

**NUCLEAR DECOMMISSIONING CITIZENS ADVISORY PANEL (“NDCAP”)  
Monday, September 26, 2022  
Hybrid Meeting (in-person and virtual)  
Meeting Minutes**

The meeting was called to order at about 6:30 pm by Mr. John Mahoney

**NDCAP MEMBERS PRESENT**

- Pine duBois, Speaker of the House Appointee (Vice Chair) (in person)
- Mary Lampert, Senate President Appointee (in person)
- Mary Gatslick, Minority Leader of the Senate Appointee (in person)
- John Mahoney, Plymouth Select Board Designee Delegate (in person)
- Henrietta Cosentino, Plymouth Select Board Appointee (in person)
- David C. Nichols, Governor Baker Appointee (virtual)
- Seth Pickering,<sup>1</sup> Department of Environmental Protection (in person)
- Jack Priest, Department of Public Health, Radiation Control Program (virtual)
- William Crocker, Executive Office of Housing and Economic Development (virtual)
- John Viveiros,<sup>2</sup> Massachusetts Emergency Management Agency (virtual)
- Robert Hayden, Commissioner, Department of Public Utilities (virtual)
- Mary Waldron, Old Colony Planning Council (virtual)
- Kelly O’Brien, UWA Representative (in person)
- David Noyes,<sup>3</sup> Holtec Decommissioning International (in person)
- John Moylan, Holtec Site Vice President (virtual)

**NDCAP MEMBERS NOT PRESENT**

- Amy Naples, Senate President Appointee
- Richard Quintal, Representative of the Town of Plymouth
- Robert Jones,<sup>4</sup> Executive Office of Health and Human Services (virtual)

**GUESTS IN ATTENDANCE**

- Jim Cantwell, representing U.S. Senator Edward Markey’s office
- Caleb White, representing U.S. Senator Elizabeth Warren’s office
- Michael Jackman, representing Congressmen Bill Keating’s office
- State Senator Susan Moran
- Doctor James Conca
- NRC: Bruce Watson, Neil Sheehan
- ERM: Matt Daly and John Drobinski
- Public: 61 public attendees virtually with 156 in-person

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<sup>1</sup> Designee of Secretary Card (Executive Office of Energy and Environmental Affairs)

<sup>2</sup> Designee of Dawn Brantley (Massachusetts Emergency Management Agency)

<sup>3</sup> Designee of Pat O’Brien (Holtec)

<sup>4</sup> Designee of Secretary Sudders (Executive Office of Health and Human Services)

Mr. Mahoney confirmed that 14 members were in attendance out of 21 seats. Several vacancies still exist.

## **REVIEW OF MINUTES**

Ms. Mary Lampert advised that the statement read by Mr. Jim Lampert during the public comments section should have been more robust. Ms. Lampert said the statement was e-mailed to the panel. The statement regarded the applicability of state and federal statutes protecting Cape Cod Bay. Also, she wanted to emphasize that Holtec answered yes when asked whether the company would comply with the statutes mentioned by Mr. Lampert.

Ms. Lampert then again referred to the public comment section, specifically a comment about a study conducted by Massachusetts. The comment:

“Christine Danielson asked about the cancer influx that would occur if the water were to be discharged. Mr. Noyes mentioned that studies were conducted by Massachusetts and found that there was no connection between the cancers in Plymouth and the powerplant. Ms. Lampert said that Mr. Noyes was incorrect.”

Ms. Lampert wants added that she said, “ Ms. Lampert disagreed with Mr. Noyes and said if you are referring to the Southeast Massachusetts health study, that would be incorrect.”

Mr. Noyes requested that there be an opportunity to review the study prior to voting on the minutes. Mr. Mahoney advised that there be a motion to table the minutes for 60 days to review the study. Ms. Lampert mentioned that she e-mailed the study and perhaps it could be e-mailed around.

Ms. duBois advised that the correct spelling of Betty’s last name should be Cavacco instead of Kovaco.

Ms. duBois referred to Mr. Noyes’ update about demolition, specifically:

“To date, more than 50% of the buildings on site were demolished to grade. The remaining buildings are to be demolished prior to the end of the year.”

Ms. duBois and Mr. Noyes clarified that not *all* remaining buildings on site would be demolished by the end of 2022. Instead, it should be which buildings would be demolished by the end of the year.

Ms. duBois requested that the adjournment section of the July 25, 2022 minutes say: the motion to adjourn was requested by Ms. duBois, made by Ms. Gatslick, and seconded by Mr. Noyes. She specified that the chair cannot make a motion.

Motion to table the minutes for 60 days was made by Mr. Mahoney and seconded by Ms. Waldron.

Mr. Mahoney asked whether Ms. Lampert could share the study with Mr. Noyes (Southeastern Massachusetts Health Study). Ms. Lampert said she could e-mail it to the panel.

Motion to table the July 25, 2022 minutes for 60 days was approved.

## **PANEL MEMBERSHIP UPDATE**

Mr. Mahoney allowed the newest members of the panel to introduce themselves.

Mr. William Crocker is EOHED Secretary Kenneally's designee. He was a former state representative and currently is the southeast regional director for the Massachusetts Office of Business Development.

Mr. Kelly O'Brien represents the UWUA/workers at Pilgrim Power Plant. He currently works for Eversource as a substation tech lead engineer.

Mr. Mahoney introduced Mr. Andrew Gottlieb and asked if he would like to make a statement. Mr. Mahoney was not able to tell if Mr. Gottlieb was on the screen.

Mr. Mike Fortini introduced himself to the panel and the public. He has been involved with NDCAP behind the scenes. He is a registered professional engineer and has worked in the nuclear industry for 43 years. Mr. Mahoney clarified that Mr. Fortini was still awaiting approval from the Governor to be part of the panel.

Ms. Lampert asked if there has been or when will there be a reappointment of three members. Ms. Lampert listed: Dave Nichols, Jack Priest, and Pine Dubois. Mr. Jack Priest said he was waiting on approval from the EOHHS Secretariat. Mr. Dave Nichols and Ms. Dubois indicated that they were not aware of their status.

Ms. Lampert commented that members who are not appointed generally cannot be part of meetings. Ms. duBois noted that this was already discussed in July and went on to say that until appointments are made, current members can continue to serve.

Robert Hayden indicated that his term at the DPU is coterminous with the Governor. He does not expect to continue to serve starting in January.

BRIEF PUBLIC COMMENT PERIOD for those not able to stay for most or the entire meeting

Timothy Bennett Jr. of the Boys Scouts read a statement to the panel. The statement regarded his enjoyment of Cape Cod Bay and his concerns about discharge of radioactive waste into the Bay.

Ms. duBois reminded the panel about the Open Meeting Laws due to the amount of e-mail traffic.

### **LEGISLATIVE DELEGATION**

Mr. Mahoney introduced State Senator Susan Moran.

Senator Moran informed the panel and public that an amendment was adopted to the Senate's Economic Development Bill, which establishes a special commission to study the impacts of spent fuel pool water discharge into Cape Cod Bay. She will continue to advocate until there is a final bill.

Senator Moran has continuously met with citizens and activists concerned about the issue of discharge. Senator Moran then referenced the congressional subcommittee meeting with U.S. Senator Ed Markey's office earlier this year.

State Senator Moran held a meeting with local stakeholders along with Massachusetts DEP (MassDEP), Massachusetts DPH (DPH), Massachusetts Attorney General's Office (AGO), and members of state and federal delegations. There was a concern regarding confidence in the testing process. DPH will be present during the water sampling of the spent fuel pool water.

Mr. Mahoney introduced Mr. Jim Cantwell.

Mr. Cantwell read a statement on behalf of U.S. Senator Markey. The statement emphasized the point that Holtec must continue to listen to stakeholders and do right by the community that hosted the power plant station.

The statement also reiterated Senator Moran's demand for transparency throughout the testing phase of the spent fuel pool water and that DPH would be present during the testing. U.S. Senator Markey is focused on finding experts in certain fields who can engage in a robust independent analysis of the water samples.

Mr. Mahoney introduced Mr. Caleb White from U.S. Senator Elizabeth Warren's office.

Mr. White read a brief statement. The statement focused on the potential dangers associated with discharge of radioactive water into Cape Cod Bay. The statement also emphasized community engagement by Holtec and the NRC to determine the appropriate action of disposal.

Mr. Mahoney introduced Mr. Mike Jackman from Congressman Bill Keating's office.

Mr. Jackman acknowledged the efforts to promote transparency and safety during the decommissioning process. Congressman Bill Keating's office looks forward to reviewing any reports.

Mr. Mahoney thanked all the members of the delegation.

## **PUBLIC COMMENTS**

To accommodate more public comments, Mr. Mahoney asked whether there were any public comments from anyone who needed to depart prior to adjournment.

Ms. Peg O'Hearn read a statement. The statement was about her concern regarding the discharge into Cape Cod Bay. She believed that living near the power plant was safe so long as procedures were in place. She has noticed that the habitat in the water at several beaches no longer exist. She went on to explain a cancer cluster located near Priscilla Beach.

Ms. Joanne Wilson said that she voted against the dumping of radioactive water into the bay. She also attended a webinar about the discharge into Cape Cod Bay. The webinar included a discussion on the currents inside the bay which would drag that radioactive water into Dennis. Ms. Wilson demanded that the water not be discharged and reminded the panel and public that the Board of Health in Plymouth has voted against the discharge of radioactive material into Cape Cod Bay.

Ms. Leslie Danielson reiterated part of Ms. Wilson's statement about the cleanup in Woburn. Ms. Danielson also demanded that the water not be discharged into Cape Cod Bay.

A member of the public, who did not identify himself, discussed the discharge from the Yankee Atomic Power Plant into the Deerfield River. He mentioned cases of down syndrome and other cancers in the Deerfield River Valley.

Ms. Cosentino read a statement on behalf of Ms. Cavacco. Ms. Cavacco is concerned about the lack of transparency and communication between the NRC, Holtec and the Town of Plymouth. She raised concerns during the last meeting about the effects that discharge will have on the town and Cape Cod Bay. There is a deep concern for the local economy and coastline.

Ms. Cosentino would like noted for the record that she, along with Ms. Lampert, wants time at NDCAP to be spent on the legal issues surrounding discharge. She believes that the time spent on a presentation on tritium is irreverent because discharge is illegal.

### **HOLTEC UPDATE**

Mr. Mahoney introduced Mr. Noyes to provide an update. The update was given along with a PowerPoint presentation.

Prior to starting his presentation, Mr. Noyes reminded the public and panel that Holtec has been split sampling with DPH in groundwater tritium monitoring for several years.

Mr. Noyes began with describing the waterfall chart. He noted that the milestones for submitting the license termination plan in 2024 and partial site release in 2027 remain on track. The activities on site that are in progress include reactor segmentation, dismantlement of site structures, and waste management activities.

Mr. Noyes described demolition activities on site. Both the two-story butler building and the admin executive building have been demolished. The following structure to be demolished is the trash compaction facility.

The next slide provided an update on the underground storage tank removal. To date, 6 of the 8 storage tanks have been removed. There were no leakages from the tanks when they were removed from the ground. The remaining 2 are scheduled to be removed in April 2023.

To date, more than 60% of the buildings on site were demolished to grade. Five additional buildings are scheduled for demolition between the fourth quarter of 2022 and first quarter of 2023.

The restoration of Haul Path Road has been completed in accordance with town permits. Restoration activities such as planting have been completed and Holtec is now in the monitoring phase.

Currently, 14 of the 14 fuel pool racks have been removed from the pool for shipment. Additional reactor segmentation work continues.

For site characterization, surveys for building slabs are ongoing. Sampling of below grade material is also ongoing during storage tank removal. For non-radiological characterization, assessments of ground water elevations and flows contour mapping are completed. Holtec is developing a PCB Abatement Measure Plan which will be submitted to MassDEP.

Leaching Pits have been removed in accordance with the MSA. There was a severity level IV non-cited violation for radiological control measures during entry of an infrequently accessed area of the plant. The action has been entered into the corrective action program and process changes were implemented.

For the next meeting on November 28, 2022, Holtec intends on sharing the historic radionuclide concentrations in potential discharges from the plant should Holtec decide to discharge. The non-radiological sample results of onsite water storage will also be shared.

Removal of the waste continues from the site. 68,435 cubic feet of Class A waste has been removed. The goal is to remove all the waste as it is generated and not have it stored on site.

Mr. Noyes asked whether there were any questions. Mr. Mahoney confirmed with Mr. Noyes that Holtec will share potential radioactive and non-radioactive sampling in November. Mr. Noyes confirmed this and said the sampling would be conducted by Holtec.

Mr. Priest asked whether Mr. Noyes will share historical data or provide live time data. Mr. Noyes responded that the radiological data will be historical data, which includes treated water tank concentrations for radionuclides and past discharges. The current data will be for the non-radiological contaminants.

Mr. Priest stated that this is not the split samples that the state is going to do with Holtec but instead historical content.

Mr. Mahoney asked how old the data would be by the time of the November 28 meeting. Mr. Noyes said it would be within a couple of months.

Mr. Mahoney asked Mr. Noyes whether water was still being used for decommissioning activities. Mr. Mahoney wanted to verify whether the time frame was being extended into 2023. Mr. Noyes confirmed that the water will be used until the first quarter of 2023.

Mr. Mahoney then asked whether sampling would occur once the water is no longer needed for decommissioning procedures. Mr. Noyes said that Holtec would be open to the idea.

Ms. Lampert asked whether Mr. Noyes was discussing the 1.1 million gallons of water that could potentially be discharged. Mr. Noyes said the water would be commingled and would impact the 1.1 million gallons. Ms. Lampert followed up and asked whether discharging would not be entertained in the first quarter of 2023 because the state and other agencies would still have to test that water. Mr. Noyes said it depends on how quick the review process will be.

Ms. Lampert asked what is the earliest the water would be discharged. Mr. Noyes estimated that it would occur during the mid-first quarter of next year.

Mr. Mahoney stated to Mr. Priest that Holtec was amenable to do split sampling either before or after these activities. In response, Mr. Priest indicated that he could not give an answer tonight on the split sampling timeline.

Mr. Dave Nichols asked how much water (of the 1.1 million gallons) is needed to finish the work Mr. Noyes referred to in his presentation. Mr. Nichols followed up with whether 200,000 gallons could be released and if the remaining was enough. Mr. Noyes indicated that he was not sure whether the water would be needed as it would depend on the activities and work progression.

Mr. Nichols asked whether Holtec would be doing sampling at any point because the characteristics of the water would change and potentially get comingled. Mr. Priest mentioned that Holtec is not permitted to release any water at this time but there would be an opportunity to analyze the water prior to release if it were to happen.

Ms. Lampert discussed the NPDES permit and the decommissioning process. Mr. Noyes clarified that it is the water onsite which currently resides in the spent fuel pool. Ms. Lampert then asked whether removal of the water was part of the decommissioning process. Mr. Noyes agreed that removal of the water was part of this process. He further clarified that this includes the water that existed during the life of the plant. It is not water created by decommissioning.

Ms. Cosentino stated that she did not understand the relevance of historic data. It is her understanding that the water used during the lifetime of the plant is different from the water currently on site.

Ms. Cosentino then asked why Holtec is considering discharge when it is against the law. Mr. Noyes said if it is against the law, Holtec will not discharge. Ms. Lampert interjected and restated an earlier point by Mr. Noyes that the water needed to stay on site for other processes. She said it would make it part of the decommissioning processes. In response, Mr. Noyes said it is the water that was used for 40+ years for plant operation.

#### **INTERAGENCY WORK GROUP (IWG) UPDATE**

Mr. Seth Pickering provided an update on IWG activities.

Regarding the environmental site assessment (ESA) work plan, there are no changes. MassDEP, DPH, and AGO are reviewing Holtec's responses and comments submitted to the state at the end of January. The review should be done this week and sent to the AGO as soon as possible.

Regarding the NPDES Permit and state surface water discharge permit, as stated in prior meetings, U.S. EPA, DPH and MassDEP have not received a formal request by Holtec to discharge spent fuel cooling water (or other water) into Cape Cod Bay. If such request were received, including sufficient analytical information to make a determination, EPA and MassDEP would review and provide a determination to Holtec on the necessary next steps. Any new or amended NPDES permit would be subject to a federal consistency review by the Office of Coastal Zone Management (CZM) and notice of public comment.

MassDEP's position continues to be that Holtec must comply with NPDES permit along with the surface water discharge permit which plainly prohibits the discharge of any pollutants in the spent nuclear fuel pool water and other water.

In conjunction with any application for an amended NPDES and surface water discharge permits, Holtec will need to submit to EPA and MassDEP comprehensive sampling of the spent nuclear fuel pool water and other water.

Mr. Pickering gave a status update regarding cleanup at the site. On April 14, 2022, DPH received a 120-day notification for 4 different areas at the pilgrim station site and associated properties. Mr. Pickering listed all the compounds that exceeded the reportable concentrations which include Pfas and Pcb1253.

On July 21, 2022, MassDEP sent Holtec a notice of responsibility letter regarding the compounds that exceeded reportable concentrations. Holtec now has one year for response actions or can opt to include additional notifications in the ongoing comprehensive response actions.

Holtec and MassDEP have met continuously to address ongoing asbestos removal which includes identification, abatement, and discovery.

There are no changes to the public safety update. Massachusetts Emergency Management Agency (MEMA) continues to work with local partners. MEMA is discussing with former EPZ communities the potential for tabletop exercises or other preparedness for future phases.

Mr. Mahoney asked what the time frame for split sampling is. Mr. Pickering acknowledged that he just found out about Holtec's plan to conduct split sampling and would report back. Mr. Mahoney clarified his question to mean the turnaround time for sampling. Mr. Pickering said he did not know.

Ms. duBois asked Mr. Pickering who at CZM was the IWG dealing with. Mr. Pickering said he was not sure and would verify with EEA.

### **TRITIUM PRESENTATION**

Doctor James Conca gave a presentation on the "Science of Tritium." He began by saying tritium is unique compared to other radionuclides and is the weakest radioactive material in the universe. The concentration of tritium must be extremely high to cause any real effect.

The presentation was paused due to issues with setting up the projector. During this time, several members of the public provided statements expressing concern with Holtec's potential plan to discharge spent fuel cooling water into Cape Cod Bay.

Doctor Conca continued with his presentation.

According to Doctor Conca, the scientific community has never observed any humans or organisms in the environment to have been harmed by tritium at any level from any source. He then went on to discuss the different types of units and numbers used when discussing radioactivity.

The presentation continued with Doctor Conca explaining in scientific terms the physical decay of tritium. The physical decay half-life of tritium is just over 12 years. He explained that biological half-life differs because it refers to how long tritium will remain within the body. In humans, it is approximately 10 days and in fish, it is 2 days. Tritium does not concentrate up the food chain.

Since there have been no documented health effects outside of laboratories, several countries have had to 'guesstimate' what maximum regulatory limits to set. Doctor Conca listed a series of countries such as the United States, Canada, and Russia and their tritium limits.



Doctor Conca discussed what would happen if tritium were to enter Cape Cod Bay. Any dissolved constituent or chemical species in any pack of water that is in a concentration higher than the surrounding water will disperse or spread out to reach a steady-state. Tritium would mix in within days or several weeks.

A map of currents in Cape Cod Bay was presented to the panel and the public. One of the currents goes out to sea while the others funnel south along the coast and towards Race Point in Provincetown. Doctor Conca noted that the currents change and the water from the plant should be discharged when they flow northbound rather than southbound.

Doctor Conca then discussed the effects of discharging all the Pilgrim tritiated water into Cape Cod Bay. He listed a series of possibilities and formulas depending on if the water is well-mixed or not, the amount being mixed, the amount being discharged, and other variables. He mentioned that discharge would be over time and no more than 40,000 gallons a day whenever discharge occurs.

The Pacific Northwest National Laboratory conducted an experiment in 1975 on accumulation of tritium from tritiated water in an aquatic environment. It found that carp, clams, crayfish, periphyton, pondweed, and sediment had low levels of tritium. Tritium came out of those organisms within 30 days after freshwater was introduced into the pond.

Doctor Conca advised that if discharge were to happen, it should take place when the currents are flowing north. Northbound currents would take the discharge into the Atlantic Ocean. He then presented a slide which lists the amount of annual exposure on the human body from man-made radiation.

### **PANEL QUESTIONS**

Ms. Gatslick asked whether there is a difference between the effects of tritium in women with fetuses and a child. Doctor Conca explained it would have to travel through the mother to get to the child. To date, no one has gotten enough tritium to know the differences.

Ms. Gatslick followed up by asking whether a child would be affected by eating seafood from Cape Cod Bay containing low level of tritium. Doctor Conca advised that it would be a difficult calculation without radiology, knowing about the clams, the length of time the clams have been there with discharge.

Mr. Nichols asked what the differences were between evaporating the water and discharging the water containing tritium. Doctor Conca said that tritium is heavier than ordinary water and it depends on how much water is being evaporated. He emphasized that evaporation does require a lot of energy.

Ms. Lampert asked whether a nine-month fetus would be negatively impacted by tritium, more specifically, whether the tritium is in the baby's water. Doctor Conca explained how much tritium would be needed and how it would have to be concentrated to a very high amount. He was not sure how that would be done.

### **PUBLIC COMMENTS AND QUESTIONS**

Dr. Barry Potvin, a member of the public, referred to the Journal of Environmental Radioactivity. The 2013 study focused on mussels and how they incorporated tritium into their tissues. Doctor Conca explained if something is injected with tritium, it will incorporate that material.

Mr. Priest asked what the date of the referenced paper was. Barry responded that it was published in January of 2013 and cited at least 20 times. Doctor Conca explained that these types of studies are hard to conduct because it is difficult to control things making it much harder to compare with other studies.

Barry mentioned that oysters filter between 30 and 50 gallons of water a day and would incorporate tritium. Doctor Conca responded by theoretically asking how long the tritium would be available to the biota in Cape Cod Bay and how quickly the biota could get rid of the tritium. Doctor Conca answered his own question with, "not forever."

Ms. Turco referred to a study about radionuclides at Fukushima and said she would share the report with the panel. Mr. Priest mentioned that tritium does not bioaccumulate up the food chain according to several studies. He continued by stating that this was not a science issue but a perception issue.

Ms. Turco continued by stating that the EPA has a goal of zero radionuclides. She then asked Doctor Conca whether he knew what the International Atomic Energy Agency stance on tritium was. She noted that special attention must be paid to the disposal of tritium and disposal should be in containments that prevent tritium from going into water.

Ms. Pat Watson of East Bridgewater was concerned about any tritium in the water. Doctor Conca reiterated that tritium does not bioaccumulate while other elements do.

Mr. Lampert mentioned that discharge by Holtec into Cape Cod Bay was illegal. He then continued by stating that Holtec will release non-radioactive pollutants and that no treatment system is perfect. Further, Mr. Lampert claimed that a lot of tritium will be released and it cannot be filtered.

Mr. Lampert stated that the Clean Water Act should prevent Holtec from discharging into Cape Cod Bay along with the Ocean Sanctuary Act because Cape Cod Bay is a protected body of water. Any action of discharge would violate those statutes.

Mr. Lampert reminded the panel and public that Holtec agreed to comply with all federal and state laws under the settlement agreement with the Commonwealth.

Doctor Benjamin Cronin reiterated Mr. Lampert's statements regarding the violation of the settlement agreement. He stated that any discharge into Cape Cod Bay by Holtec would violate Massachusetts law and U.S. law.

Dr. Cronin referred to a letter from June to the EPA regarding Holtec's plan to discharge the water and how it would violate the current permit. Should Holtec discharge any pollutants, it must seek permission. He concluded by requesting that the AGO seek an injunction.

## **ADJOURNMENT**

A motion to adjourn was made by Ms. Gatslick and seconded. The motion passed unanimously.

The meeting adjourned at about 9:30 pm.