NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL ("NDCAP")

Tuesday November 25, 2024

Hybrid Meeting (in-person and virtual)

Meeting Minutes

NDCAP MEMBERS PRESENT

- James Lampert, Panel; Speaker of the House Appointee (in-person)
- Mary Lampert, Senate President Appointee (in-person)
- Pine duBois, Speaker of the House of Representatives Appointee (in-person)
- Mike Fortini, Senate Minority Leader Appointee (in-person)
- Kevin Canty, Vice Chair Plymouth Select Board Appointee (in-person)
- David Noyes, Compliance Manager Holtec Decommissioning International (in-person)
- John Moylan, Site Vice President Holtec Decommissioning International (in-person)
- Kelly O'Brien, Local 369 (in-person)
- Andrew Gottlieb, Representing Cape Cod; Governor Baker Appointee (in-person)
- Seth Pickering, Mass Department of Environmental Protection; Representing EEA Secretary (in-person)
- Mary Jo Gatslick, Vice Chair; Minority Leader of the Senate Appointee (in-person)
- Greggory Wade, Department of Public Utilities Appointee (in-person)
- Mary Waldron, Representing Old Colony Planning Council (virtual)
- Jack Priest, Representing Commissioner Department of Public Health Radiation Control Program (virtual)
- Chris Callahan (virtual)

PREVIOUS MINUTES REVIEW & APPROVAL

- Revisions to minutes were discussed at onset of meeting (Pine DuBois and Mary Lampert had corrections)
- Motion to Approve the Minutes with corrections (13 Favor)

MEETING INTRODUCTION/POWERPOINT PRESENTATION

- Dr. Buesseler from Woods Hole Oceanographic Institute "WHOI" (in-person) and Associate Dr. Rypina from Woods Hole Oceanographic Institute "WHOI" (virtual) was in attendance to present PowerPoint presentation to the NDCAP panel.POST

- Subject of Slide Presentation: Transport and Fate of Radioactive Contaminants in and around Cape Cod Bay
- PowerPoint Presentation to include:
  - ❖ Introduction to Woods Hole Oceanographic Institute (WHOI) and Ken Buesseler
  - ❖ Radioactivity in ocean
  - ❖ Introduction to Irina Rypina
  - ❖ Transport in and around Cape Cod Bay
  - ❖ Fate of Radioactive Contaminants
  - ❖ What is on site and what this means for the ocean
- WHOI: 1,000 people working at the Institute, 150 scientists (Leading not-for-profit institution in ocean science, engineering and education; strict code of conduct; independent work and integrity model; science should lead)
- Ken Buesseler: Introduces himself to the NDCAP Panel; he is the Director of the Center for Marine and Environmental Radioactivity; he has worked there since the 1980's and is also Director of an Independent Center. He is a radiochemist
- Describes Sources of Radioactivity in the World (Naturally occurring, Cosmogenic and Human Activity); he explains that it can be both harmful and beneficial; hard to comprehend differences in levels.
- Radioactivity in the Ocean Introduction Slide (description of Global Nuclear Weapons Testing, Chernobyl Incident and Fukushima Disaster; multiple isotopes)
- Describes what happens to radioactive elements in the Ocean (It all depends; Transport with ocean currents and dilution, Accumulation in Marine Life, Deposition and accumulation with seafloor sediments; Radioactive Decay)
- Irina Rypina: Introduces herself to the NDCAP Panel; she is Physical Oceanographer at Woods Hole Oceanographic Institute "WHOI" since 2008; she studies transport of water masses, properties and tracers in oceanic flows.
- Results of Model-based study of transport in Cape Cod Bay; funded by Sea Grant (pathways of the proposed wastewater discharge from the Nuclear Power Plant based on a model of the circulation patterns.
- Statistical Approach on Study; Repeatedly simulated wastewater release; there was a study conducted every 6 hours for 3 years; data collected on wastewater plume; reviews maps and different seasons; high probability that wastewater will come close to the coastline of the Bay; Winter/Fall transport out of the Bay is very low; Spring/Summer slightly higher probability that the plume will be outside of the Bay; Pathway for plume to get out of the bay is as follows: Wastewater will get in to the channel (just north of Provincetown), hug the coast, and then get in the southward current that goes towards the outer shell of the coastline. It takes approximately 3 weeks for the wastewater to get to the eastern elbow of the bay. And the timeline for the plume to get to Provincetown is one week.
- The next slide reviews wind conditions (main driver for the seasonal plume patterns); Spring/Summer: the main direction of wind is to the Northeast. Fall/Winter: the dominant direction change is to the Southeast and significantly stronger winds and pushes the wastewater into the bay.
- Future Research Questions (*compare other years, transport in 3D and model with higher resolution)

- Next slides reviewed by Dr. Buesseler: Radioactivity in fish and the time it takes for radioactive contaminants to cycle through the fish (*Tritium passes through as H2O within days; Cesium-137 similar to potassium: taken into the muscles/organs takes weeks; Stronium-90 taken up in the bones which takes years to be out of the system)
- Next slide discusses the behavior of radionuclides (higher biological concentration factors- potential fisheries concern; higher sediment partitioning- accumulate near outfall pipe)
- Next slide: What is currently in source waters at Pilgrim NPP (samples were taken at 3 different locations; MA results and Holtec agree and got similar numbers; Results are typical of Nuclear Power Plants; small subset of radioactive elements was measured; levels are much higher than in the ocean (not unexpected)
- Next slide: Analysis of Tritium and Cesium-137 (Tritium is 150x higher than drinking water limits and one million times higher than ocean; Cesium-137 is 40,000x higher than drinking water limits and 200 million times higher than ocean)
- Next slide: How do levels compare to the ocean and other standards (*No one drinks seawater/wastewater; the water at Nuclear Power Plant remains untreated; Findings reinforce the idea that water should not be released prior to extensive clean-up)
- Next slide: Does it matter which radioactive elements enter the ocean? Dr. Buesseler stated that yes- it does matter (*different health concerns; different biological accumulation; different seafloor accumulation; different times for loss by decay; overall finding that Tritium is the least concerning for radioactivity levels)
- Final slide: What happens to radioactive elements released from Pilgrim Nuclear Power Plant to the ocean? It all depends (*Transport will happen with ocean currents and dilution- water remain for weeks and potentially more in Cape Cod Bay; Expect low dose to humans and sea life- depends upon clean-up and release details; differences in accumulation in marine life and on seafloor; Sets precedent for disposal of radioactive waste in the ocean; Consideration of other options- hold for radioactive decay process of tritium after clean-up)
- James Lampert asks panel members if they have questions:
    - ❖ Mary Gatslick has a couple of questions; article in 2018 interview regarding water release comparison from Songs nuclear power plant in California (Dr. Buesseler responds: he expects dose to be low if this was released and the only solution; do a better job of monitoring the biological uptake, there will be concerns regarding the non-tritium isotopes) Next question: probability of the plume coming in to the inner bay (Irina responds: over 3 weeks after release near Pilgrim Power Plant; probability of 80 percent wastewater close to the coastline; can't tell what will eventually happen over several months/years- will need a high resolution model) Clarification of season and probability of leaving the bay/coming close to the coastline.
    - ❖ Mary Lampert has a few questions: the first question is focused on sea breeze effect, and she did not see it analyzed in late Spring/Summer/Early Fall (she refers to DPH and cancer study that was done); the second question is focused on the impact to Stellwagen; how far does it impact?) Irina responds that all the wind factors were considered in the model (both spatial and temporal). Second question response from Irina: she refers to the maps and brighter colors showing where the higher probability of encountering the wastewater will be). Mary Lampert also has questions for Dr. Buesseler: referring to the fish study and what about the effects on

the filter feeders. He explains that filter feeders will have higher concentrations of radioactive isotopes because of the additional exposure to the things that they are eating on the ocean floor. Mary Lampert then talks about Tritium and Dr. Buesseler points out that it passes through the body quickly and not as much a health concern as some of the other isotopes. Mary Lampert has another question regarding the tank and heavier particles that end up in the bottom of the tank. Dr. Buesseler talks about the chemistry (not weight/association to particles)

- Seth Pickering has question regarding wind data location and monitoring. Irina responds that wind monitoring conditions were done in the middle of the bay. Seth asks for clarification on where the data has come from to create the models. Irina is not sure where source of the data came from and will look into this further. Seth has additional questions: do we know what the volume of the water is in the bay; in total? Irina responds she does not know the volume. Seth has another follow-up question: how long does it take to get one complete change of that volume? Irina responds: the model focuses on 2 dimensional and it would need 3D transport to address the volume question. Pine duBois makes a follow-up comment; over the course of time of Pilgrim's operations 40-50 years; she estimates that 400 million gallons/day would cycle the entire volume of the bay through the plant at least once.
- Meeting attendee named Mike Fortini asks for clarification from Dr. Buesseler; Holtec has advised that the water would have extensive filtration that would remove the contaminants (except Tritium) before being discharged into the bay. Dr. Buesseler responds that he is not sure of the level of treatment; tritium is difficult to remove- not impossible.
- David Noyes from Holtec asks next question; what constitutes a plume and how much volume for that model to be accurate? What goes into the assumptions with your plume modeling? What volume does it assume? Irina responds: in the model, the wastewater at the Pilgrim Nuclear Power Station (5-kilometer square). It would not disperse differently in regard to transport pathways. The maps show pathways and associated time scales whether it would release one gallon or one million gallons in that domain. Question for Dr. Buesseler: are you aware that the Pilgrim Plant does have an environmental monitoring program that reports out on sediment sampling/shellfish sampling/fin fish sampling/crustacean modeling? David Noyes would like Dr. Buesseler to know that the modeling does exist. He further compares California Plant discharge of cesium levels to Pilgrim levels and states that they were both similar. He also states that California Plant levels were safe. Dr. Buesseler reports that he was not aware of that information or up on every report. He reviewed reports from 3 years ago with high detection limits. As a scientist, he looks from the lowest levels up for his findings. David Noyes responds that he believes that the information provided from the Songs analysis was a very important evaluation. He also states that he would be happy to share the information with Dr. Buesseler regarding cesium concentrations. David Noyes states that the treatment system will return to levels in 2015 (reduce concentration by that factor)
- Pine duBois has question for Irina and would like to further understand the graphs and maps displayed: she would like to clarify if it was wind measuring over 3 years

or tides? Irina responds: it was the simulation for ocean currents for every 6 hours for 3 years. Pine duBois asks: Do graphs reflect an average of that? Irina responds: yes- graphs reflect statistical map, showing most probable pathways; average of a season over 3 years. Pine asks for clarification: so, you averaged it by seasons? Irina responds: yes, and that it why I have the four sub-panels in my maps which correspond to the different seasons. Pine duBois follows up with additional question; you said it was surface- how deep would you call the surface? Irina responds: roughly 2 meters. This is what the transport would look like within the two meters of the ocean. Pine duBois refers to the first graph (slide 13) where the currents are coming down from the Gulf of Maine (compares to a map from Deer Island) and the discharge that comes into Cape Cod Bay. Pine thinks that the map looks familiar and that she has seen it before. Irina responds: yes- this map came from analysis of drifting buoys over a 20-year span. Pine responds: so, in terms of a study for something like this- to set a standard for decommissioning- are we going to put together something like the impact of Deer Island on Cape Cod Bay that might be causing deoxygenated plume in the summer season with something like this. She goes on to say that Holtec would not be discharging at the surface; they would discharge theoretically with the tides and the current, and the high tides. So- it will be diluted. She is trying to understand how we are going to take this study and help figure out what the answer is. Or- do we need more study to help figure out what the answer is. Dr. Buesseler responds that the 3D model could get some more depth information and higher resolution data- there are things you can do to improve; however, the general conclusions probably won't change. Pine duBois further makes the point regarding discharge and that we would be looking at a diluted plume rather than a concentrated plume- doesn't all of that have to go into the understanding of what would be the best course of action. Dr. Buesseler responds: the temperature would matter, the salinity would matter, the depth would matter- but he is not sure what the mixed layer depth would be at that point. He further explains that Irina's model represents a deeper slice than just the surface 6 feet. Pine comments that she loves the wind and knowing what the depth is and the tidal action. She thinks it is really important to the Bay. Dr. Buesseler confirms that the model takes into account tides and seasonality of winds. He further states that a higher resolution model could be done. Pine also requests the written report from Irina be sent to her so that she can read and review it again. Irina responds: yes- she has submitted a paper that should come out in the Journal of Oceanography very soon. Dr. Buesseler and Irina will send the report to the panel for peer review process. The title of her report is: Model based study of near surface transport in and around Cape Cod Bay in seasonal variability and response to wind.

- Kevin Canty asks question; is this model purely for the discharge of liquid and not for evaporated water? Dr. Buesseler responds yes. Kevin then asks- do you have any modeling for evaporation- forced or natural? Dr. Buesseler responds that this is not an atmospheric model and does not have transport. Kevin follows with: would any part of this model be useful in assessing the effects of evaporated water? Dr. Buesseler responds no- unless there is deposition to rain back in the ocean. Kevin

Canty clarifies that the point of entry into the water would be presumably variable where the rain falls. Dr. Buesseler responds: right. Kevin asks: is there any way to model forced evaporation and the effects of that- in the Bay or in the ocean off of Massachusetts- more broadly? Dr. Buesseler responds: that he not an atmospheric transport modeler but that the information would have to include precipitation, as well. Kevin Canty then confirms that they would need to get that information from another source and Dr. Buesseler responds- yes. Mary Lampert mentions that the sea breeze is also very relevant information.

- Andrew Gottlieb makes comment in regard to the PowerPoint presentation. He is not sure why so much of the time at this meeting has been used to cover a topic that is not based in reality. He further states that the whole activity has been told by the Commonwealth of MA that it is not in compliance with the Ocean Sanctuaries Act and that the Sanctuaries Act was not predicated on radioactive discharge. Andrew Gottlieb goes on to say: while this is a very interesting and informative conversation about how things move in the Bay; in terms of the things that are before this panel- he is unclear why they are spending any additional time on this topic.
- James Lampert has two additional questions: in regard to slide 10- looking at those two; my understanding is that Stellwagen Bank lies roughly to the North of the line heading west of the top of Provincetown- is that roughly it? The question that I'm really asking: do I correctly understand from these- that the discharge according to your study is that there is a high probability that at least some of it will flow into Stellwagen Bank? Irina responds: yes- but the colors on the maps over Stellwagen Bank are mainly green and blue (not yellow) so it is smaller probability. Irina believes that most of the water would go between the channel of Provincetown and Stellwagen Bank. James Lampert then mentions the Fall season in regard to Stellwagen Bank and the colors on the maps. His second question refers to the top row of the maps and probability of the flow along the west coast of Cape Cod Bay is quite high throughout the year and to the variability is more on the East and the Southeast side- is that fair? Irina responds; yes- that is fair. James Lampert has follow-up question regarding the next slide referring to wind conditions and the seasons. He asks if it was a buoy rather than a depiction of Pilgrim. Irina responds: map is of wind conditions in the middle of the Bay (wind speed and direction every 6 hours for 3 years). James Lampert responds: was there a buoy that took the readings? Irina responds that the model uses a North Atlantic modeling forecast. The wind study does include information from the buoys.
- James Lampert thanks Dr. Buesseler and Dr. Rypina for the presentation. He then asks the public if they have any factual questions. The first citizen refers to 2023 and Woods Hole being awarded a sea grant. He asks if the money from that sea grant was part of this study? Irina responds: yes. The second citizen asks: in what way has the wastewater been rid of any radioactive isotopes and have we tried to do cesium? James Lampert responds that this will be a topic covered by David Noyes later in the meeting. The third citizen asks: are you planning on continuing with this discussion into next year or are you just trying to attack science? Mr. James Lampert clarifies that he would like to cover questions only for Dr. Buesseler at this time. The

citizen then withdraws the question and James Lampert lets her know that she can ask questions of the panel later in the meeting. The next citizen makes a comment regarding wind modeling and that he would like to see more sophisticated modeling in the future. The fifth citizen asks: has Woods Hole tried to determine that man-made background (away from the influence of Pilgrim Nuclear) Dr. Buesseler responds: he knows the level in the ocean quite well regarding Cesium-137 (it is 0.002) The sixth citizen asks: did you make the recommendation that one of the options should be to hold this water until the Tritium decays that could happen in 24 years; was that one of your options? Dr. Buesseler responds: he said that there are several options (one being that if you could remove things that are easy to be removed- that should be done and if your concern is Tritium- what do you do with it. The point being made that materials can be held on that site for decades/centuries (liquid or solid form) and that over time the levels would go down.

David Noyes (Holtec) provides an update:

WATERFALL CHART

- First slide is a review of the Pilgrim Decommissioning- Waterfall Chart and sequential schedule activities; characterization and the license termination planning (completed round of Groundwater Monitoring Well Sampling (conducted between the dates of Nov. 18-21, 2024) as part of the MA Contingency Plan Phase II of the Comprehensive Site Assessment. This sampling was done to locate the sources and future plans for low levels of non-radiological effluence that were seen in the previous groundwater sampling. Holtec has completed the activities under the order of conditions for the path that was used to move the dry cast storage from the industrial area of the plant and will be submitting this month for closing out those Order of Conditions with the Town's Conservation Commission.

DEMOLITION /ONGOING ACTIVITY UPDATE

- Second slide is a review of the ongoing demolition activity. Removal of the augmented off gas system charcoal absorber vessels (19-foot tanks) that have both a radiological and asbestos component associated with the tanks. They were removed (all 12 of the vessels) and have been shipped for radiological disposal in Andrews, Texas. In addition, they continue with removal of the prompt alert notification system sirens (33 of 113) sirens removed; scheduled to complete in the first quarter of 2025.
- For demolition status- things have not changed since what was discussed two months ago. Holtec continues to focus on the augmented off gas building (small light-yellow block on the chart displayed) and continue with removal of the vessels and removal of the piping (ultimately demolition of that augmented off gas building will be conducted)

REACTOR INTERNAL SEGMENTATION

- Internal Segmentation work is complete. Holtec is in the process of removing equipment from the dryer separator pit and the reactor cavity (equipment that was required to support the segmentation activities) Once all that material is removed; they will be ready to drain the reactor cavity and dryer separator pit to the torus.

REGULATORY UPDATE

- Received 3rd quarter 2024 Inspection Report (Two onsite weeks July 29-31st, 2024 and September 9th-12th, 2024) The results were no violations of more than minor safety significance identified.
- HDI submitted NPDES and Surface Water Discharge Permit renewal application on November 15th, 2024. This is the 5-year renewal of the 2020 permit.
- Reported Septic System Overflow of less than 50 gallons that occurred on November 11th, 2024. There was a mechanical issue with one of the pumping stations on-site that resulted in less than 50 gallons that made it to the storm sewer. There was no indication of any odor or any flow at the outfall into the intake canal. Holtec did report to MassDEP, EPA, Plymouth Board of Health and the Nuclear Regulatory Commission (USNRC)
- James Lampert asks for a copy of the renewal application to be submitted to the NDCAP Panel. David Noyes thinks that he will be able to complete this request.
- Onsite Water Volume Update; water volume onsite effective date as of November 15th, 2024 (916,442 gallons approx.- remain on-site) The heaters in the Spent Fuel Pool were energized on November 4th, 2024 for building and refueling floor heating; it has been successful so far at keeping the temperature on refueling floor (65 degrees Fahrenheit); maintaining temperatures well above freezing in the quadrant portions of the reactor building.

SITE SOURCE TERM REDUCTION

- Holtec continues to transport for disposal the majority of the Class A waste that is being generated and some of the Class B waste. In 2024 to date- just over 33,000 cubic feet with 71 curies of activity; bringing the total for the project to quarter of a million cubic feet and under 2,000 curies of activity shipped.

FOLLOW-UP QUESTIONS FOR DAVID NOYES

- Mike Fortini asks question regarding the reactor building and turbine building as far as demolition; looking for clarification on when those activities are scheduled/projected to be started. David Noyes confirms that it will be between the years 2033-2036. Question being asked as to what the critical path activities will be leading up to that timeline. David Noyes replies that characterization of the site; submission of the license termination plan and continued removal of the internal components within those buildings.
- James Lampert asks question regarding volume of water (916,000 gallons); is it fair to say that the decrease to that from the last report is due to all-natural evaporation; he noticed that the heaters weren't started until a few days later. David Noyes reports that yes- that is fair to say. A very small percentage of the difference is due to any heating that was conducted.
- Pine duBois asks question regarding the container on one of the trucks (slide 8 of the presentation). David Noyes replies that it is an impact limiter on a Type B storage cast; over pack for shipment; single truck with a flat surface. Pine duBois clarifies where material is being shipped. Mr. Noyes confirms that the truck is heading to WCS in Andrews, Texas. James Lampert then asks if it was all transported by truck. David Noyes replies that yes- it did.

- Mary Lampert asks question (referring to the last meeting)- if you were to ship the water related to train travel. Holtec had mentioned that they would drive the truck to a train in Pennsylvania. Mary Lampert would like to know why they would not transport and use a train that Vermont used which seems a lot closer. David Noyes replies that they need a facility to use and may be able to transport on the Vermont property; however, the closest facility that is licensed to transport liquid is in Pennsylvania. Holtec would have to figure out liability and other issues with transport. David Noyes will look into this option and will report back to the Panel.

INTERAGENCY WORK (IWG UPDATE)

- Seth Pickering (MassDEP) provides an update to the Panel. Holtec sent an email to MassDEP a couple of weeks ago (November 8th, 2024) informing the Department that it was planning a pilot test using a barrel evaporator to evaporate water containing a solution of sodium pentaborate. Holtec would evaporate 55 gallons of sodium pentaborate solution and if successful; Holtec would seek to evaporate a total of 4,000 gallons of the solution containing sodium pentaborate. The 4,000 gallons of wastewater containing sodium pentaborate is not part of the approximately 900,000 gallons of wastewater in the spent fuel pool, reactor cavity dryer separator pit or torus; components of the reactor system. MassDEP has requested that Holtec not proceed with the 55-gallon test evaporation at this time. The Department is in the process of preparing questions regarding Holtec's evaporation proposal in regard to air quality and waste treatment and/or disposal in accordance with MassDEP regulations and applicability. MassDEP will be evaluating where the state regulations may apply.
- The permit modification- as previously reported; MassDEP issued a final determination to deny Holtec's application for a wastewater discharge permit modification. Holtec has appealed this determination. MassDEP Office of Appeals and Dispute Resolution (OADR) has issued an initial scheduling order and considering several petitions by outside parties to intervene in the proceedings. Seth confirms that this has been finalized with the Panel. James Lampert confirms that this was finalized about a month ago and that there are four intervenors who are parties in addition to Holtec and MassDEP.
- Seth Pickering makes statement that due to pending appeal; MassDEP is not able to meet or discuss this matter with any members of the Public due to ongoing legal proceedings. In regard to the MassDEP Surface Water Discharge Permit (5-year renewal)- Holtec has submitted on November 15th, 2024. On Site Assessment work- the Attorney General's Office is working to finalize the state's response to Holtec's site assessment work plan. Seth can't speak to the timing for the AGO's review. Response actions under the Mass Contingency Plan (MCP) 21e are ongoing. In response to notifications of PCB's, metals and PFAS detections in 2022; Phase II Comprehensive Site Assessment which documents the nature and extent of contamination and contains a risk characterization is due to be submitted by April 21st, 2025. As far as any other cleanup issues- there are no other updates from MassDEP, at this time. MassDEP continues to work with the site on demolition activity and asbestos requirements. MassDEP meets regularly with the Company as they move forward with different abatement and disposal issues as far as asbestos. MassDEP continues to evaluate Holtec's request to change its wastewater disposal system to a Title V system. Seth confirms with David Noyes

regarding current status. Mr. Noyes replies- that Holtec just supplied the 5-year data that was requested. Holtec will be coming up with a schedule.

- New items from MEMA; MEMA's Eastern Regional Office is continuing to work with the former EPZ communities on comprehensive emergency continuity planning; MEMA's logistics division has recently taken possession of 3 portable meters from the former Bridgewater Reception Center. The meters are now staged at the state's logistics warehouse. James Lampert asks Seth Pickering if they are operating. Seth confirms that he can't answer to that question. It is confirmed by another Panel member that the meters are operational but currently in storage. James Lampert asks for further clarification regarding the sodium item mentioned in the MassDEP report. David Noyes provides a further description to the Panel and confirms that it is chemical waste.

PUBLIC COMMENTS

- First citizen (Amesbury Resident); directed question to Site Vice President at Holtec; a previous contractor had assessed that 60 percent of any airborne effluent would fall into the Coastal Waters of MA. His question to John Moylan- do you accept that this is roughly accurate? Mr. Moylan is not aware of any previous contractor or report referenced. The citizen will provide Holtec with further information. The citizen is also asking for further rationale/justification for allowing the continued radioactive wastewater and refers to the Ocean Sanctuaries Act. David Noyes replies on behalf of Holtec that they do not believe it is in violation of the Ocean Sanctuaries Act. And the reason why it's o.k. to continue to discharge the evaporated effluent- is because it is highly regulated by the NRC, monitored for the impact on the environment and assessed both at the point of release and for the impact on the environment. The citizen doesn't understand why it's not in violation of the Ocean Sanctuaries Act. David Noyes replies- it is a legal rationale. Mary Lampert references Harvard Study to provide further details to the citizen. The citizen continues to provide feedback that he thinks Holtec is acting in an unethical manner and not considering the people of MA by continuing on this path. Mary Lampert refers to previous minutes throughout the year where Holtec has agreed with the findings of the Harvard Study. David Noyes replies that he has actually not seen the study. Mary Lampert will find the study and provide a copy to Holtec.
- Second citizen (Chair of the Plymouth Board of Health); he has a couple of follow-up questions for David Noyes. How was the 90-degree temperature decided upon in regard to the heaters? David Noyes clarifies that it is not 90-degree temperature and that they are set for less than 125 degrees, by design. The citizen asks for further rationale behind that decision. David Noyes replies: that was the temperature in which the equipment (spent fuel pool and reactor cavity) generally maintained during the 40-year plant operation. Mr. Noyes describes that they made this decision based on past experience and because they would know what the impacts on effluence would be. The citizen is concerned about where the workers are and would like to clarify regarding 65 degrees. David Noyes confirms that yes-it is in fact- 65 degrees on the refuel floor. And before the heaters were turned on, approximately 55-60 degrees. David Noyes thinks that the heaters have made a significant difference with the weather getting colder. The citizen also makes comment that if you look

at what NRC allows, or state/federal agency allows (in terms of maximum contaminant limit)- it means that it is allowed but it does not mean that it is safe or without any risk.

- Third citizen (Retired Electrical Engineer); makes comment regarding Holtec in complimentary manner and feels that company should be commended. He references fear mongering and feels that things are being delayed unnecessarily.
- Fourth citizen (League of Women Voters); what does Holtec do in terms of monitoring radiation contamination for their workers? David Noyes replies that Holtec has procedural controls for workers in radiological area (maintains dosimeter of legal record) If they are performing activities in elevated radioactive fields; they have electronic dosimeters to track the amount of radiation exposure which they can see in real time. In addition- they have respiratory protection in areas where they may be subject to airborne contamination and assessments for those workers in those environments, as well. The citizen makes comment that she is glad to hear of these precautions but brings up a previous worker who has suffered and is suing Holtec, at this time.
- Fifth citizen (Cape Downwind); refers to Whistleblower letter and she feels that nothing has been done in regard to the allegations that were made in that letter. She also mentions criticisms that she has heard regarding the submersion heaters being used in the water from company employees. She also references Senator Markey visit in May 2022, state decision and that she is untrusting of Holtec. Another point she makes is in regard to water being dumped by Holtec in Oyster Creek, New Jersey (questions regarding evaporation and saying that Holtec refused to do the evaporation) David Noyes provides the citizen with additional information regarding scaling and the current situation at Pilgrim. Mr. Noyes confirms that Tritium is the only material airborne at the facility. The final statement from this citizen: the community is asking Holtec to stop forced evaporation and poisoning our community.
- Sixth citizen refers to the presentation given by Dr. Buesseler and asking for the Panel to provide a key chart (in the future), so they are able to better understand the information. He thinks that the measurements discussed were confusing and not consistent throughout the report. James Lampert agrees with the citizen and will work with Holtec to use curies going forward; useful practice to begin implementing.
- Seventh citizen agrees with the previous citizen who requested a key chart going forward. She also does not think that the term fear mongering should be used if you don't understand something.
- Eight citizens have two questions for Holtec: regarding cleaning/filtering the radioactive nuclei. David Noyes says that they currently do not do that (run a portion of the water through the fuel pool demineralizer); water treated prior to discharge in the future. Next question regarding NRC and obligation to report what numbers come out of the stack. David Noyes says that the information is recorded monthly and reported annually to the NRC. The NRC webpage has all the annual reports (effluent release) that provide all of the data. David Noyes confirms that the stack releases not only Tritium but other materials. James Lampert confirms the timeline release of the annual reports (March), and Mary Lampert asks question of Mr. Noyes regarding isotope of which Mr. Noyes is not familiar.
- Ninth citizen discusses credibility gap on the panel with the general public.

- Tenth citizen has question for Holtec Representatives; she is asking if either live in proximity to the plant. David Noyes lives in West Plymouth (within 10 miles of the plant); he is comfortable with the water being released into Cape Cod Bay. This citizen lives very close to Pilgrim and is very concerned about public safety (children, pets, neighbors); she is very uncomfortable with Holtec and is not o.k. with this and will work to stop this.

CLOSING AGENDA ITEMS

- Elect and Vote on the next Board Chair of the NDCAP Panel for upcoming one year term; James Lampert confirms that he is not running for re-election. A couple of nomination rounds of voting were conducted but there were not enough votes to confirm a Chair or Co-Chairs at this meeting. Decision made by the panel to address and discuss this item at the beginning of the next NDCAP meeting.
- Mary Gatslick discussed the compilation of the annual report. It was agreed upon by the panel that it will follow the same format as last year. Further discussion is needed at the next NDCAP meeting.

ADJOURNMENT

- Motion to adjourn by James Lampert; seconded by Seth Pickering (all panel members in favor; it was a longer meeting than usual due to the earlier presentation given by Dr. Ken Buesseler and Dr. Irina Rypina of Woods Hole Oceanographic Institute.