps, filter it, run it through resin columns, whatever it is, to remove the amount of

radioactive material that you can, then it's ALARA.

MR. WEBSTER: Okay.

MR. WATSON: So -- so you're not just -- you're not -- they're not just dumping the raw water, they are treating the water, they make it ALARA to -- to --.

MR. WEBSTER: I'm not complaining about them, I'm complaining about --

CHAIR CONGDON: Right.

MR. WEBSTER: -- the -- the terminology. If the terminology is as low as reasonably achievable, then it seems like what's achievable is what Holtec actually achieved.

MR. WATSON: Three millirem is our ALARA design objectives. You got to be below three.

MR. WEBSTER: What -- what -- how is that -- how is that ALARA?

MR. WATSON: Because it's less than three.

CHAIR CONGDON: I think -- I think --.

MR. WATSON: You know, what I'm answering is like -- like you said --

CHAIR CONGDON: Yeah. But I think the point -- the point, though, that Richard's making is that if in the field, and for decades, Indian Point

has been able to achieve less than one, maybe that's an example that --

MR. WATSON: It is.

CHAIR CONGDON: -- N.R.C. could take back to consider whether the three should be lowered again, based on actual experience in the field, I think. Is that fair to summarize? But -- but we don't have to -- this -- this could be --

MR. WATSON: Yes.

CHAIR CONGDON: -- you know -- I'm -- I'm time sensitive. Tom Kaczmarek, did you want to do a time check or what?

MR. KACZMAREK: Yeah. So Tom Kaczmarek. Just a reminder everyone, I'm getting some feedback from folks on Zoom. Please introduce yourselves before you speak. And make sure you're speaking into the mic. So --

CHAIR CONGDON: Thank you.

MR. KACZMAREK: -- thank you.

CHAIR CONGDON: I'd like to try to get back on schedule. The next presentation is also by the N.R.C. Tony Dimitriadis from the N.R.C. is here to talk enforcement and oversight. Thank you for being here. And go ahead.

MR. DIMITRIADIS: Thank you, can you hear me?

CHAIR CONGDON: Yes.

MR. DIMITRIADIS: Okay, thank you. Good afternoon. My name is Anthony Dimitriadis. I'm the branch chief responsible for oversight of Indian Point. We have decommissioning ISFSI, that means Independent Spent Fuel Storage Installation, that's the spent fuel casks, and also operating reactor health physics.

Thank you to the Decommissioning Oversight Board for inviting me and us to make this presentation to discuss our oversight program as Indian Point undergoes decommissioning. We value these interactions and want to emphasize that we have a common goal to ensure that Indian Point is decommissioned safely and effectively.

I will be talking about our inspection program, how we process issues of concern, how we pro -- process those issues of concern that may turn into violations. The enforcement process, a little bit about that. Intentional violations. I'm going to talk a little bit about public notification on urgent matters.

And finally, ISFSI inspections as asked by the Decommissioning Oversight Board. I have about nine slides to go over and that should take about 15 minutes. Next slide please. So our inspections involve communication, coordination, a lot of planning and scheduling, conference calls, plant walk-downs, interviews, and review of procedures and records.

Our staff use inspection manual chapter. That's a terminology that we use for our documents that we follow, which outline our inspection program. Our inspectors like Katherine, the lead inspector for Indian Point, have unfettered access. That means that they have access to the site.

They don't need to be invited to the site like other federal agencies may need to be invited like the Department of Labor, for example. The inspections are multidisciplinary, and they are very intrusive. Procedures, logs, and records are reviewed before, during, and after our onsite visits.

Inspections can involve one inspector or multiple inspectors as you can see in the slides. The inspection program includes many items such as for example, spent fuel pool maintenance, fire

protection, occupational radiation exposure, that is for radiation workers and radiation areas, and radioactive waste treatment and effluent and environmental monitoring as we lightly talked about in previous presentations.

Next slide please. Now we will talk a little bit about the N.R.C. pro -- how the N.R.C. processes issues of concern that may result in a violation and how that process works. The enforcement process begins with the identification of violations either through N.R.C. inspections or investigations, a licensee report perhaps, or substantiation of an allegation.

When an inspector identifies or becomes aware of an issue of concern, we process that issue to determine if there's an associated violation as to a non-compliance issue. In the decommissioning program, we do not follow the reactor oversight process. We implement our, what we call traditional enforcement process. That process follows our enforcement policy as shown on the slide here.

If the issue is a violation, then we use the enforcement policy shown here to determine the severity level of the violation. The N.R.C.'s

enforcement process, as it applies to decommissioning reactor sites, is fully described in the enforcement policy available from our public website.

As described in the policy, the severity level of a violation is based on the N.R.C. staff's assessment of its significance, with a severity level one being the highest significance, and severity level four being the least significant, while still being more than minor significance.

We can also assess a violation as being minor significance, which is the lowest classification. Minor violations are not documented in inspection reports typically, but licensees are still required to correct them. Violations are as -- as severity level one, two or three are considered escalated enforcement actions and are subject to evaluation for potential civil penalty, that -- that -- that means a fine.

The N.R.C. staff evaluates the violation's severity level considering -- through consideration of four factors. 1) Actual safety or security consequences, 2) Potential safety and security consequences, 3) Impacts of the N.R.C.'s regulatory process, and 4) Willfulness, that is a violation

determined through an N.R.C. investigation to have been committed due to deliberate misconduct or careless disregard.

The N.R.C. enforcement policy includes examples of severity level outcomes based on consideration of these four factors for different types of violations, and the staff considers these example violations whenever possible to ensure consistent application of the N.R.C. policy.

Next slide please. Our licensees are typically aware that the N.R.C. staff is evaluating a potential violation during the course of an inspection, or inspection period based on the information being reviewed and the questions that our inspectors asked the licensee staff. The N.R.C. staff formally informs the licensee of potential violations during the inspection exit meeting, at the end of the, for example, the quarter.

The public is made aware of violations when the N.R.C. staff issues the inspection report, which we typically issue about 30 to 45 days after the exit meeting. Our enforcement actions are normally made publicly available. Occasionally some security related information and certain other information

such as, for example, medical records and things like that sort will not be made available to the public.

Sometimes we also issue press releases when an order or if a civil penalty is issued at the same time as a notice of violation. The N.R.C. Office of Public Affairs is responsible for making final decisions as to whether press releases will be issued. If we identify a licensee has declining performance when there are numerous violations, we would increase our inspection activities.

Next slide please. To illustrate how we process violations, I have chosen two violations to talk about. The first involves a Hi-Lift crane. You could see in the picture here from Indian Point Unit 3. The Hi-Lift crane, this is basically a very robust, heavy duty crane that was installed in the unit three refueling floor to move the canisters designed to store the spent fuel.

So the inspector -- our inspectors identified one severity level four non-cited violation of the requirements because design control measures do not provide for verifying the adequacy of design of a portion of the crane. Specifically, Holtec staff did not review the suitability of the

Unit 3 Hi-Lift crane, hydraulic system, and crane structure to affirm single failure design capability in the event of a postulated strand jack counterbalance failure.

So Holtec implemented corrective actions as a result of this and performed an engineering evaluation that found the stresses on the crane that could occur due to this assumed failure were below design limits. The N.R.C. staff reviewed the evaluation and found it acceptable.

The violation was determined to be a severity level four non-cited violation in accordance with the N.R.C.'s enforcement policy that I mentioned in the previous slide. Because no modifications of the crane were required.

A second example involves the waste holdup tank violation. One severity level four non-cited violation identified by Katherine here, 20.1501 was documented for failing to perform adequate radiation surveys to evaluate radiological conditions associated with an overflow of the waste holdup tank in unit two cubicle.

Specifically, surveys were not performed in accordance with the H.D.I. procedures in the waste

holdup tank cubicle after an overflow had been identified, resulting in a failure to adequately assess the radiological conditions and conduct -- and conduct operations to minimize the potential, the potential introduction of residual radioactivity onto the site.

So Holtec entered the issue into its corrective action program and took a number of corrective actions. Now, having said all that, I just wanted to point out that upon identification of a violation of any violation, our inspectors would not leave the site until the issue or issues have been addressed and entered into the corrective action program. Next slide.

MR. DIMITRIADIS: Now, I'm going to talk a little bit about intentional issues or wrongdoing. Sometimes we receive information that indicates a potential willful conduct. In such cases, we have an allegation process where a board is held to discuss the issue and a decision is made whether enough information is available to inspect or investigate.

Violations that are potentially caused by wrongdoing are evaluated through an investigation of our N.R.C.'s office of investigations. Our

investigators on staff are special agents, who are specially trained to investigate issues of wrongdoing.

Upon conclusion of any investigation, violations could result to the individual or individuals, the company or criminal referral could be made to the Department of Justice. The results of an O.I. investigation are reviewed by our office of general counsel, the attorneys, to determine if there's sufficient evidence of wrongdoing.

As described in the enforcement policy that I showed you a couple slides ago, violations involving wrongdoing can be assigned a higher severity level than they would otherwise be. This is to demonstrate that the N.R.C.'s intolerance for willful violations. As a result, violations involving willfulness are more likely to result in escalated enforcement action, which can include civil penalties.

Next slide, please. We have a very different protocol for issues that have an immediate risk to the public. And I wanted to stress this a little bit. In such an instance, which would be rare, we would work with our partners from the State

of New York like Alyse Peterson, thank you for being here. For example, to provide notification.

Now, let me stress this would be rare. And it would be very rare for a shutdown plant that's in decommissioning. For example, after one of our violations that I just mentioned, was issued related to the waste holdup tank leak, some parents were somehow led to believe that this was an urgent matter and as a result pulled their children from school that day. This was not an urgent issue, nor an issue of immediate safety. I want to stress that.

I just want to assure you that if there was -- if there's an immediate safety issue, the N.R.C. staff would implement our emergency plan. And we would work with the state of New York and local organizations to notify the public in a timely manner.

Next slide, please. Now, I'm going to talk a little bit about our ISFSI inspections at Indian Point due to some questions that were asked of us. The N.R.C. staff began to inspect the ISFSI program at Indian Point in 2008, when the site was loading fuel from unit one, and then, from unit two.

At least 14 inspection reports are

6/15/2023 - Indian Point - 21-01188 available in our ADAMS system. That's our database system that's available to the public. We are searching our databases just to determine how many staff hours were spent inspecting the ISFSI program because we got that question.

And I have to tell you, we changed our system over the last 15 years, three times. So we're looking at that to -- to come up with a number of hours. To give you a higher level description. The following are examples of what our inspectors look at during ISFSI inspections.

And they include fuel assembly selection for being loaded into a canister, loading, and unloading activities. That means use of cranes and heavy equipment like the Hi-Lift that I showed you a picture of, drying, welding operations, occupational and public radiological exposure, safety, and things of that sort.

The ISFSI training program is as outlined in our manual chapter designed for training was established in late 2011. Before that, region one implemented an in-house regional qualification process for our ISFSI inspectors.

Region one ISFSI inspections at Indian

Point have had, at a minimum, a qualified lead inspector with accompaniments by other lead -- by other inspectors who were either fully qualified or working towards full qualification.

Region one also has received support from our headquarter staff on certain ISFSI related activities, such as structural reviews for ISFSI pad expansions and other engineering analyses. And before I summarize, I just wanted to -- one more -- address one more thing, Mr. Chairman.

At the last meeting in April, there was some comments or suggestions made that the N.R.C. has a cozy relationship and something about a tainted process. I am here to assure you that there is nothing cozy between the N.R.C. staff and any of our licensees including Holtec.

Our -- our -- our relationship is professional and cordial. But there's nothing cozy about it. And we call balls and strikes. And we -- we do not get cozy with any licensee including Holtec. And I think it's comical to suggest that without -- that without basis in fact.

Next slide please. In summary, we inspect and become very intrusive in the licensee’s

decommissioning activities. We assess our findings and conclusions in an objective and consistent manner using our enforcement process that is publicly available.

Our inspection results are publicly available, the majority of them, we notify all of our stakeholders via notifications or publication of our inspection reports. We will continue our decommissioning inspections of risk significant activities until the decommissioning process is completed.

We also continue our ISFSI security inspections as long as the fuel remains on site. Further, ISFSI remain robust and are secured around the clock 24/7. And we assure that by our rate -- our oversight process. Our violations are processed through our enforcement policy in an objective and consistent manner.

Notifications to the public have a different protocol. And we would work with our partners from the State of New York and -- and local organizations to make sure that we have any urgent or emergency notifications, although this would be rare.

As part of our program, we continue to

inspect ISFSIs for safety and security for as long as the fuel is on site. Thank you.

CHAIR CONGDON: Thank you. So we're -- we're running about five minutes behind, which is really quite good for us. So why don't I -- why don't I say we should take about five minutes of questions for -- for N.R.C. so we can try to get back on track. Yes, Richard.

MR. WEBSTER: I just have a couple of questions. One, for the waste holdup tank. What was the lag time between the exit meeting and the issue of the report?

MR. DIMITRIADIS: I'm sorry?

MR. WEBSTER: For the waste holdup tank violation, what was the lag time between the exit meeting --

MR. DIMITRIADIS: The what time, I'm sorry?

MR. WEBSTER: The lag time.

MR. SIPOS: I think he means delay.

MR. DIMITRIADIS: Delay of what? I'm not sure.

MR. WEBSTER: What was the -- what was the time interval between the exit meeting and the issuance of the inspection report.

MR. DIMITRIADIS: It's usually like I said, 30 to 45 days.

MR. WEBSTER: For that specific violation.

MR. DIMITRIADIS: I'd have to look it up, I --

MR. WEBSTER: I think you'll find it’s considerably longer.

MS. WARNER: I don't know the exact date. But I can tell you that this was a team inspection. So that's greater than two inspectors making it a 45-day report. So from the date of the exit, which I believe to be early February, we would have 45 days and the inspection report was released within that time.

MR. WEBSTER: The violation occurred, I think more than a year before the -- before the report went out.

MS. WARNER: The violation is by identified by the N.R.C. So the inspection period for this was the fourth quarter of 2022. So that's October to December of 2022. We exited, I believe in early February. And so we have 45 days from there.

MR. WEBSTER: Okay.

MS. WARNER: So that is our process.

MR. WATSON: Just to clarify, the event happened before the inspector determined it to be in a violation.

MR. WEBSTER: Is that what -- well, I'm trying to get -- all right.

MR. WATSON: And then -- and then -- and then after the determine -- determination that it was a violation the report was issued about 45 days after --

MR. WEBSTER: The exit.

MR. WATSON: -- the exit meeting.

MR. WEBSTER: Right.

MR. WARNER: No, I --

MR. WATSON: We keep -- we keep metrics on this. And we meet, I think over 90% of our metrics --.

MR. DIMITRIADIS: 95.

MR. WATSON: Yeah.

MR. WEBSTER: No, I --

MR. WATSON: 95 for meeting that timeframe.

MR. WEBSTER: I think what the public wants is --.

MR. WATSON: We might have missed one.

MR. WEBSTER: The metric the public really

cares about is what's the time that can lapse between a violation occurring as the event and being reported on to the public.

MR. DIMITRIADIS: Well, as I said, the -- that might be an irrelevant question in the sense that when it's identified, the inspector ensures that the licensee takes appropriate corrective actions.

So when we report on it in writing in a report is, is kind of, you know, I'm not sure what you're getting at.

MR. WEBSTER: Well, --

MR. DIMITRIADIS: But the -- the actions are taken as soon as it’s identified --

MR. WEBSTER: --let me --.

MR. DIMITRIADIS: -- with -- to the licensee.

MR. WEBSTER: The -- what I'm getting at is public transparency, right, that the public should know what's going on, on the site. So let me ask you another question.

MR. DIMITRIADIS: No, excuse me, I'm sorry, excuse me, excuse me. We are the most transparent agency that you can name, okay. So I think -- I believe that our publication of our inspection

reports are -- is -- is an outstanding record.

MR. WEBSTER: Well, you can believe whatever you want, with due respect to me.

MR. DIMITRIADIS: You too.

MR. WEBSTER: I mean, I'm not trying to make any general statements. I'm trying to get specifics about when -- when the violations occur and how long does it take for them to work their way through the system and get notified to the public. And my observation is, it can take over a year.

MR. DIMITRIADIS: No, no, like, as I said in my presentation, when the violation is identified, we engage with a licensee to take corrective actions immediately and they enter it into the corrective action program.

MR. WEBSTER: I don't think what the two statements are incompatible. Let me ask you another thing. Did you say that when -- when a minor violation is identified, it's not put into the -- into the inspection report?

MR. DIMITRIADIS: When a violation is identified, we assess to see whether it's more than minor or less than minor. If it's a minor violation, typically we don't document it. We engage with a

licensee and they have to correct it regardless.

MR. WEBSTER: Right. And -- and why is that?

MR. DIMITRIADIS: That's our process.

MR. WEBSTER: Right. But that's because it is, I mean, --

MR. DIMITRIADIS: Well, no, I mean --.

MR. WEBSTER: -- why is it -- why doesn't the public need to know about that?

MR. WATSON: Let me be very clear here, you know, there's violations and there are severity of violations. And something that is classified very minor is of low safety significance. And the licensee, once identified is issues that their corrective action report or plan, and then, they fix it and that's it.

But it's of such minor inconsequence to safety, that it's not -- it's raised our level of a true violation of safety significance. But a violation, I know, you're trying to equate all of them as the same.

MR. WEBSTER: Some of you -- you have, you put a non-cited violations into the report, right?

MR. DIMITRIADIS: Right.

MR. WEBSTER: Yes, why?

MR. WATSON: But that's still another severity level.

MR. WEBSTER: Right. What I'm saying is, you put low severity level violations or non -- non-cited violations in the report.

MR. DIMITRIADIS: Yes.

MR. WEBSTER: So why not put the minor violations in?

MR. DIMITRIADIS: Because we've assessed that there -- there -- the severity level is -- is minor.

MR. WEBSTER: It sounds circular. That sounds like circular reasoning to me.

MR. WATSON: I would characterize it as pretty trivial.

MR. WEBSTER: Right. So you say that --.

MR. WATSON: But it’s still identified as a deficiency so.

MR. WEBSTER: Let me just give you some context here. I think there's a lot of people who think that there are things happening that they don't get to know about. And so transparency is a good thing. When you say you're the most transparency

agent -- most transparent agency ever when you don't put a sentence into your report that says by the way, there was a minor violation. It doesn't make you look very transparent. Let me ask you what --.

MR. DIMITRIADIS: That's relative with, excuse me, I meant relative to other federal agencies.

MR. WEBSTER: Oh. I see. Okay.

MR. DIMITRIADIS: Yes.

MR. WEBSTER: So on the Hi-Lift crane example --

MR. WATSON: That's not good enough for you?

MR. WEBSTER: I mean, I'm not judging whether that's good enough or not. I'm just trying to get some information out here. So -- so on the Hi-Lift crane.

MR. DIMITRIADIS: Yes.

MR. WEBSTER: My understanding of the violation was, it was to do with a single point of failure, is that right?

MR. DIMITRIADIS: That's part of it.

MR. WEBSTER: Okay. So why weren't modifications needed to make it so there was not a

single point of failure?

MR. DIMITRIADIS: I'm not sure I understand your question.

MR. WEBSTER: If there was a single point of failure on the crane, right, I would have thought you would need to modify the crane so that there wasn't a single point of failure?

MR. WATSON: No, I think -- I think the point of the violation was, there was an unanalyzed part of the crane with a hydraulic system, which is not analyzed to the same degree that you would use for a single point failure issue for the design.

And so it was just mainly a paperwork issue to go and verify that the actual configuration of the crane met the design criteria and also met, not only the design criteria but the single failure point criteria for the safety consideration for the crane.

MR. WEBSTER: Okay.

MR. DIMITRIADIS: So yeah, the assumed failure was below the design limits. And once the analysis was documented, the N.R.C. found that acceptable.

MR. WEBSTER: So for a single point of failure, what are the criteria?

MR. DIMITRIADIS: I'd have to get you specialists on that.

MR. WEBSTER: Okay. Final question. For the -- for the waste holdup tank violation, obviously, the licensee deliberately didn't do any surveys, right?

MR. WATSON: I wouldn't use the word deliberate. I don't think they understood that the -- what happened and that they should do a survey in accordance with our procedures.

CHAIR CONGDON: Well, the licensee is here. Do you want to comment on that?

MR. BURRONI: Sure. We didn't do the survey in the area of the tank. We did a survey in an area right next to the tank. So don't accuse us of not doing a survey. That was the deal.

MR. WEBSTER: Okay. So why didn't you do the tank?

MR. BURRONI: Excuse me?

MR. WEBSTER: Why didn't you do it right areas?

MR. BURRONI: Because we classified it as a high rad area. And so to save dose on our personnel, we went to a room next to the tank.

MR. WEBSTER: Why?

MR. BURRONI: We discussed this last time.

MR. WEBSTER: Wait. So the worry was that there was a release of radiation, but you're worried that your workers will be exposed to radiation if they made the survey.

MR. BURRONI: No, no, no. We know there was no relation.

MR. WATSON: Violation is for the lack of a survey in the tank. He's correct.

MR. WEBSTER: Right.

MR. WATSON: And it's for the potential release, not a release, potential release.

MR. WEBSTER: Was it then that there was not a release?

MR. BURRONI: There was no -- no release.

MR. WATSON: There was no release.

MR. WEBSTER: There was a release --.

MR. WATSON: The tank overflowed.

MR. WEBSTER: Yeah, the tank overflowed and released --

MS. WARNER: The tank overflowed in essentially what is --

CHAIR CONGDON: Sorry, go ahead, yes.

MS. WARNER: -- essentially what's in like a concrete bunker. And they've taken measurements in the surrounding groundwater monitoring wells and have -- have found no increase in radioactivity. And also I would offer that when we're assessing our violations for whether or not for severity level four, it's going to be a non-cited or cited violation.

One are those criteria to make it a non-cited violation is willfulness. The N.R.C. determined that willfulness did not occur in this case.

MR. WEBSTER: Right. And that's what I'm trying to understand is, why wasn't it willful, they made -- they made the decision, right, about where to survey, it was a wrong decision.

MS. WARNER: So generally speaking, I'll say people are trying to do the right thing, that generally speaking.

MR. WEBSTER: Right.

MS. WARNER: Willfulness is a very small portion of our violations. So in terms of not understanding what supposed to do versus willful, it's a very, very different territory.

MS. WEBSTER: So you're -- what you're saying is willful, doesn't mean intentional. You're saying willful means that I know the regulations say X. And I'm going to do Y.

MR. DIMITRIADIS: Willfulness, as I explained in my presentation, has to do -- has to involve evidence and our investigators determining that there's either a deliberate action or careless disregard. We did not have that in this case.

MR. WEBSTER: Right. Why was there no careless disregard in this case?

MR. DIMITRIADIS: I'm sorry?

MR. WEBSTER: Why was there no careless disregard in this case?

MR. DIMITRIADIS: Because we felt that -- that there wasn't based on the inspectors and the interactions of the licensee we just did not see that there.

MR. WEBSTER: What would it take -- what would it take for you to see that?

MR. DIMITRIADIS: I don't want to get into hypotheticals. That --.

MR. WEBSTER: No, no, give me an example from another reactor, where you've got it.

MR. DIMITRIADIS: We've had cases where the inspectors have evidence that there's potential willful misconduct. We get our investigators involved. They do an investigation and they come back and write a report.

The N.R.C. staff looks at it with the attorneys and we make a determination whether there's willfulness or not.

MR. WEBSTER: Can you send me one of those reports that finds willfulness?

MR. DIMITRIADIS: I will look to see if I can do that.

MR. WEBSTER: Thank you.

CHAIR CONGDON: Thank you. I'd like to move on to the next item on the agenda, which is the options analysis, by Lave -- Dave Lochbaum. Dave, welcome. And you may begin.

MR. LOCHBAUM: Well, first, I want to follow-up on Richard Webster, just comment on willful. A good example is a lot of falsified fire protection rounds, where -- if fire equipment is out of service, you have a worker go around and be a human smoke detector.

Sometimes people falsify those records,

they say they did the rounds when they didn't. So that's a willful violation, you're supposed to do something that you clearly choose not to do it. So there's quite a few of those.

Tom, okay, could you call up my slides please and slide two, please. What I did this time was I looked at the two leading options for disposing of the contaminated water at Indian Point. What the practices has been used for decades, and one alternative which is storing contaminated water on site to allow decay of the tritium.

In both cases, I assumed that the water would be treated first to remove as much of the other radioactive material, the strontium, that the cesium and so on. And the only thing left -- largely, the only thing left will be the tritium in that water.

And what I tried to do with the discussion earlier about ALARA and an approach to zero, I didn't try to see which ones match the three millirem per year or the 20,000 picocurie. I wanted to see which of those two options was likely to achieve the lowest amount of tritium exposure to the public.

Next slide please. As Tom Congdon mentioned at the onset, we did invite -- I did invite

six individuals to peer review the project, three of those persons were able to do so, one like -- wanted to remain anonymous.

And did, Paul Blanche also agreed to do a peer review and Jeff Mittman did a peer review and I benefited from all three, from the comments from all three. Their written comments are attached to the slides that will be posted on the D.O.B. website.

I was particularly glad to have Jeff Mittman review the material because I do a risk analysis. And Jeff spent a lot of his final part of his career with the Nuclear Regulatory Commission as a risk analyst for the agency.

And I wanted to make sure that I didn't get the context wrong. And so that was appreciated. Also benefit -- benefited from Paul and the anonymous person as well, but. So they all added value to this presentation and if any mistakes were made, they're mine.

Next slide, please. Also invited Arnie Gunderson, Lucas Hickson and Martin Resnikoff to review it, but they were unable to do so in the -- in the timeframe. Lucas was actually in Fukushima sampling the environment around the accident site

there as he's done in this, some places in the United States as well as Chernobyl.

And Arnie provided some written comments to a different group that I received today or yesterday, a little bit too late to factor in today's presentation. Next slide, please. I did look previously on February 2nd, during the D.O.B. meeting of February 2nd, I looked at these two options, I'm revisiting today as well as evaporation and transport off site, as was or will be done at Vermont Yankee.

Since February 2nd, also looked at removing tritium from water which Tom Congdon mentioned earlier, is being done with heavy water reactors, vitrification, both here and in France, ocean dumping and onsite injection wells. And for the very summarized reasons here, none of those options seem to be a leading candidate.

Next slide, please. Paul Blanche did provide a comment that I missed an option that needed to be evaluated. And that was simply to retain the water in the spent fuel pools on site, at least one of the spent fuel pools.

The real reason for doing that would be to allow retrievability of dry cask or the canisters

within dry cask, in case they needed to be unloaded. Paul and the N.R.C. have a disagreement over what that regulation says.

Paul, almost alone, believes that it means you have to be able to retrieve individual fuel assemblies. The N.R.C. and the rest of the world believe that it means you have to be able to remove the canister and transport it off site if and when D.O.E. is able to take them.

But there's other reasons why that would not be a great idea. Even if the N.R.C. had a different definition. Most importantly, was the last one. If you have to unload a canister, it's probably because the canister degraded.

And all the mechanisms for moving canisters assumes that canisters are pristine or undamaged, lifting it up and putting it in the spent fuel pool. If you were to drop it would be an unanalyzed condition that probably wouldn't be good. So why take the risk.

Next slide, please. This is information from Holtec's presentation at --at the April 27th, D.O.B. meeting. The amount of water that's available in the various places that’s in unit two, unit three,

spent fuel pools and reactor cavities.

In that presentation, Holtec indicated that because of the Hi-Lift crane, water was going to be transferred from unit three over to unit two for processing in tanker trucks. I've since heard that Holtec is considering a skid to treat the water in unit three so those transfers won't happen have to happen.

So there's a potential change in how that water is -- is handled. Next slide, please. I also -- from that information, he provided dates on target dates for disposing of the water, I also have some updates on -- on those, the spent fuel pool dates, best I can tell are still on target.

The reactor cavity dates have both slipped about two years. For unit two, it's -- the current date is August of 2027. And for the unit three cavity, it's September of 2026. And Rich Burroni, if I committed you beyond that, please correct me. But that's my understanding of the current schedules.

MR. BURRONI: No, that's correct.

MR. LOCHBAUM: Thank you, Rich. Next slide, please. There's been some discussion, the unit one spent fuel pool at Indian Point was disposed

-- treated and disposed of in September of 2008. This is information from that campaign that showed the radioactivity in the water before the treatment, the radioactivity in the water after the treatment.

In basic, it's filtering in the treatment is pretty good at removing cobalt and strontium 90 and so on, but didn't remove any of the tritium from the water. It's -- as somebody said earlier, it's difficult to remove water from the water.

So it did not filter and did not do anything with the tritium in that water. And there's about 400 curies of tritium in those four volumes to be dealt with at Indian Point. Next slide, please. I looked in the past, those annual reports that Bruce Watson's mentioned, actually went all the way back to 1966, which shows I really don't have much of a life and looked at those annual reports.

And this is a table from the early '16. And most of the filtering is pretty effective at removing everything but the tritium. So the major element that's going out in the water being discharged to the Hudson River is tritium.

Mostly the other stuff has been removed by the filtering. So that 2008 spent fuel pool campaign

wasn't an isolated case. It's pretty much the rule, not its exception. Next slide, please. As the water is being treated and processed, as it's been done for decades, if there was to be spill as the holdup tank of May 2020 showed, it would be kept in the building housing that equipment and it wouldn't likely make it into the environment.

If it were to leak out somehow, there are monitoring wells around the buildings that would detect the radioactivity redirect the water, you know, getting into the ground. If it leaked, if any of the water evaporated because tritium is basically invisible to the detectors used like the Reuter-Stokes, you wouldn't see it as it went by.

Next slide. After the water is processed to remove virtually everything but the tritium, it's stored in a tank of nominally 18,000 gallons, the water inside that tank is circulated to get a uniform mixing before it is sampled.

The sampling then determines its isotopic content, how much strontium and cesium, whatever if there's any in it, the sampling determines what the contents are. If it's suitable for discharge, if it meets the 3% ALARA or 1% goal, whatever the limit is

of the day then it's able to be discharged.

If it's able to be discharged it's pumped at a rate of about 150 gallons per minute into the discharge canal at Indian Point where it's mixed with the dilution flow of at least 80,000 gallons per minute, before it enters the Hudson River.

In that 120 minutes to get rid of the 18,000 gallons, the dilution flow will be close to 10 million gallons of water. An average of -- as the N.R.C. pointed out in April 27th, an average of over 100 batches were discharged annually between 2005 and 2021.

Next slide. This slide was plagiarized from the N.R.C.'s presentation on April 27th. The bars show the amount of water discharged, the green line shows the number of batches per year. To get rid of 1.3 million gallons at 18,000 gallons per batch, would take about 75 batches.

So there's less than the average number of batches left to be dealt with at Indian Point. Next slide please. The yellow across the bottom of this graphic shows the discharge canal that the Hudson River is off the slide to the bottom.

And basically one of the circulating water

pumps that were used during reactor operation provides at least the 80,000 gallons per minute of dilution flow into the discharge canal with which the treated water would be mixed before reaching the Hudson River.

Next slide, please. With this dilution, the concentration of tritium in the water reaching the rivers averaged 518.7 picocuries per liter. In comparison the E.P.A. drinking water limit is 20,000 picocuries per liter.

So it was a small fraction, not zero but a small fraction of the E.P.A. drinking water limit. Also point out that Holtec and Entergy before them, did not take credit for further dilution by the Hudson River, which is a pretty large river, both long and flow.

And but Entergy doesn't take credit for that, they only look at the dilution flow, they provide that approximately 10 million gallons and whatever is mixed with it. Next slide, please. The other option, the alternative I looked at was, what is being talked about or advocated most often recently and that's storing it on site after it's been treated before doing something else down the

road.

Next slide. The question associated with that is how many tanks would be needed. It depends on how big the tank is, one very large tank could hold all the water. If we had 22,000 gallon tanks, it would take 60 of them. And that's important for the next slide.

Next slide. This is the off-site dose calculation manual for Indian Point that Bruce Watson mentioned. It's the Bible that controls what they do, and how they do it, and their regulatory limits. They're not just desires, they're regulatory limits that the N.R.C. finds that they're not being met.

One of those violations from the enforcement policy would -- would determine what kind of sanction, if any, was applied. Paul Blanch, during his peer -- peer review caught a mistake of mine that's been corrected on this slide.

It has to deal with that footnote that's highlighted in yellow. Paul caught the point that I missed that there's a -- the -- the off-site dose calculation manual limits the amount of tritium or the amount of curies that can be stored in an outside tank to 10 curies unless it's tritium.

There is no limit if -- if the water is all tritium, in that case all the curies could be put in one very large tank. Otherwise, you'd have to break it into a bunch of smaller tanks to meet the 10 curies. Paul caught my mistake and fortunately, before now.

Next slide, please. The reason for the 10 curie limit for outside tanks is that they can leak. They could rupture, they could overflow, they could do all kinds of things that water goes to places it shouldn't be.

So unless you had a surrounding liner, dike, or wall or some way to keep spilled or leaked water from reaching the environment you -- the ODCM limit your tritium content or your curie content to 10. It doesn't apply to tritium, you could put it all there, whether it's got a protective features or not.

Next slide, please. And this is the part I had Jeff Mittman review it because I wanted to make sure I got this right. If -- if I assume a 99% chance that tanks do not fail during their storage period. And I'm assuming a storage period of 12 to 15 years, if I assume that there's a 99% chance of a

tank not failing and below shows the chances of failure over that storage period. If you have one tank, 99% chance of not failing means you have a 1% chance of failure.

If you have 10 tanks, the chance of failure is just under 10%. If you have 50 tanks, you're now approaching a 40% chance that at least one of those tanks fails during that storage period.

In -- what I don't understand is Holtec isn't trusted in a number of ways. If you can't trust them to treat and discharge water to the river according to our one percent ALARA standard or 3% percent. I don't know how you expect them to store water in tanks with a 40% chance of failure over 15 period.

It just -- I don't understand that logic. But we'll move along. Next slide, please. Risk is defined as the probability of something bad happening and the consequences if it does happen. Turns out it even though the chance of failure varies between one tank and 50 tanks, the overall risk is about the same because if one tank fails, it's a very large tank and discharges all its contents.

The fact that it's 1% chance, the risk is

13,400 gallons, 50 tanks, it's 10,500 gallons, so the risk is about the same. I need to point out that the consequences are the assumed worst case release of the entire contents of the tank, which is the least likely thing to occur.

So I looked at what it is likelihood of the least likely thing happening. Next slide, please. I looked at water storage at Hanford and Fukushima. Hanford has both single-walled tanks and double-walled tanks, 38% of the single-walled tanks have leaked, only 4% or 3.5% of the double-walled tanks have leaked.

But that's still higher than the 1% failure that I assume. At Fukushima six of the first 305 tanks installed there have leaked. I had trouble finding more recent data. They talk about leaks but they don't tell about how many tanks have leaked and how many tanks are there.

So we know that they had a lot of incentive to try to get it right. They came up somewhat short. My next slide explains how some of these leaks have occurred or could occur. These are real plants in the United States in reported history, Vermont Yankee, before they trucked it off to Idaho they

managed to overflow one of their tanks and dumped 83,000 gallons of contaminated water into the Connecticut River, took them two days to figure out that was happening.

It had a net 140,000 gallons leaked into the discharge canal when a truck ran into the -- one of the storage tanks. The truck won, the tank lost. In Vermont more recently they overflowed a condensate storage tank because the level instrumentation failed and they put more water in it, than the tank was designed to hold or could hold. That happens a lot.

That was a contributing factor to the May 2022 event at -- at Indian Point. The level instrumentation for the holdup tank was inaccurate. And they tried to put too much water into it. This is a very abridged list, a longer list is about six pages long. It happens quite a bit more often than you would think. But it's a reality.

Next slide, please. There's been some talk about using bladders inside the storage tanks to basically provide a second barrier, both the bladder and the tank would have to fail for the contents to leak into the environment.

So the question is how good are these

bladders. Next slide, please. According to the state of Washington, the average bladder last five to seven years, which is good if you're storing it for four years. It's not so good if you're storing it for 12 to 15 years.

Next slide, please. And at Indian Point it'd be looking in the rearview mirror because the condensate storage tanks at Indian Point in the primary water storage tanks originally had bladders. The bladders removed because they failed.

So bladders are a nice idea that don't work exceedingly well in practice. Next slide, please. Now, the question is whether you have one tank or 50 tanks or whatever how many tanks, where would you put them?

If you had five tanks and each tank was 20 foot tall, they would need the diameters of nearly 24 feet in order to store the water they would need to hold. That's a pretty big footprint. Next slide, please.

I used the Oak Ridge study, the natural gas pipelines presumably wouldn't want to put the tanks within the potential impact radius of a pipeline rupture. If one pipeline has crossed the top is --

would that impact zone highlighted in blue, you'll notice at the very top of the screen, top center is the ISFSI or dry storage cask in a parking lot slightly to its right.

Next slide shows the same thing for the other pipeline. So pretty much the center of the property would not necessarily be a good place to store cask, if you're worried about natural gas pipelines or tank ruptured might be able to put out the natural gas fire, maybe that's a good thing, I don't know.

Next slide, please. Another consideration if you're putting tanks that have are known to leak, you might want to be able to know when that leakage occurs. This is a slide, it's difficult to read but it shows the monitoring well locations.

Most of them are located around the buildings because that's where the water was. If you build tanks in the southern plain zone, there's not many monitoring wells that would alert you to a leakage from a tank in the formerly clean zone in the south.

So maybe you want to move the monitoring wells or install different monitoring wells or avoid

the tank storage site risk altogether. Next slide. Now, I looked at there's two options delay versus discharge, discharge is what's being done now in the past 50, 60 years and the onsite storage is a delay feature.

If you do the discharge option, you're getting rid of about 400 curies into the Hudson River after treatment, well below the E.P.A. drinking water standard of 20,000 picocuries per liter. If on the other hand, you stored on site for 12.3 years, that's just the half life of tritium.

That means that approximately 400 curies would decayed only 200 curies of tritium left in that water. So 200 curies would no longer be a hazard to anybody because it's decayed away. So we have and I -- I made it as big as I could because it's a big if, none of the tritiated water leaks or evaporates or spills from the tanks during this 12.3 years.

Then it would yield -- and then the water after that 12.3 years is then released to the Hudson River, it would be lower closer to zero but not zero hazard to public health. Next slide, please. I then looked at what would happen if a gallon of water today being treated and released to the Hudson River

compared to storage for up to 12.3 years.

You -- if you wait, it's going to indicate that curies per gallon drops to half of what it is today by the decay of tritium. Next slide. If you're doing 74, roughly 75 batches to get rid of the 1.34 million gallons, that'd be about five curies per batch.

And it'd be a whole bunch of zeros 559 curies per gallon in the water that's being discharged to the Hudson River. Next slide. If on the other hand, you store it on site for 12.3 years, then it would be half of that discharge to the Hudson River after the 12.3 years.

But if it evaporated or leaked in the meantime, from those storage tanks, the concentration of tritium in the each gallon being leaked or evaporated would be 267 to 534 times greater than the concentration in the gallon being discharged in the Hudson River today.

It's a big bet in my mind, if you avoid evaporation leaks and spills of storage on sight. History does not show that that's a likely outcome. Next slide please. If it did leak or spill from the storage tanks, the topography as with the buildings,

it would likely migrate into the river.

But it wouldn't be mixed with 80,000 gallons per minute to dilution flow so it'd be a much more highly concentrated form of content of tritium reaching that water. So the swimmer, the drinker, the kayaker, whatever, would not benefit from a much lower concentration.

The analogy I use however appropriate or inappropriate is, by sad experience, I can survive a bee sting. I don't know if I could survive a bee 267 to 534 bee stings in a short period of time. I don't -- I don't attempt to try to find the answer to that question.

So I think my conclusion that is a gallon of water treated and released today poses lower risk to public health than storing it on site and hoping that it doesn't evaporate, leak, or spill during that storage period, whether it’s 12.3 years or longer.

That history just says that those are long odds with -- with too much at stake to -- to up the ante. Thank you.

CHAIR CONGDON: Thank you, Dave. So, can you hear me, Tom Congdon, any questions for Dave?

MAYOR KNICKERBOCKER: Yeah, I have one,

Theresa Knickerbocker. Dave, hi, how are you?

MR. LOCHBAUM: Fine, thanks.

MAYOR KNICKERBOCKER: You had also said with these storage tanks that they have to be ventilated, so they would -- they would vent through the top of the tank.

MR. LOCHBAUM: Yes, the tanks are vented to both prevent a collapse. If a vacuum forms inside the tank and the water cools or bursting if pressure gets too high inside the tank. So there's a -- there's a vent that allows air in to prevent a vacuum and air out to prevent overpressure.

If it's the converse, with air is being vented out, some of that air will be tritium vapor, which is -- could go far and wide or fall into reservoirs, fall anywhere.

MAYOR KNICKERBOCKER: So it would be vented through the top. It's a windy day, wherever the wind takes it. It could also be distributed around the ground. I think you said at one point.

MR. LOCHBAUM: Yeah, it's -- I think it's for the February 2nd, when I looked at evaporation which was done at Three Mile Island. And the N.C.R.P., the National Council on Radiation

Protection analyzed the evaporation versus treat and release to the Susquehanna River.

And because of tritium falling back to the ground tritium vapor falling back to the ground, getting into foodstuffs, drinking water, et cetera. The dose to the public from evaporation was three times -- 300 times higher than the dose to the public from discharge to the river. So it seemed like it was paying a lot for less protection.

MAYOR KNICKERBOCKER: So it's not sounding like the tanks are a viable solution for us.

MR. LOCHBAUM: I -- I wouldn't -- if -- if the goal is to reduce the -- the radiation dose to as low as achievable, that would not be the best way to do it, unless you're very, very lucky and none of the tanks ever leak, evaporate or spill, which even a blind squirrel finds a nut. I'm just not sure that's going to happen in this case.

MAYOR KNICKERBOCKER: That's a good analogy, I guess, thanks. Thank you, Dave.

MR. LOCHBAUM: You're welcome.

CHAIR CONGDON: Richard?

MR. WEBSTER: Thanks, Tom. Hey, Dave, thanks. How're you doing? Sorry, couldn't be here

in person.

MR. LOCHBAUM: All right.

MR. WEBSTER: Seems like this analysis -- seems like this analysis, the critical variable here is the failure rate of tanks.

MR. LOCHBAUM: That's correct.

MR. WEBSTER: And I think you did have some peer review that says the failure rate that you've used is kind of high. And that if you look at an analysis of failure rates in industry, they should be considerably lower than one percent.

MR. LOCHBAUM: Yes, that was -- with that person who made that -- that was the anonymous peer reviewer, who was unaware of the leaks at Vermont Yankee, St. Lucie, Browns Ferry, had no awareness of any of those leaks, did not even know the leak that occurred in February of 2009, at -- at Unit 2 Indian Point, where the leak rate was 14,000 gallons per day, did not know about that.

So and that's why I had Jeff Mittman, who is a risk analyst, looks at events, looks at history, gave me a thumbs up where the other person used a different finger.

MR. WEBSTER: Right. I was going to say,

is there -- is there any actual data on this that you've looked at?

MR. LOCHBAUM: No, after that first comment that I needed, I went back and looked at the Nuclear Regulatory Commission and other websites. The Nuclear Regulatory Commission has initiating rates on fires, broken pipes, mispositioned valves, et cetera. But not on storage tanks, no.

MR. WEBSTER: Right. You might -- you might find some, I mean, I used to do risk assessment of oil facilities and gas facilities.

MR. LOCHBAUM: I did find it for the American Petroleum Institute does have a failure rate for petroleum tanks but I wasn't sure. I was fearful of doing the apples and oranges thing.

MR. WEBSTER: Why?

MR. LOCHBAUM: Because this is petroleum.

MR. WEBSTER: Well, talking about that the Hanford tanks really, I mean, the Hanford waste is pretty corrosive, right, so that's really not a good. And the tank -- most of those single walled tanks are very old.

MR. LOCHBAUM: Yeah.

MR. WEBSTER: So then the Hanford aren't

really comparable, right?

MR. LOCHBAUM: Well, they're very old, but they -- they didn't wait until now to leak.

MR. WEBSTER: No, no.

MR. LOCHBAUM: They did leak shortly after the --.

MR. WEBSTER: But -- but I mean, this, the service life is the type of the waste and the service life is important, right?

MR. LOCHBAUM: Yes, yes.

MR. WEBSTER: So those --.

MR. LOCHBAUM: Go ahead, I'm sorry.

MR. WEBSTER: That's all right. The last I want to ask you really is obviously Indian Point have a lot of tanks on the site, right, the condensate storage tank, other tanks. Are there no tanks around that we could repurpose for the purpose of storing this water?

MR. LOCHBAUM: The condensate storage tanks, I believe were about 600,000 gallons each capacity. So even in the unit two the northern tank, I can't remember which unit it was, it's been removed. So it's no longer available.

The other tank has not yet been removed.

There -- some of the other tanks that weren't built to withstand earthquakes have been removed are still there. But they're not designed to withstand an earthquake, the condensate storage tanks were seismically designed.

MR. WEBSTER: Right. So there's one of them still left, is it full of water?

MR. LOCHBAUM: I don't know for sure.

MR. BURRONI: Yes.

CHAIR CONGDON: Sorry is there an answer?

MAYOR KNICKERBOCKER: He said yes.

MR. SIPOS: Could you repeat that, please, Rich?

MR. BURRONI: Yeah, it is full of water. But if you want to use additional tanks onsite, then you're expanding the protected area of the site. And so partial site release as far as acreage is concerned, gets reduced.

CHAIR CONGDON: I think Senator Harckham had a question.

MR. HARCKHAM: Yeah. Thank you, Dave. First of all, thank you for all you do for the oversight board. You're --

MR. LOCHBAUM: Yeah.

MR. HARCKHAM: -- you're not compensated and you do a ton of work for us. And, you know, whether people agree with you or disagree with you, no one can doubt your -- your commitment. And we thank you for that.

MR. LOCHBAUM: Thank you.

MR. HARCKHAM: Someone wanted me to ask you a question. If we can jump back just a little bit, you know, we spoke about vitrification at one point, which was a different process than what I'm going to talk about now.

But I believe in -- in Vermont, the water was mixed with clay. And then, it was taken to one of the two nuclear waste sites in the country and used as a cap. Did you -- did you do any analysis of that as -- as a possible, you know, it was certainly done once. So do you think it's viable or is it safe?

MR. LOCHBAUM: That was -- I did look at that for the February 2nd, D.O.B. presentation. And my understanding was the concept was to transport the water to Idaho, and then, mix it with clay and bury it in Idaho.

And it was like 47 million pounds of

radioactive mud that was developed. In order to get the water there, they had to – they being the the owner had to get the N.R.C.'s permission because federal regulations don't allow you to transport water because of the risk of an accident in route.

But they did get -- the N.R.C. approved the exemption from the regulation, assuming that no accidents could occur, which is -- is a tenuous assumption. I'm not sure I'd bet -- particularly the number of shipments they had, it was over, it's like 2 million gallons of water.

MR. HARCKHAM: Right. So the mud -- the mud concoction was not done onsite. It was the issue I'm talking thousands of truckloads of water.

MR. LOCHBAUM: You see, I think it was rail shipments. But yeah, it took a lot of rail shipments to get it out Idaho.

CHAIR CONGDON: And senator --

MR. HARCKHAM: We trust C.S.X. so much.

CHAIR CONGDON: And senator, Vermont Yankee has a rail spur off the site, I believe and that is not the case at Holtec. But N.R.C. is here. Do you want to speak at all to the exemptions that were provided to Vermont Yankee or can you?

MR. WATSON: I can speak in general terms, yes. We -- we did issue an exemption, I think the most recent one was up to 2 million gallons. It shipped by rail. And it is shipped water. Our analysis showed that if the water was to leak from the tank car, the safety significance would be very low in the dose consequence but you would know about it.

But the point is, is that they're shipping the water to -- to Idaho. It's a semi-arid facility. So we have an exemption for that, we also have a what's called a 20.202 alternative disposal criteria we use, which we analyze the dose not only from the material that's disposed of, but also the effect on the doses to the workers that do that kind of work.

And we also approve that for -- for the transport of the water and the disposal of the water. The Idaho site is really a RCRA landfill facility. It's not a state license low-level waste disposal site. So it's -- they accept this, Idaho approves it. The state of Idaho approves the -- the disposal also. It's just not a unilateral decision by the N.R.C.

MR. HARCKHAM: Can I follow-up real quick,

and then, again, just for my edification, what did they do with the water once it gets to the site in Idaho?

MR. WATSON: They mix it with the clay and may -- they may either use it as a cap, they -- they have different methods they use whether they can also put it and put clean soil over it, which is generally what they must do with most materials.

There is a cost with that, I can tell you that. And --.

CHAIR CONGDON: Do you know the cost?

MR. WATSON: No, I don't. But it is not an inexpensive proposition. I can tell you that.

CHAIR CONGDON: Do you know how long it took for the N.R.C. to review the exemption requests?

MR. WATSON: We had an exemption request, I want to say six to nine months on the first one. And the second one was just the larger volume. So it's just, you know, extending it out over time. So in the amount of activity that was going to be disposed of, so I don't recall taking that.

CHAIR CONGDON: I believe it was about 18 months --

MR. WATSON: Yeah.

CHAIR CONGDON: -- on the second one.

MR. WATSON: Yeah.

CHAIR CONGDON: Assemblywoman LEVENBERG, did you have a question?

ASSEMBLYWOMAN LEVENBERG: I have a couple, yes. Thank you. And thanks, Dave. I appreciate your volunteerism.

MR. LOCHBAUM: You're welcome.

ASSEMBLYWOMAN LEVENBERG: You had mentioned that Krypton-85 that the treatment process only removed 80% of this. And I was wondering if you could comment at all if we can expect this to be present in the effluent from Units 2 and 3 and how many total curies of Krypton-85 exist in the effluent onsite, if you know that?

MR. LOCHBAUM: I don't -- I'm afraid I don't know those numbers. One that similar, but not exactly the same is tritium. Krypton-85 is a noble gas. And it's kind of difficult to filter out. That's why it wasn't as effective as the cesium and the strontiums, which were basically 100% removed, Krypton's a little bit more challenging.

ASSEMBLYWOMAN LEVENBERG: But we don't know and maybe I don't know, the health person can comment

on what the health and environmental impacts are of Krypton-85, not getting all completely filtered out?

MR. WATSON: By health person you mean us?

ASSEMBLYWOMAN LEVENBERG: Is that -- I don't know is that, you said --

CHAIR CONGDON: N.R.C., you want to --

ASSEMBLYWOMAN LEVENBERG: N.R.C.

CHAIR CONGDON: -- tackle that?

MR. WATSON: Yes, this Krypton-85 is a noble gas. We look at it pretty much from an inversions in -- immersion dose, it's typically a beta emitter. And it -- like I said, it's not -- it is a noble gas. So therefore, it's not really needed by the body for to use.

So it's pretty benign from that standpoint, from a biological standpoint. But it is a noble gas and it has no real biological use in the human body. So we -- typically we look at noble gas as though as in a gas form as an immersion beta dose to the skin.

And so it's -- it's pretty insignificant from a dose consequence standpoint so.

ASSEMBLYWOMAN LEVENBERG: And what about for the environment?

MR. WATSON: Same thing, it's a inert gas.

It's a -- that's what emitted all the Kryptons and Xenons are emitted during reactor operations. It's a fission product. And those are emitted into the atmosphere through the gaseous effluents. And they're measured and monitored, so.

ASSEMBLYWOMAN LEVENBERG: Thank you.

MR. LOCHBAUM: Perhaps what I can do is go back see the older reports and see how much Krypton-85 was released to the air and water over the past three or four years because I just don't know the numbers off the top of my head, but I can get that for you.

ASSEMBLYWOMAN LEVENBERG: Okay. And Dave, one of the questions I asked earlier the N.R.C., I just wanted to ask you as well. Do you think that there's a difference between the effluent that was released as part of the normal operations as -- as compared to what would be released from the spent fuel pool from Units 2 and 3?

MR. LOCHBAUM: It's -- I would agree with Bruce -- I think was Bruce Watson that answered that question. It's pretty much the same water. There's -- that he also pointed out that because of the timespan that some of the radioactivity has decayed

over that period of time.

So it's -- it's the same type of water, just with radioactive content. The one you also ask a follow-up question about the non-radiological content. Because sometimes decommissioning involves chemical flushing of tanks and other equipment.

There can be some non-radiological chemical elements in the water that have -- that are dealt with separately. But I mainly focus on the radioactive content.

CHAIR CONGDON: Oh, go ahead.

MR. CREIGHTON: Excuse me. Go ahead, I'm sorry.

ASSEMBLYWOMAN LEVENBERG: Yeah.

MR. CREIGHTON: Yeah.

ASSEMBLYWOMAN LEVENBERG: Did you want to follow-up on that?

MR. CREIGHTON: No, I had a separate question.

ASSEMBLYWOMAN LEVENBERG: Okay.

MR. CREIGHTON: I'd like to ask Dave.

ASSEMBLYWOMAN LEVENBERG: Okay. I had -- yeah, I just had some more. So the -- one of the peer reviewers had said the entire evaluation rests

on the assumption that the quantity of tritium that needs to be discharged is 400 curies. How can be -- we be confident in this assumption --?

MR. LOCHBAUM: Yeah, that was Jeff Mittman's comment. I remember that. I took it on Rich Burroni's slide from April 27th. Some confidence that I have that that's in the ballpark is it's consistent with what was treated from various volumes in the past, 459,000 gallons were discharged from the unit one spent fuel pool. And the tritium content was in it.

So I -- I have no reason to doubt it based on past experience but I wouldn't swear on a Bible that 400 -- 400 was the right number. But I think it's -- I have no reason to doubt that it's not in that ballpark.

ASSEMBLYWOMAN LEVENBERG: Okay. Thank you.

MR. LOCHBAUM: Thank you.

MR. CREIGHTON: I have a quick follow-up question.

CHAIR CONGDON: Yes, Jim.

MR. CREIGHTON: You just mentioned the -- the non-radiological items that might be leftover in the water. It -- was there any review or do you have

any -- any thoughts on -- on P.F.A.S. and whether or not that would be filtered out of the water before it's discharged into the Hudson?

I know that wouldn't be an N.R.C. issue. But P.F.A.S. is certainly something we're very concerned about in New York State.

MR. LOCHBAUM: I, to be honest, I'm a one-trick pony. I've looked at the radioactive side. I just don't really, couldn't even pretend to be an expert on this. So I just -- I just don't know one way or the other. Sorry.

MR. CREIGHTON: But that's something we should study, I assume, right?

CHAIR CONGDON: Jim, we're going to, in the next presentation, talk about the D.O.H. sampling protocol. And I think we can get into that a little bit.

MR. CREIGHTON: Great.

CHAIR CONGDON: In fact, if there are no other questions for Dave, perhaps we should -- I'm sorry. Bruce Watson had a question.

MR. WATSON: Yeah. I really liked your presentation, David, really appreciate it. The one question I have is, if you're looking at storage of

water in tanks for long term, I know there's some A.S.M.E. codes and other requirements for doing weld inspections and inspecting the tanks for leaks.

I know during an operating plant, when the refueling water tank is emptied and is in -- the waters in the refueling pool, you know, the operating plant normally does the in-service inspection, well checks of the tank during that time period.

So if you have, you know, X number of tanks, you know, I don't know if you looked at the time period for those requirements for doing tank inspections and weld inspections. And would that make possibly, you know, I don't know if you looked at it but, you know, it could possibly require you to have extra tanks to transfer water around while you inspect another tank.

Which would also eat up that footprint of the -- that from the partial site release, so --.

MR. LOCHBAUM: It's a good question.

MR. WATSON: More storage for water.

MR. LOCHBAUM: It's a good question.

MR. WATSON: For water.

MR. LOCHBAUM: I haven't looked at that. I did look at various requirements for the A.S.M.E. and

American Society of Mechanical Engineer and other standards. Some states have standards for tanks in their -- in their states.

I didn't look at it from the aspect of would that require you to change how many tanks you had in order to meet those requirements, it's a -- it's a good question. I'll do some follow-up. I just hadn't looked at it.

MR. WATSON: Yeah. Thank you.

CHAIR CONGDON: Senator.

MR. HARCKHAM: Thank you, very quickly, I -- I just want to follow-up on what the deputy supervisor was saying about the other elements. And you don't have to answer me now. But maybe in the D.O.H. presentation or the D.E.C. presentation.

Are those other elements, the non-radiologicals covered in the SPDES permit, where we know the radiologicals are not. But again, you can wait to get your report or you can answer now, thanks. Thank you.

MS. TURTURRO: I can answer now. Kelly Turturro from D.E.C. So senator as part of our SPDES renewal process, those are all things that we're looking at in terms of the non-radiological

components. In addition to what -- what Alex will present in terms of our sampling for all the SPDES permit limits, as well as the E.P.A. priority pollutants.

And just while I have the floor, if I could respond to the P.F.C. question, I know, Assemblywoman LEVENBERG asked the same question. That is something that that we are also looking at through our SPDES permit renewal process.

MR. HARCKHAM: Thank you.

CHAIR CONGDON: Excellent, thank you. Mayor?

MAYOR KNICKERBOCKER: Thank you, Tom. We have discussed this several times at -- the D.O.B. meetings about the tanks on the property. I've had conversations with our village board. I've had conversations also with our building inspector Dan -- Dan Stewart, our trustee Dan Stewart is here this evening.

I think, we are taking that off of the table. There will be no tank stored there. We're talking about, you know, all we hear about is gas pipeline. During the operation of the plant, we've heard earthquake possibilities. For anyone to even

think and the people that either have said this before about the gas pipeline, the earthquake, the Ramapo Fault to even suggest that is ludicrous.

And I'm just shocked that the same people that beat that drum actually would recommend something like that. So I will tell you the village of Buchanan will not, at all, ever issue a permit for any tanks. So as of this evening you can take that off of the checklist. Thank you.

CHAIR CONGDON: Thank you. So moving on to the next item on the agenda. Thank you, Dave.

MR. LOCHBAUM: You're welcome.

CHAIR CONGDON: Alex Damiani is here from the New York State Department of Health. As we discussed at the April meeting, you know, based on the State's assessment of the Holtec plan to discharge to the river, we've talked about the D.O.B. role in looking at how we can fill, what we can recognize as potential oversight gaps within, you know, jurisdictional limitations.

And one thing that came through, and I think some folks have -- have commented on that among the D.O.B. and from community is, the concern about what is actually in the water and how we can be sure,

you know, Holtec's reports or Holtec's sampling is accurate.

And so given that, we've had for some time a Department of Health's surveillance program where there have been split samples taken at the site and at environmental locations on the river, we felt that there was an opportunity to really ramp that up. And we've talked about a new sampling protocol that would basically, you know, really enhance what has been done in the past.

And D.O.H. and D.E.C. have together worked on developing such a protocol and Holtec has voluntarily agreed to provide for split sampling. And so to present where we are on that assignment, Alex is going to take -- take this part. So Alex.

MR. DAMIANI: Thank you.

CHAIR CONGDON: Thank you.

MR. DAMIANI: Thank you. I'm Alex Damiani with the New York State Department of Health.

CHAIR CONGDON: Speak up, Alex.

MR. DAMIANI: Sure -- sure. I'm Alex Damiani with the New York State Department of Health and I want to go over the independent sampling protocol that we have. If you could do the next

slide, Tom. So thanks to Kelly, we did enter into an agreement with Holtec that will outline a protocol for sampling both radiological and non-radiological effluence from the Indian Point facility. Next slide, please.

So what are we going to sample? That's kind of the first question, right? So looking at what effluence we are going to sample, we are going to take two samples from both unit two and three spent fueled pools, unit two and three, reactor cavities. And unit two and three, refueling water storage tanks.

Now, this is in addition to the routine surveillance we do as well, right? So that -- that at the site discharge canal, the Ralston control. And we do a Verplanck Marina collection as well. So those ones will still remain. Next slide, please.

So how will the sampling occur? Well, the effluent will get treated. It'll be transferred to the liquid waste processing system. And there it will be processed before it is sent to the discharge canal, right.

So what we will be doing is, is we will be taking a sample at that point after it's been

processed and that will be initially before they want to discharge anything. And then, at the 50 percent mark after they've been discharging for a point and they -- they hit about 50 percent in that -- that given partition of water. Next slide, please.

So how is this going to be taken? Well, we will go onsite. We will observe the Holtec staff. Actually, take the sample using their equipment. We will get a sample, they will have a sample. Our sample will go to our labs, Wadsworth labs in -- in the State Health Department.

And they have a commercial lab that they use for their service. Both labs go through very similar E.P.A. approved protocols for testing most of these things. And Holtec has agreed to wait no more than 12 business days from the time we get that sample to the time we get results. It takes us one to two weeks to get results for most everything.

A few things do take longer and I'll mention that on the next slide if we can go there. So what are we looking at? That's kind of the -- the critical stuff, right? What are we actually testing? So tritium, straightforward, we do that generally, gross alpha/beta strontium 89 and 90, those ones take

longer and they take one to three months to get accurate results for, we're doing an in-growth count on the Yttrium-90 actually, for that.

And we also do Gamma Spectroscopy. So the tritium, the gross alpha/beta, and the Gamma Spec are generally done within seven to 10 days a very typical turnaround time. And I think we list -- yeah, we do have a -- in footnote here, we do have a list of the E.P.A. methodologies, if you're interested. Those are all published on the E.P.A. website. All right, so -- and next slide, please.

Okay. And Kelly can slap me if I get anything wrong here. So as far as the -- the non-rad component D.E.C. will use a contract lab and these are the list of the items. The E.P.A. priority pollutant list there is a big, long list. It's not shown here on this page, it's 26 -- 126 different chemicals that are done through mass spec, typically there.

But the P.C.B.'s, the total suspended solids, the boron, and the oil and grease components are -- are pretty stand -- I think standard elements of most SPDES. So not -- not -- maybe not the boron, too. So this will be a separate analysis.

So there will be two -- two separate reports. One for the rad component and -- and one for the -- the non-rad component. With that, I think I would open up for any questions.

CHAIR CONGDON: Thank you, Alex. And -- and Alex and Kelly, one of you, is this where the PFAS is going to be tested in this slide?

MS. TURTURRO: So we're -- we're looking at the PFAS requirements through our -- our SPDES renewal process.

CHAIR CONGDON: So in the E.P.A. priority, pollutants is -- is PFAS not among those?

MS. TURTURRO: No, I don't believe so.

CHAIR CONGDON: Okay. So how will we get PFAS analyzed?

MS. TURTURRO: So that's something that we'll -- we will do through the renewal process. We would require something like that to be sampled. But again, that's still something that we're -- we're working through the process on and we'll be having discussions with Holtec on.

CHAIR CONGDON: Got it. Thank you. Is that helpful to Jim and if someone else inquired?

MR. CREIGHTON: Would it -- would it be

sampled before a discharge in September or are we talking about a renewal sometime after? Or can we add it to the split sample testing?

MS. TURTURRO: We can certainly take a look at doing that.

MR. CREIGHTON: Okay.

MS. TURTURRO: I can talk to our technical team about that, certainly.

MR. CREIGHTON: Thanks.

CHAIR CONGDON: Thank you. Other questions for Alex or Kelly?

MS. LEVENBERG: Yes. Is the -- is the Krypton 85 also part of that or that is not?

MR. DAMIANI: Krypton 80 -- Krypton 85 would most likely not remain in the water samples that we're taking. It is a noble gas, so it's most likely not going to be something we would be able to measure. Typically, you'd measure that at the point of generation. That would really be it. It's going to go up in the air pretty quickly.

CHAIR CONGDON: So from the slide Dave presented on Krypton showing the previous analysis, and I believe that was the Spent Fuel Pool One that showed 80 percent removal of Krypton. That was based

on -- and maybe this is a question for Dave. That was based on the analysis of that pool water and report to the N.R.C. by Entergy at that time. Is that correct?

MR. LOCHBAUM: This is Dave Lochbaum. That is correct, yes.

CHAIR CONGDON: Thank you. Any other questions? Excellent. Thank you all very much. I really think it's important to get to the Holtec operational update. We've unfortunately not provided a verbal update on State oversight. We have been providing written briefs on the State oversight and it's included as part of this slide deck.

There are a number of activities the State agencies have been performing and we're really pleased with how the resident inspector is working out who's on site attending, you know, Holtec meetings, eyes, and ears on site daily. And we really appreciate that.

I don't mean to disrespect you or any of the agency work that's gone into the oversight work. But I think in the interest of time, we want to move to Holtec to get us -- get us back on schedule. We do have a hard stop tonight. So with that, I'm going

to skip over the State agency oversight updates and go right to Rich Burroni for a Holtec operational update. Rich?

MR. BURRONI: Thanks, Tom. Next slide, please. So the agenda here I'll follow is, we'll talk about the dry fuel project which incorporates our ISFSI pad status. The unit two spent fuel pool status and the status of our Hi-Lift crane. We'll talk about discharge discussion.

The split sampling MOU you've already covered that. We'll talk about vessel segmentation at units two and three, N.R.C. inspections and activities. I did note the violation that Mr. Dimitriadis talked about, but we can discuss that further if you'd like and our recent safety record. Next slide.

So from the independent spent fuel storage installation, which is our ISFSI pad, that construction has been completed as previously noted. A 127 casks are needed for the units two and three spent fuel systems and they will be stored on the pads.

Since the last oversight board meeting, the vehicle barrier wall installation is in progress.

The security support structure is in progress. An additional fence line installation is in progress.

CHAIR CONGDON: Okay.

MR. BURRONI: And prior to September 21, which is the next D.O.B., all construction activities will be completed. So the next slot -- the next slide is intended to provide an overview of the construction in progress. So we'll go through that real quick.

So there's a new security building being built. The E.E.C. is the Energy Education Center that was used to educate the public back in the day. We had to demo some of the structure on that to -- to accommodate the vehicle barrier wall.

The vehicle barrier wall was also being installed along with the additional fence line. All this should wrap up, like I said, in the September timeframe. Next slide. Excuse me.

For the unit two spent fuel pool, the defuel status, as I reported previously is complete. 896 units, two fuel assemblies and 28 casks are later -- located on the ISFSI pads.

Since the last oversight board meeting, unit two non-fuel material was transported to the

ISFSI pad using a HI-SAFE canister and the spent fuel racks, 12 in total are being cleaned as we speak. Projected activities through September 21, we'll also complete the cleaning of the spent fuel racks. We'll remove them and then we'll transport them to our waste facility in Texas.

Going to unit three, spent fuel pool activities -- excuse me, and the Hi-Lift. The high lift is the lifting device. We've completed the site acceptance test and that was observed by the N.R.C. We have also trained operators and performed dry runs of the equipment.

And the V.C.T. is a Vertical Cask Transporter. The HI-TRAC is the cask that will be moved, that'll contain the fuel. And we've completed the Hi-Lift training. N.R.C. also observed the dry run of the system this week and that was satisfactory.

Our projected activities through the next D.O.B. meeting, we will commence unit three's fuel offload on June 19th, which is Monday. And we'll have the fuel offload completed by the end of November. So if we look at the next photo on the next page, it's just the -- it's the Hi-Lift in

action. It's -- it goes very slowly, right?

But you could see as we -- we've tested that it'll go into the pool and get loaded in the pool and come back out and then get transported to the ISFSI pad. Next slide.

MR. SIPOS: Rich, could you get a little closer to the mic?

MR. BURRONI: Sure. Thanks. Well, for our discharge discussion, we did kick off a -- the meeting with the H.D.I. New York State Department of Health, D.E.C., and D.P.S., and Westchester County Executive's office rep to discuss the split sampling techniques. And -- and Alex went through that.

We -- the M.O.U. has been developed and we signed that off this week. Unit two discharge is scheduled to start mid-September. From mid-September early October, the expected discharge duration is going to take four to five months.

I'll go to unit two, vessel segmentation now. Excuse me. Segmentation of both vessels is considered a second critical path, right? Like I've described before, we want to try to capture all our radionuclides through the canisters or segmentation and transport them off site. And then, it becomes

more of a construction site as we move forward.

So since the last oversight board meeting at unit two, a steam generator, primary inlet, and outlet piping is being prepped to support chemical cleaning. We're actually going to chemically clean the steam generated tubes in unit two and unit three.

For the next D.O.B. meeting, we'll complete the steam generator primary preps for cleaning and that cleaning activity will start in November. We'll start the equipment set up to support segment -- segment act -- segmentation activities. And the upper react -- in the upper reactor vessel, guide tubes, and support columns. And we'll do a partial cavity flood up.

Going to unit three and unit one. Since the last oversight board meeting, we have completed the unit three segmentation of the reactor vessel upper support plate and the top core plate. Both of those plates were four-foot thick in diameter, they were cut into segments.

The reactor vessel upper support plate has been boxed and transported and we're working on the B.C. waste, which is the top core plate. So we're going to start boxing that soon. Projected

activities through September, we'll complete the boxing. Overall, the unit three B.C. waste.

We'll commence cutting the unit three R.C.S. piping for the chemical decontamination activities like I just described and we'll commence preparation for the unit three core barrel removal, which will occur in the fourth quarter.

So we did the upper internals, and now the next thing to -- to segment in the reactor is the core barrel itself. So that'll come out, we'll go to the lower cavity and that's where we'll start dismantling that. And then, at unit one, we've -- we actually cut a hole in the top of the head to provide an analysis, the activation analysis for the vessel itself.

And that'll provide us with information to properly classify the levels of waste of the reactor. It could be level alpha, bravo, Charlie, or greater than Class C waste. So that's what the characterization is doing now.

We'll go to N.R.C. inspections activities. Basically, no change on the L.A.R.s that we have submitted to the N.R.C. I will say on the permanently defueled emergency plan. I -- I've said

this before, but the condition of the fuel in the plant right now, right?

We will talk -- if we would enter the emergency plan, we would not require either sheltering in place or evacuation. That's the energy that's left in the fuels. It's -- it doesn't even drive us to those two extreme functions in the emergency plan.

And then, on the bottom, you could see how we have our upcoming N.R.C. inspections. A lot of these are done by Katherine. We completed the ISFSI dry run this week. Fire protection, rad waste, and financial assurance inspection was done this week.

Next week, the N.R.C. will begin to watch the initial loading of the cask. And then, we'll do our REMP and RETS and E-Plan inspection in July. ISFSI inspection in July and Q.A. safety culture inspection in August. Excuse me.

We talked about the violation and -- and Mr. Dimitriadis described that basically, we just did not verify the suitability of the Hi-Lift crane hydraulic system and crane structure to affirm a single point of failure capability. The crane assembly did not have supporting calculations or

design analysis properly documented prior to the N.R.C. inspection activities.

We entered the issue into the corrective action program. The evaluation was formally performed and confirmed a single point design capability of the crane. The N.R.C. inspection violation was then complete and satisfactory. I -- I'll wrap up with a safety discussion. Want you to know that we have safety discussions every single day. We have union-driven safety meetings on a monthly basis, so we take safety very seriously. Since the last D.O.B., we've had two first aids.

One whereas a worker sprained his ankle while working on the 95 foot of the unit containment building. Stepped over a barrier, twisted his ankle, that resolved in the first date to his ankle. And then, we had a supplemental worker drop a warehouse material on their foot, mishandled the -- the device itself.

So those were two first aids. With regards to dose year to date at unit two, our goal for -- for our employee dose is 58 rem, 58.2 rem. And year to date, we're at 31.9. And at Indian Point 3 you can see our goal was 167 with a year to date, 12.67.

That'll go up actually as we start moving fuel in the unit three spent fuel pool up to the ISFSI pad. That's all I have, pending questions.

MR. DIMITRIADIS: Mr. Chair, just --

CHAIR CONGDON: Yes.

MR. DIMITRIADIS: -- one item? Thank you. Anthony Dimitriadis, N.R.C. I just wanted to just outline two things. Number one, the inspection schedule that is there is contingent. Our -- our inspections are scheduled according to risk-significant activities that are happening on site. So if the schedule changes, then we change our scheduled inspection. That's number one.

Number two, Katherine is the lead inspector and she's there sometimes by herself, but all with a -- a team of inspectors. So I just wanted to turn to you to just -- we work together with that. You want to talk a little bit about how you decide to --.

MS. WARNER: Sure. So what we do is, we take a look at the schedule of activities upcoming and determine which risk-significant activities we want to review in addition to our annual programmatic reviews. So we do a combination each time we're on site.

So when you see an inspection schedule like that, they are preliminary and we'll move them around as necessary to ensure that we're reviewing risk-significant activities. Any questions on that?

MR. HARKHAM: Just -- just a quick follow-up. Not Holtec specific, but in -- in any plan that you're reviewing, you -- aside from the plan inspections, do you ever do surprise inspections?

MR. DIMITRIADIS: We can and we have in -- in -- in -- in various places, yes. In -- in the -- in the decommissioning world, in the decommissioning inspection, we have the -- we -- we -- we can do unannounced inspections, if that's what you're asking. And we've done that in the past. Not often, but we have.

MR. WEBSTER: Can I -- quick question? Is the state level of oversight here unusual?

MR. DIMITRIADIS: Sorry?

MR. WEBSTER: Is the State level of oversight here unusual, State level?

MR. WATSON: Yeah. Let me answer it. Yes. This is Bruce Watson. States can do what they really want to do. I -- I -- I don't know that I would call it overreaching or anything like that, that they have

the right to do what they want to do.

But you know, at various -- at various sites, we've had significant, even more State presence at sites. Maine Yankee had a -- generally had a three main -- excuse me, the State of Maine had a three-man team at Maine Yankee for pretty much the duration of the -- of the decommissioning.

There's been other inspectors that show up from time to time at the various sites from various states just showing an interest in knowing what's going on and also, you know, looking at things from their perspective. So it's -- it's not unusual to have state involvement.

Maybe not necessarily having a resident inspector, but we are talking three units here. We're not just talking, you know, a single unit. It's a lot of going -- lot of going -- lot of activities going on at -- at basically at least two of the three units at this time. So yeah. So -- .

MR. BURRONI: Well, we're picking up on unit one also.

MR. WATSON: Yeah.

MR. BURRONI: But I think to answer your question, Richard, I believe Illinois and I believe

Nebraska have a state inspectors at their nuclear plants.

MR. WATSON: Yeah. I know Illinois will be there periodically, just like we do at --.

CHAIR CONGDON: Yeah. You guys can say we're -- we're top of the list.

MR. WATSON: No, I -- I -- I -- I'm not going to judge by --.

CHAIR CONGDON: It's not -- I -- I'm joking.

MR. WATSON: Honestly, I don't want to judge.

CHAIR CONGDON: No.

MR. WATSON: But Maine Yankee did have three time -- three full-time inspectors there. I mean, we -- we -- it was great because we got to share data.

CHAIR CONGDON: Right.

MR. DIMITRIADIS: Do you think it's unusual?

MR. WEBSTER: I mean, I think we have more oversight than most decommissioning reactors, which I think is a good thing.

CHAIR CONGDON: Tom Carey had a question.

MR. CAREY: Just a quick. It's more N.R.C.

than -- than Holtec. I'm curious of the accuracy of this inspection report. It says at least 14 inspections since 2008 when the site began loading the ISFSIs, the date, they began loading them back in '08?

MR. DIMITRIADIS: That's correct, yes. And then, that's only -- that is inspection reports related to ISFSI inspections alone.

MR. CAREY: Specifically?

MR. DIMITRIADIS: Yeah.

MR. CAREY: Okay.

MR. DIMITRIADIS: The plants were operating, so we have other reports that, you know, for the operating, you know --.

MR. CAREY: Okay. Thank you.

MR. DIMITRIADIS: Construction of the pad, I believe, started in 2004. And then the first cask was issued to the pad in 2008.

MS. LEVENBERG: Just quickly on page -- this is Dana Levenberg. On page eight, you mentioned the M.O.U. was developed and under review. Is that the M.O.U. for --?

MR. BURRONI: Split sampling.

MS. LEVENBERG: The split sampling. Okay.

And is that pub -- a public document? Is that available to the public, that M.O.U.?

CHAIR CONGDON: We will make that public. It's only just getting completed.

MS. LEVENBERG: Got it.

CHAIR CONGDON: So yes, we will post that. A member of the community had also requested that we post kind of a spec sheet of how we are doing the sampling. And we've -- we're developing a one-pager for that as well, so that will be posted as well following this meeting.

MS. LEVENBERG: Okay. Thank you. And then, can you just clarify Q.A. safety culture inspection, Q.A.?

MR. BURRONI: I'm sorry, I can't hear you.

MS. LEVENBERG: What is Q.A.? A quality --

MR. BURRONI: A Quality Assurance.

MS. LEVENBERG: -- a Quality Assurance safety culture inspection, what is that -- what is that inspection?

MR. BURRONI: Are you on the N.R.C. slide?

MS. LEVENBERG: Upcoming N.R.C. inspection is the last one.

MS. WARNER: This is Katherine. I can

answer that. It's our inspection.

MS. LEVENBERG: Okay.

MS. WARNER: Sorry. I'll give the inspection procedure number. That way, you can look it up if you want to. It's N.R.C. inspection procedure 40801, 40801. That's the P I and R Safety Culture and Quality Assurance. So what we did was we picked a couple of programmatic areas such as safety culture.

So what we do with that is to walk around the site, take a look at various levels of management and workers to determine if they feel free to raise any nuclear safety concerns. Also, in addition, whenever we're on site, we take a look at any activities going on.

So there might be some programmatic areas listed there, but when I get on site or whoever's doing the inspection at that time, again, we have a variety of inspectors. They'll take a look at the activities and also pick some of those to observe as well. Does that help?

MS. LEVENBERG: Yeah. Thank you.

MR. BURRONI: The acronym Q.A. just stands for Quality Assurance.

MS. LEVENBERG: Yes, I -- I think somebody said that. Thank you.

CHAIR CONGDON: Other questions? Yes, Richard.

MR. WEBSTER: So Rich, can you explain this -- this crane thing to me. I still don't understand it which is -- it seems like, is -- was it supposed to be designed for not having a single point of failure?

MR. BURRONI: Absolutely.

MR. WEBSTER: Okay.

MR. BURRONI: See, the -- the violation was this, is, they didn't formally do the calculation like they should have done to demonstrate single failure capability. N.R.C. picked that up, demanded that they do a formal calculation. That was done and it did demonstrate single failure capability of the crane.

MR. WEBSTER: Okay. So what do you mean by single failure capability?

MR. BURRONI: Well, actually it looks at the strands. The -- the -- the strands on the high lift, I think there is 64. And I think the analysis determines that you could actually fail 32 strands.

Don't quote me on the numbers exactly. And still not have a disruption or you -- you could still safely secure the cask. I can get you the exact numbers --

MR. WEBSTER: Okay.

MR. BURRONI: -- but I think it's 64 and 32.

MR. WEBSTER: All right. That's helpful. Thank you for that clarification. So now, I just want to get to the -- so if I heard right, you pushed the schedule back. Is that correct?

MR. BURRONI: Pushed the schedule back?

MR. WEBSTER: I think Dave said the discharges for the -- for some of that later.

MR. BURRONI: No, we always said it was September. What I wanted to do, and I explained in August in there at one point. I'm sorry?

CHAIR CONGDON: I'm sorry to interrupt. There was an August in there at one point, in the previous --

MR. BURRONI: Yeah. And -- so -- and I explained this to -- to Assemblywoman Levenberg and Senator Harckham yesterday. The only intent to do an earlier semi or -- or partial discharge of the unit two pool was to clean off some of the boric acid that

plates out on the stainless-steel liner.

We used boric acid to control reactivity in the pool itself. Just wanted to get a head start on the cleaning. That was the only intent.

MS. LEVENBERG: There were some other dates that --

MR. WEBSTER: Yeah.

MS. LEVENBERG: -- that you mentioned earlier when, I think, when -- was it when Dave was presenting?

MR. WEBSTER: Yes.

MS. LEVENBERG: You said something about 2026 and 20 --

MR. WEBSTER: Right. It says unit two react to cavity, August 2 2022, right?

MS. LEVENBERG: Yeah.

MR. BURRONI: Those are the other -- the other discharges.

MR. WEBSTER: You said those are moved back.

MR. BURRONI: What -- Mr. Richard, what -- what -- what -- what are you looking? Are you looking at Dave's?

MR. WEBSTER: I'm looking at slide eight of

Dave's slides.

MR. BURRONI: You're looking at Dave's slides?

MR. WEBSTER: Yes. And you said he got them moved if I'm not mistaken.

MR. BURRONI: What page are you on again, Richard?

MR. WEBSTER: Slide eight of Dave’s presentation..

MR. BURRONI: Okay. So slide eight --

MS. LEVENBERG: Yeah.

MR. BURRONI: -- the spent fuel pool September of 2023 for unit two.

MR. WEBSTER: Uh-huh. But he said --.

MR. BURRONI: So unit three spent fuel pool, that would be ready probably in May, but June of 2024.

MR. WEBSTER: Right. Now, he said those dates have slipped back though. But -- is that not correct?

MS. LEVENBERG: He did say that.

MR. BURRONI: They slipped back?

MR. SIPOS: No. I -- just for --

MS. LEVENBERG: He -- he said 2026 and

2027.

MR. SIPOS: -- clarification for the record, I think Dave was speaking about the reactor cavity items. Unit two reactor cavity. Unit three reactor cavity.

MR. BURRONI: Okay. They're not spend fuel pools --

MR. WEBSTER: Okay.

MR. BURRONI: -- because we rescheduled some of the segmentation work --

CHAIR CONGDON: All right.

MR. BURRONI: -- that drives those dates later.

MR. WEBSTER: Okay. So the schedule has slipped on the them then?

MR. BURRONI: It's been re -- it's been rescheduled. The end date hasn't slipped.

MR. WEBSTER: Okay. So -- okay. So the -- so I just want to be very clear on this because it's kind of confusing, right? So what you're saying is, some of the work -- some of the arrangement of the work during the decommissioning has changed?

MR. BURRONI: Yeah.

MR. WEBSTER: Gone back in time?

MR. BURRONI: If we scheduled, we -- we look at -- we look at lessons learned and -- and how we could do things better. And there's always a dynamic in any schedule, especially when you're decommissioning a unit.

MR. WEBSTER: Okay. But you still expect to finish within the original time period?

MR. BURRONI: Yes.

MR. WEBSTER: And so -- and how are you doing on budget?

MR. BURRONI: And how what?

MR. WEBSTER: How are you doing on budget?

MR. BURRONI: We had a financial discussion this week. And if you look at the budget line, I can get you the numbers, but we're within our budget.

MR. WEBSTER: Okay. So if I remember rightly, you had plenty of headroom. If you -- if you met your budget projections, you had plenty of headroom in the decommissioning trust fund. Is that right?

MR. BURRONI: If that was a question I didn't get it.

MR. WEBSTER: Yeah. I said, is it correct that there was -- if you -- as long as you hit

budget, basically there's plenty of money in the decommissioning trust fund. Is that right?

MR. BURRONI: That's correct.

MR. WEBSTER: So what I don't understand is why was this -- there was this rumor that, well, I think you stated to the press, which that -- if the -- if we put tanks on the site, it could push the schedule back or force workers to be laid off.

MR. BURRONI: We said, if we cannot discharge to the river, right, we would have to potentially reschedule our work, which would potentially require layoffs of individuals because in the sequence of -- the sequence of work for decommissioning gets changed.

MR. WEBSTER: Right. But you said you just changed the sequence of work. You said that's something that you do routinely.

MR. BURRONI: We change the sequence of segmentation, right, to be more efficient with the people that we have on site right now. It's still allowed to discharge. But if you change the game plan that we've all agreed upon in 2017, or whenever the joint proposal was signed by Riverkeeper and everybody else --

MR. WEBSTER: Well --

MR. BURRONI: -- let's -- let -- hold on. Let's stay with the game plan.

MR. WEBSTER: Well --

MR. BURRONI: So you stay with the game plan, it's 12 to 15 years.

MR. WEBSTER: Right.

MR. BURRONI: If we want to stop discharge, which was part of the game plan, then that's going to have an overall effect on the schedule.

MR. WEBSTER: We can -- listen, we can -- we can pick out that the game plan is definitely 12 to 15 years. We don't believe that we signed an agreement that said that discharges could go forward.

MR. BURRONI: Well, you should read the agreement. When's the last time you read the agreement?

MR. WEBSTER: I -- I read it actually, Rich.

MR. BURRONI: Yeah. Well, you should keep reading it again.

MR. WEBSTER: And I read it when we signed it.

MR. BURRONI: I'm trying to calm down, but

--

MR. WEBSTER: So --

MR. BURRONI: -- Katherine's telling me to calm down.

MR. WEBSTER: So what -- what you're saying is, just to be clear, there isn't a shortage of money. Like, you could afford to, if -- if it was required to draw on the decommission trust fund to store on site, you could afford to do that, right?

MR. BURRONI: Rich, if you want to have a financial discussion, I'll get the right financial people to come to the next meeting or we can have it offline.

MR. WEBSTER: Let's have it offline.

MR. BURRONI: Okay.

SENATOR HARCKHAM: Just to follow-up on that point, if I may. Just on financing in general.

MR. BURRONI: Please.

SENATOR HARCKHAM: In general, not the finances today. But I think Assembly Member Galef before she'd left, had required that we do a regular reporting at these meetings. I know they -- the documents may have been posted, but I think a periodic reporting to -- to the oversight board, I

think would be beneficial for the public.

CHAIR CONGDON: That's a good reminder and she did request that. And I think we can -- we can accommodate that.

MR. BURRONI: Let me say one thing.

CHAIR CONGDON: Yeah, please.

MR. BURRONI: The N.R.C. does require us to review the financials once a year.

CHAIR CONGDON: Right. There's publicly -- publicly filed information. And why don't you talk about that publicly filed report because I think that that --

MR. BURRONI: Right. We just -- we just filed that in March. We just had the N.R.C. discussion this past week.

CHAIR CONGDON: Right.

MR. BURRONI: -- on our financials.

CHAIR CONGDON: You want to talk about, you know, the balances and any --.

MR. BURRONI: I -- I -- I don't have the numbers in front of me. But --.

CHAIR CONGDON: Okay. I have the numbers in front, we can -- we can make -- that's a public document.

MR. BURRONI: Are you saying that there's --

CHAIR CONGDON: Public document.

MR. BURRONI: -- oh, absolutely.

CHAIR CONGDON: And were there -- were there market losses to the decommissioning trust fund?

MR. BURRONI: Absolutely. There's --.

CHAIR CONGDON: Okay.

MR. BURRONI: In 2022, there were market losses.

CHAIR CONGDON: Yeah, one of -- one of the -- one of the issues, Richard, is, you know, the decommissioning trust fund is not a static --

MR. WEBSTER: No, I understand. Yeah.

CHAIR CONGDON: -- thing, right? So when you talk about headroom on a 10 to 15 year project that is subject to some market volatility, there is risk.

MR. WEBSTER: Absolutely.

CHAIR CONGDON: Okay.

MR. WEBSTER: I mean, there -- there's risk on both ends, as far as I can tell, which is there's risk on both --

CHAIR CONGDON: Yeah, absolutely.

MR. WEBSTER: -- there's risk on funding.

CHAIR CONGDON: Correct.

MR. WEBSTER: So let me go to the -- let me just go to the -- my final question here, which is, you know, you guys handle some of the most dangerous waste in the world, right?

MR. BURRONI: Absolutely.

MR. WEBSTER: And you do it safely?

MR. BURRONI: Absolutely.

MR. WEBSTER: And so could you handle this tritiated water safely if you had to store it on site?

MR. BURRONI: We -- we are handling it safely right now with the discharge to the river.

MR. WEBSTER: Right. If you had -- if you had to store it for 12 years, could you do it safely?

MR. BURRONI: If I had to store it, like I said, right, we would be expanding our protected area, which further lessens the partial release -- the partial release that we would do at the end of the time.

MR. WEBSTER: Right. But you're not answering my question. Can you answer my question?

MR. BURRONI: Your question is, can I store it safely?

MR. WEBSTER: Yeah.

MR. BURRONI: That's a hypothetical. I can't answer a hypothetical question.

MR. WEBSTER: Well, let me ask you -- let me ask you another hypothetical. Can you store the -- the -- the --

MR. BURRONI: I could -- I could tell you right now, I could discharge it --.

MR. WEBSTER: -- tritiated water on site for the next 20 years?

MR. BURRONI: I could tell you I could discharge it safely. Let me -- let me just say that.

CHAIR CONGDON: Let me just perhaps pose a different question. And -- and to Richard, do you trust Holtec to store it safely on site?

MR. WEBSTER: I mean, I think with -- with adequate oversight from the State, yes.

MS. KNICKERBOCKER: Okay. I -- I do have to comment again. As I have said before, I'm hoping this is our last discussion this evening about storing the water in tanks on the property. The Village of Buchanan will not issue any permits which

are needed to store that water. It is not a viable option.

Speaking to Dave Lochbaum, an independent expert, what concerns me is the potential failure. And that'll be, holy cow, if that ever happens, oh my God, Richard, you -- you'll be doing like a handstand all over the property.

Number one, the failure. Number two, everyone's concern, it gets vented. It gets vented and that could possibly be airborne. How would that be? So you know what? And another thing I have a huge issue with and I have to say this, is that everybody has suddenly become a nuclear, whatever expert and they're always telling the Village of Buchanan, what's the -- what their thoughts are, what their desires are.

So this evening, I'm telling you what the Village of Buchanan will not be issuing a permit for those huge water tanks. So that's it -- that's it. So if you want to figure out whatever, then that's fine. So that's off the table. I thought I made myself pretty clear before.

MR. WEBSTER: Can ask you a quick question, Theresa?

MS. KNICKERBOCKER: Sure.

MR. WEBSTER: Has the village board voted on that?

MS. KNICKERBOCKER: We don't have to vote on that.

CHAIR CONGDON: Well, there's nothing proposed to them. In fact, it's --

MR. WEBSTER: No. I'm just saying that, there is -- is there some sort of Village of --

MS. KNICKERBOCKER: Do you want to bring that for a vote so we can totally close that chapter?

MR. WEBSTER: I mean, I understand. I understand how there's a lot of people in --

MS. KNICKERBOCKER: I think it's not a viable solution.

MR. WEBSTER: There's a lot of people --.

MS. KNICKERBOCKER: Do you understand that, that becomes airborne or could it be spread out through the property?

MR. WEBSTER: Teresa, I'm more than happy to have a discussion with you --

MS. KNICKERBOCKER: I am --

MR. WEBSTER: -- about it offline.

MS. KNICKERBOCKER: -- looking to finally,

eventually, I hope to God, I'm still alive 12 to 15 years from now, I would like to see that property restored.

MR. WEBSTER: Yes.

MS. KNICKERBOCKER: I don't know. You know, there's all different kinds of things. My crystal ball is broken right now. I don't know what the future holds. But if we're going to do things to hurt the property further, then what are we doing?

And it was always about the rest. It was the safety decommissioning, the prompt decommissioning. We've had these conversations and also the final restoration. This is very important to the Village of Buchanan.

But not only what goes on that property, we do understand what goes on that property over there, what happens there not only affects the Village of Buchanan, we get it, it affects everyone. So we kind of need to work together and have not people telling us what to do and we need to be able to communicate.

And so I'm communicating to you tonight, that is not the direction the village is going in.

MR. WEBSTER: With -- with respect to it, it sounds like you're saying everybody should be

involved, we should all have a discussion. But then, you're telling us what to do.

MS. KNICKERBOCKER: Well, we've been having the discussion. I've been telling you what my thoughts are and the village board, but people are refusing to listen to what I'm saying.

MR. WEBSTER: This is what you're saying, that if -- if the public and the process concludes the answer that you like, that's fine. But if it doesn't, then you'll say you'll override?

MS. KNICKERBOCKER: Well, that's the same with you, with everything, Richard too.

MR. WEBSTER: Well I'm not actually.

MS. KNICKERBOCKER: Yes, now, Richard (unintelligible).

MR. WEBSTER: (unintelligible)

MS. KNICKERBOCKER: I've known you too many years now.

CHAIR CONGDON: Tom -- Tom Carey has a question. Tom?

MR. CAREY: Yeah, I just have couple of questions for Rich. I see you got a good turnout here tonight. Do you know what -- what your complete workforce is right now, Rich?

MR. BURRONI: Yes.

MR. CAREY: Do you have a number?

MR. BURRONI: Union about 400. Total, about 690.

CHAIR CONGDON: 690?

MR. BURRONI: 690.

MR. CAREY: Have those numbers altered since the beginning? I mean, I'm sure you had a ramp up to a certain point.

MR. BURRONI: We've ramped up to get the fuel out of unit three's pool, right. And then, we'll come to some, you know, some medium --.

MR. CAREY: You'll see a ramp down again at some point?

MR. BURRONI: I don't know if it'll ramp down, but there's plenty of work.

MR. CAREY: So -- and -- and that's kind of important. Do you think you can avoid layoffs if you don't -- if you're not able to discharge the water, is there other work you can do, say unit one, unit two all around the property to avoid layoffs? Because I -- I -- I hate when I hear the word layoffs --

MR. BURRONI: So do I.

MR. CAREY: -- when it's such a large project.

MR. BURRONI: So do I. And I guess, you know, we have a great team. These guys are great.

MR. CAREY: No doubt.

MR. BURRONI: They're out there every day doing work.

MR. CAREY: No doubt in my mind, you got the best of the best here.

MR. BURRONI: And I -- and I fully respect what they do, right? But you know, projects are going to come and go, right? And at the end of the day, we're trying to work ourselves out of a job, me included, right?

MR. CAREY: Uh-huh.

MR. BURRONI: So that's what the whole decommissioning thing is all about, right? So potentially, you know, we'll -- we'll see what we could do with the schedule. But if we're not able to discharge to the river, right?

And we've had this discussion yesterday with Senator and Assemblywoman, right? That just changes the whole game plan. And that just changes how we can take buildings down, right? So we have to

look at that.

MR. CAREY: Right. Because my fear is, there -- there's a ton of work going on all throughout the county, right? All throughout Westchester-Putnam. If -- if -- if, you know, we talk about layoffs and you let some people go, are you ever going to get that crew back?

MR. BURRONI: That's --.

MR. CAREY: And they go to other jobs.

MR. BURRONI: I agree.

MR. CAREY: So my big concern is, when -- when you talk about layoffs, and -- and we've had this discussion, is there enough work on that facility to keep these people working if you're not able to discharge it?

MR. BURRONI: It's -- we'll -- we'll have to look at the schedule, Tom. That's the best I could tell you.

MR. CAREY: Okay.

MS. LEVENBERG: Can I ask something?

CHAIR CONGDON: Assemblywoman Levenberg?

MS. LEVENBERG: Rich, yesterday when we were talking, you had said that in phase one there were 312 --

MR. BURRONI: Yeah.

MS. LEVENBERG: -- folks working for HDI. Then, 230 in phase two. And then, you're going down to 50 in phase three that -- that of the U.W.A. workers. You said the other workers were hired by -- were working for Champion and I think B.H.I., is that right?

MR. BURRONI: B.H.I., Champion and Giordano.

MS. LEVENBERG: Okay. And Giordano. And you said that in most cases, many of those workers when you had a change of phase where there was less work, that they were able to find other work except for, I think you said, there were five to six that were laid off or otherwise retained after phase two.

But that, you're coming up on phase three. So for the H.D.I. workers or I think that was mostly what you were referring to that, that was down to 50. So I just want to be clear about how many workers you said 700 badged on site that was a combination of all of these different folk --

MR. BURRONI: Right.

MS. LEVENBERG: -- of all of these different groups. Not everybody's working for,

specifically for Holtec?

MR. BURRONI: Correct. So the 50 is the core group we'll keep, right?

MS. LEVENBERG: Yeah.

MR. BURRONI: But then, there'll be people with Champion who are trying very hard.

MS. LEVENBERG: And you said 50 was part of whatever that was part of the proposal, the original proposal, the phase one, phase two, phase three?

MR. BURRONI: Yeah, the core group. The core group that will stay on. But we're trying very hard to get everybody a job, right? Once we get our fuel on pad protected, right? Because at that point in time, once we get the PDEP approved, right, and we're allowed to just operate as the ISFSI only, right?

The -- the number of security guards will be decreasing, right, and our core group of H.D.I. people reduced. But what we're trying to do is the U.W.A. contract expires, once fuel on pad -- once we get to fuel on pad protected, that wasn't negotiated, right.

But what we're trying to find all of the U.W.A. people jobs with either Champion, Giordano or

B.H.I. And I think we've done a pretty good job of that, right. I think there's only like five people left that were trying to get jobs.

MS. LEVENBERG: But again, not all of those jobs are -- are with you, with this particular site. Some of those jobs with Champion and B.H.I. there, where you're getting jobs for other folks, it's not necessarily on site here. They could be getting jobs at other Champion jobs or --.

MR. BURRONI: Like -- like Tom said, there's work all around the county, right. So even the I.B.E.W. is helping. I.B.E.W. is looking at -- I'm sorry guys, taking the electricians, right, and technicians, right. And so they can go to another job site within Westchester County. Operating engineers are doing the same. Carpenters are doing the same.

The -- the -- the unions are being great and -- and taking most of the U.W.A. people. And if it's not Indian Point, it could be at another position within Westchester County. We also have a job fair in August, the Department of Labor is coming down. And we'll see if anybody wants to do that.

MS. LEVENBERG: Thanks for that

clarification. The other thing -- the other two questions I had about, in -- in this whole evaluation, you were only talking about the decommissioning of units two and three. And the whole schedule for unit one hasn't even been incorporated into this yet?

MR. BURRONI: No.

MS. LEVENBERG: But there's a lot more work to still be done --

MR. BURRONI: Yeah.

MS. LEVENBERG: -- for unit one to be -- decommissioned, right?

MR. BURRONI: Yeah. So then, the reason for that is this. Is when unit two and when unit three was shut down, we were able to characterize these parts. So to -- to classify Alpha waste, Bravo, Charlie waste, greater than Class C waste. We weren't able to do that with unit one, right. It's been shut down.

The head was tensioned, right. So we had to get into the head, right, which we just recently did to characterize the core. And then, that'll set up the game plan as to how we disassemble the internals within the unit one ball, actually, right.

Once we strip out the ball, see, you're not going to see a lot of buildings coming down because we have to strip a lot of stuff outside -- inside the buildings. Once that get stripped out, then we could take the buildings down. And now we could start putting together a plan for unit one once we get the characterization study back.

MS. LEVENBERG: And is that -- can you just clarify again, is that dependent on unit two and unit three, unit one?

MR. BURRONI: No. Unit two and unit three -- well, we, again, we're stripping in -- we're doing the reactor segmentation.

MS. LEVENBERG: Right.

MR. BURRONI: Right. Which is the critical path for both of those units. Plus, we're doing the chemical cleaning of the steam generator tubes for decontamination purposes, right. Again, it's stripping the insides of these buildings before we can take them down.

MS. LEVENBERG: But just again, to clarify, there's plenty of work still to be done with unit one decommissioning, the taking apart of unit one?

MR. BURRONI: Can you repeat that back?

I'm sorry.

MS. LEVENBERG: There's plenty of work to still be done with unit one --?

MR. BURRONI: There is -- there -- there'll always be work.

MS. LEVENBERG: Okay. I wanted to just make sure. And then, finally, in terms of the release times, I think one of the peer reviews, and I don't know, Dave, if you want to chime back in again about this, mentioned that the better times to do the release if you were to do the release would be when the Hudson levels are high.

And right now, the ones that you would ident -- the times that -- that have been identified or not when the -- when the river would actually be highest. So less dilution. So I don't know if you could comment on that. Or Dave if you wanted to chime in about that as well. I forgot to ask that question earlier.

MR. LOCHBAUM: Well, this is Dave Lochbaum. As I -- as I alluded to in my presentation, Holtec and Entergy before them doesn't take credit for the Hudson River flow. When they're calculating whether they're meeting the E.P.A. drinking water standard,

they just assume their own discharge flow, which they control.

And in addition, the sampling that's done is year-round. And the -- the sampling for tritium hasn't shown that it varies significantly with the river flow, high or low.

So I -- it is -- it was a comment made in why, actually not a peer reviewer, somebody else, but it's a valid comment, but I don't think it has that big of significance in timing. If -- if you got a choice, it'd be better to do it during high flow. But during a low flow wouldn't be a show stopper.

MR. BURRONI: We'll control dilution with a certain water pumps through the discharge canal. Already done that.

CHAIR CONGDON: Of course. If the discharge is only a couple hours based on Dave's presentation earlier, is that right?

MR. BURRONI: Typically, on a batch, it's 18,000 gallons, about 120 Gpo and 150 Gpm pump.

CHAIR CONGDON: We could do the math. It would take --.

MR. LOCHBAUM: 120 minutes.

CHAIR CONGDON: Okay. Yeah. Thank you.

Couple hours. My point I guess, is -- and it's a question. I mean, I think this question was a good one. They were looking at flow in the river, I believe, the comment.

But could we not also -- to Dave's point, you're not considering the -- the dilution effect of the river, but we know the tidal schedule. And could you not time a two-hour discharge to coincide with the tide going out?

MR. BURRONI: I'll have to take that back to my manager.

CHAIR CONGDON: Right.

MR. BURRONI: I mean, we -- we -- we -- we --.

CHAIR CONGDON: Senator Harckham needs to take some credit for that one. I think that Senator Harckham had a good question on that in a previous meeting. You're right.

MR. BURRONI: I know what it'll take. It will take four to --

MR. HARCKHAM: And I -- I yelled.

MR. BURRONI: -- five months. Right now --

CHAIR CONGDON: It's for --

MR. BURRONI: -- coming clear to me now.

Sorry.

CHAIR CONGDON: I'm sorry. Go ahead.

MR. BURRONI: The unit two is the spent fuel pool. It's going to take four to five months to get that discharge -- to get it to a discharge, right. But each batch is only a couple hours. Yeah. But then, we have to wait also for P.C.B. We have to verify concentrations of P.C.B.'s. That takes about five days, I think also.

CHAIR CONGDON: I -- I had a clarifying question for Assemblywoman Levenberg because I wasn't -- and maybe it's for Rich. I'm trying to understand the significance of the question on the amount of work because there's a huge amount of work to finish decommissioning on the entire site, right? We're far, far, far from completing the work. So what is the --

MS. LEVENBERG: Well, it's based on --

CHAIR CONGDON: -- what were --

MS. LEVENBERG: Yeah.

CHAIR CONGDON: What -- yeah.

MS. LEVENBERG: I was getting at that because Holtec had sent a letter around to, I think, to various bargaining units saying that if the

discharge were to be stopped based on the introduction of the legislation by Senator and myself, that would disallow it. That there would be a loss of, I think, 40 carpenter jobs and 60 operating engineer jobs. I believe that -- those were the numbers.

CHAIR CONGDON: 40 carpenter and 60?

MS. LEVENBERG: And 60, yeah. And I -- I just wanted to clarify because I -- I don't know, it seems like Rich tonight you said, there's still plenty of work. There's plenty of work so it didn't work.

CHAIR CONGDON: I didn't see this letter. I -- I don't know what you're talking about.

MS. LEVENBERG: Oh. Okay.

CHAIR CONGDON: I'm not aware of a letter either, but I'd like to see it if --

MS. LEVENBERG: Sure.

CHAIR CONGDON: -- this exists.

MS. LEVENBERG: Happy to share that with you.

CHAIR CONGDON: Yes.

MS. LEVENBERG: Yeah, absolutely. Yeah. And then -- and then, the various groups had sent

letters in opposition to the legislation based on what they saw as a threat to their -- to their workforce. And obviously, neither senator nor myself is looking to roll back any jobs. We want to make sure that jobs are protected.

And again, based on what we've been hearing, certainly the conversation yesterday, the conversation today, it seems like there's plenty of work on the site for -- for many years to come for many people. And if not on this site, then elsewhere through the various subcontracted companies. So I -- that -- I thank you for clarifying that this evening.

MS. KNICKERBOCKER: But I -- I think -- and -- and also continuing that, I -- I think if going back for the pause, now, we all know Holtec has put other facilities on a pause. So I mean, there might, I'm not speaking for Holtec, but I'm just thinking just, you know, there's only so much work.

Like, so if there's a pause, there's no, you know, you could go forward to at some point but, you know, if there's a pause and -- and you -- then that's, you know, that was one of my concerns, if there is a pause. Could it be four years, could it be five years? I don't know.

But the biggest concern is losing the workforce that we have here that is dedicated, they're experienced, they know the site better than anyone else. So those are the big concerns, you know, how we go forward here.

Did -- does, you know, does everything gets stopped, goes on pause and there's only so much interior work you can do. And the big part of the project is demolition in the end. So you can't do the demolition until you do the inside. See what I'm saying?

MS. LEVENBERG: Sure.

MR. BURRONI: There's so much work that could be done. But again, if we stop the discharge rate, the whole sequence, right, gets changed. You changed the whole sequence, you're going to have an effect on resources. It's that simple.

MS. LEVENBERG: Well, I'm just -- .

MR. BURRONI: And then, what do I do with rainwater or what do I do with snow?

MS. LEVENBERG: Yeah. I mean, just to comment on that you had mentioned, that --

MR. BURRONI: No, did --.

MS. LEVENBERG: -- you know, I -- I'm going

to respond. I am going to actually, just based on what you had said. Again, yesterday when we were talking originally, you wanted to discharge some water from one spent fuel pools to get six feet down so you could clean the sides of the pools, right? Is that -- is that true?

MR. BURRONI: Yeah.

MS. LEVENBERG: And -- and -- and then, that didn't happen. You agreed to delay that, but the work didn't stop. You actually found a workaround, you found another way to do that. So --.

MR. BURRONI: There's one instance, yeah.

MS. LEVENBERG: Okay. Well, I mean, again, --

MR. BURRONI: How often can we do that?

MS. LEVENBERG: -- you -- you -- there -- there's alternatives that you've been able to find to continue to move -- to move forward. So just as you know, again, we're trying to find alternatives, to find what is the safest for, you know, which I think that was the first thing that you said, Mayor Knickerbocker safest, right? That was something that we were starting with the safest.

And then, we -- we wanted to do, you know,

everything efficiently, but we wanted to start with safest. So you know, if we're looking at what's safest and finding that maybe, you know, there's still questions about what is safest and you're able to find alternatives to continue the work, then, you know, that seems like a more productive approach than just threatening to lay off workforce while the public is trying to wrap their heads around this process.

MR. BURRONI: I -- I -- I'm going to say this and I -- this is the last time I'm going to say it, right. We will have to totally change our approach to decommissioning if we can't discharge to the river. That will definitely have an effect on resources. I can't --

MS. LEVENBERG: Immediately, I can't --

MR. BURRONI: -- I can't be --

MS. LEVENBERG: -- discharge the river ever or can't discharge to the river in six months, one year, I understand. 12 years or more?

MR. BURRONI: We can work with -- potentially, we can work with a timeframe, right? Nobody's even asked me about that, right. We could work on -- potentially work on a timeframe, right?

But if we're not going to be able to discharge to the river, I'm trying to be transparent, right. I'm not trying to B.S. anybody. You're going to have -- you're going to have an effect, excuse me, on the overall decommissioning schedule of the station. End of story.

CHAIR CONGDON: Dave Lochbaum --.

MR. BURRONI: And I can't be more clear than that.

CHAIR CONGDON: Yeah. Dave Lochbaum has had his hand up for a while. Dave, you had a question?

MR. LOCHBAUM: Yes. On Rich -- Rich Burroni's next to last slide there was some information provided about safety and rem worker exposures. I went to a nuclear regulatory commission public meeting about six years ago and these kind of factors were cited as very good leading indicators of a plant that's having safety culture problems or work control problems.

And so I guess my question would be, Rich, could you sustain providing this information in future updates because I think it's very insightful.

MR. BURRONI: Sure.

MR. LOCHBAUM: Thank you.

MR. BURRONI: Thank you. I'll do that.

CHAIR CONGDON: Tom Carey?

MR. CAREY: Yeah. Just -- Rich, you mentioned a job fair somewhere down the road.

MR. BURRONI: August.

MR. CAREY: What -- what -- can you explain that, what -- what type of job fair are you going to have?

MR. BURRONI: We're going to bring in vendors. We -- I think we're going to need to also bring in some other nuclear plants. That's what Pilgrim did. We're going to try to mimic what Pilgrim did, right.

MR. CAREY: What do you mean nuclear plants? Nuclear workers?

MR. BURRONI: You know, Seabrook, Millstone, those type of plants. See if they could -- see if they want to hire some folks.

MR. CAREY: Okay. You want to take folks from here to there?

MR. BURRONI: It would be people that would want to stay in the nuclear industry, have a long-term permanent position.

MR. CAREY: All right. But not the construction end, you're talking?

MR. BURRONI: No --

MR. CAREY: Okay.

MR. BURRONI: -- the -- A side guys.

MR. CAREY: Okay.

CHAIR CONGDON: John Sipos had a question.

MR. SIPOS: Rich, I think I heard you said you had 290 -- I'm sorry, 690 badged workers now at the site.

MR. BURRONI: Correct.

MR. SIPOS: And they are experienced and familiar with the site, isn't that correct?

MR. BURRONI: Correct.

MR. SIPOS: And if there was a pause and you had to furlough some of them and -- and they were no longer at the site, that experience would walk out the door, would it not?

MR. BURRONI: Absolutely.

MR. SIPOS: And when we all together agreed for the joint proposal for a prompt, safe, and efficient decommissioning, that was one of the considerations that we all took into account. Isn't that correct?

MR. BURRONI: Absolutely.

MR. SIPOS: The idea to maintain a trained, experienced, dedicated professional workforce like you have.

MR. BURRONI: Yes, sir.

MR. SIPOS: And if there ever came a time that decommissioning was to start again, it would be difficult to find such a trained, experienced, and professional workforce, wouldn't that be?

MR. BURRONI: We would've to go through retraining all over again. MR. SIPOS: And that would be detrimental for decommissioning and site restoration, wouldn't it?

MR. BURRONI: Yes, sir.

MR. SIPOS: Thank you.

CHAIR CONGDON: I -- I -- that was a -- thank you, John. And thank you. I -- I am reminded of our sort of 2017 meetings of the closure task force and there was a lot of angst and concern and uncertainty.

I mean, the town, the village, school district, the loss of tax revenue and the loss of jobs was very much a major -- major concern in the community. It took years of our meetings at the task

force to -- to develop some transition plans.

And one of the things that, you know, we talked about for the workforce was the fact that we'd be moving into decommissioning and that there'd be opportunities for the existing employees. And so I -- I think that was an important -- an important point.

MS. LEVENBERG: Tom, I know you're going to end soon --

CHAIR CONGDON: Yeah.

MS. LEVENBERG: -- but just one last point on that.

CHAIR CONGDON: Yeah.

MS. LEVENBERG: Which is the other thing, Rich, that you had mentioned yesterday is that you -- you needed to bring a lot of people in -- out of retirement to -- to do some of this work.

So I just wanted to clarify that people came in out of retirement. It's not like you were training necessary new people. You were taking people out of retirement to work here, so.

MR. BURRONI: You're going to take a handful, yeah.

MS. LEVENBERG: Okay.

CHAIR CONGDON: And some of those folks were, you know, retiring with the phase down of operations. And then, were pulled back in for decommissioning, which is sort of -- that was like one of the things we talked about with the closure task force was, you know, there are people in the community that know this plant and know the -- know the work. And that was -- that was excellent. Rich Webster, I have a question for you too. Like, well, you know when we --.

MR. WEBSTER: Sure.

CHAIR CONGDON: Okay. When we, you know, when we were back, you know, in that 2017 timeframe, when we did the closure, right, that was in the context where we were settling longstanding litigation that the state had brought against Entergy, that Riverkeeper was a party in the litigation.

There was opposition to license renewal prior to the closure agreement, right? Entergy wanted to continue operating, you know, with another 20 years from an environmental standpoint on the river standpoint. What is Riverkeepers view of sort of the closure agreement and the effect that that had

on the river?

MR. WEBSTER: Right. Well, first of all, I want to say actually on that, let me, I -- I've got a question for Rich, but let me just answer to Tom's question first, which is, first of all, I think what people may not know is that John Sipos here holds the record for not losing in front of the N.R.C. He litigated a relicensing proceeding for many, many years.

I was hanging around in the background litigating one -- one or two things for Clearwater at the time actually. And Riverkeeper were litigating their contentions. And I say, John did an exceptional job using a process that was extremely arduous.

I think John once described it as not for the faint of heart. I described it as like -- it's like a game of chutes and ladders, except there are no ladders, right? You say the wrong thing, you are out.

CHAIR CONGDON: Uh-huh.

MR. WEBSTER: Okay. So -- so that -- that was an extremely good result achieved with a partnership of the State and community groups. Oh,

well, so these extremely good results from my perspective because the -- the cooling water discharge, water treatment discharge, which Entergy did not want to improve was having a huge effect on the river.

And then, of course, we had the radiological risks, which are much reduced already as a result of the -- of the closure. And we are over time eliminating more risk.

So we are in a much better position than we were before, and I don't think people should lose sight of that. But that doesn't mean to say that life's perfect, right?

CHAIR CONGDON: Right.

MR. WEBSTER: It means that we've made a lot of progress. I mean, we keep making progress and if we keep working together, I think we can make that progress.

So now, Rich, my question for you is, you said segmentation of both vessels is considered the second critical path, right? So if I understand it, the critical path is the one that could delay the end result, right?

MR. BURRONI: Say it again.

MR. WEBSTER: The critical path is the -- the task that could delay the end result.

MR. BURRONI: Correct.

MR. WEBSTER: So that's the second critical path. So what's the first critical path?

MR. BURRONI: Fuel -- fuel on pad.

MR. WEBSTER: Fuel on pad. Okay. So -- so discharging this water is not on the critical path then?

MR. BURRONI: Well, I'll say this, right. Fuel on pad, right, also requires me to empty the pools.

MR. WEBSTER: Why?

MR. BURRONI: Right. Why do I have to keep the --?

MR. WEBSTER: No, I.P. two, the fuels on the pad.

MR. BURRONI: Let me -- let me finish. All right. So we drain the pool, we coat the -- we coat the liner and then we could start taking that liner apart for segmentation. I -- I -- we get done with segmentation, I drain that and I could start taking the reactor cavity apart.

MR. WEBSTER: Right. But so -- but -- but

fuel on pad, you get the fuel on the pad. That -- that's what you've already -- you've already achieved fuel on pad at I.P. two, right?

MR. BURRONI: That's correct.

MR. WEBSTER: And the fuel pool is still full, right?

MR. BURRONI: Yeah. And that's -- that's going to get discharged in September.

MR. WEBSTER: I mean, but -- but what my point is, it's not on the critical path. So if you delayed this discharge, it wouldn't actually delay the job. Is that correct?

MR. BURRONI: Would it delay? I -- again, you're asking me to look at a sequence on the --

MR. WEBSTER: No -- no.

MR. BURRONI: -- you're -- let me finish the sentence. All right. You're asking me if we don't discharge, is it going to change. I'm telling you this, right. If I can't discharge to the river, it changes our game plan on decommissioning.

MR. WEBSTER: I understand that, but --

MR. BURRONI: I keep telling you this and I --

MR. WEBSTER: And I've heard you, Rich.

MR. BURRONI: -- that -- that's going to be that.

MR. WEBSTER: I've heard you.

MR. BURRONI: I know you heard me, but you keep asking me the same question.

MR. WEBSTER: No, I don't. Because you've identified two critical paths. Neither of those critical parts is discharge of this water.

MR. BURRONI: Rich.

MR. WEBSTER: As one Rich to the other, you know.

MR. BURRONI: I'm sorry.

MR. WEBSTER: As one Rich to the other.

MR. BURRONI: As one Rich to the other, all right. And this is not personal. I know it's professional, right. My -- my point here is this, if I can't discharge, it's just -- it's going to change the whole game plan on how Holtec joined with the whole State organizations up to the Attorney General's Office, right, on a joint proposal on decommissioning the units.

Part of that joint proposal includes discharge to the river. Everybody signed off on that, including Riverkeeper. Let's just be honest.

Okay.

MR. WEBSTER: No. We -- we've -- I -- we -- we've -- we've already agreed to disagree on that point, okay.

MR. BURRONI: I'll show you the -- want me to show you the -- I'll show you the signature.

MR. WEBSTER: I -- I -- I --

MR. BURRONI: Let's follow up. Let -- we can side -- side by this.

CHAIR CONGDON: We -- we -- we need to move on.

MR. WEBSTER: Yeah.

CHAIR CONGDON: We're -- we're close to finishing on time.

MR. BURRONI: I like this bantering back and forth.

CHAIR CONGDON: I know you do. I know you do.

MR. BURRONI: The Bickersons. I enjoy it.

CHAIR CONGDON: Tom, can you move on to the next slide, please? Wrapping up. So as -- as I know there's tremendous interest in -- in these issues as evidenced by the attendance tonight and want to, I -- I saw some signs going up with some questions and

some observations, which we welcome. We welcome written comments and questions at any time through our website.

But we're -- we're working on a public forum where there will be an opportunity to ask questions and get answers live from N.R.C. and the U.S.E.P.A. who will be joining us in Cortland on July 11th. We will administer the public forum as we have in the past with an administrative law judge.

Questions, we request be submitted in advance so we can organize them and ensure we have the right people to answer them and -- and have a robust discussion. The way it has worked well in the past is the individuals that submitted the questions, get an opportunity to come up to the mic during the public forum.

The question will be read, it will be answered, then that individual can ask follow-up questions. We found that this is a great opportunity for meaningful public engagement. It's not to say that public statement hearings are not meaningful, we welcome that too. We've used that at almost every one of our D.O.B. meetings.

We've also held standalone public statement

hearings. And the standalone public statement hearing we held in April was focused on this water discharge issue. And given the N.R.C. jurisdiction there, we've -- we created a transcript of that public statement hearing and we submitted to the N.R.C.

But we are grateful that N.R.C. has accepted our invitation to come back to the community July 11th. Wanted to advertise that loudly and welcome everyone's participation. Next slide, please. I think we missed a couple of the other slides. Going back, yes.

Submitting comments, I mentioned, there's written comment on our website. Next slide. We really encourage folks to sign up at our website. It -- it -- any time a document is posted on our website, if you are signed up, you will get notification of that new document.

N.R.C. said they're very transparent. I think our D.O.B. is the most transparent governmental body I've been part of. I've worked in government 20 years. Guest presenter's presentations are also put up on this website.

Dave Lochbaum does slide shows, slide

decks, presenting new information to us on a regular basis without even a request. In some instances, there's something that sparks his interest, he sends us a -- a -- a slide deck. We post all of his material that he submits to the D.O.B., we post on this website.

And so I really encourage folks to -- to acquaint themselves with the pre -- with -- with the website and to subscribe to the service list. We already talked about the public forum and now we can adjourn. And thank you all very much.

MR. BURRONI: Thank you.

CHAIR CONGDON: Appreciate it. I'm sorry. Oh, I'm sorry. Ms. Knickerbocker.

MS. KNICKERBOCKER: I just want to say one thing. Thank you, Tom. And Tom, I -- I -- I want to thank you because these are difficult meetings to have. You have different factions here, different agendas and it's difficult to have meetings like this.

But what I'd like to say is the thank you, because the expertise that this, you know, D.O.B. board has. I mean, you know, we have the D.E.C. here. So these are experts, professionals, and for

us to make decisions, we need to rely on our experts.

So we have the N.R.C., I always -- I've worked with you guys for many, many years, you've always been professional. I respect you. You have the expertise, you have the knowledge. So we need to use that knowledge. We have the E.P.A. that spoke last time.

So, you know whether you want to agree with what the experts are saying, the data is there, the facts are there. So for us on this board, we really need that information to be able to make the right decisions. So thank you to all our experts.

Dave Lochbaum, you are -- you're invaluable. You, I -- I mean, thank God he is with us. He's an independent technical expert. And Tom, you have done a great job. You really, you know, move these meetings along and bring in the experts and -- and have the discussions.

CHAIR CONGDON: Well, thank you.

MS. KNICKERBOCKER: So thank you everyone and I apologize for the people that had to stand. It was a -- I guess, it was a sold-out meeting.

CHAIR CONGDON: It was a good closing. Thank you very much. Yes.

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(The meeting concluded at 9:09 p.m.)

6/15/2023 - Indian Point - 21-01188

STATE OF NEW YORK

I, DANIELLE CHRISTIAN, do hereby certify that the foregoing was reported by me, in the cause, at the time and place, as stated in the caption hereto, at Page 1 hereof; that the foregoing typewritten transcription consisting of pages 1 through 196, is a true record of all proceedings had at the hearing.

IN WITNESS WHEREOF, I have hereunto subscribed my name, this the 22nd day of June, 2023.

DANIELLE CHRISTIAN, Reporter

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