

To: NDCAP

From: Mary and Jim Lampert

Subject: **Site Restoration and Environmental Requirements - Questions that Must Be Asked and Answered**

Date: September 17, 2020

The NDCAP's, principal and most important task this year is to ensure that there is a full and complete site assessment that complies with both the Settlement Agreement of June 16, 2020 and the laws and regulations of the Commonwealth.

If NDCAP is to perform its statutory task, we respectfully suggest that, at the September 21 NDCAP meeting, members of the Panel ask the representatives of Pilgrim Nuclear Power Station and as necessary to obtain complete and accurate responses, representatives of DEP and DPH the following questions.

These questions fall into three general categories – the scope of Pilgrim's site assessment, the extent to which Pilgrim has complied with the Settlement Agreement, and the role the Commonwealth will play to ensure that Holtec has done what the approved final work plan requires, not only during decommissioning but until all spent nuclear fuel has left the site.

We recognize that there may not be time for Pilgrim and the Commonwealth fully to answer these questions. Accordingly, we suggest that Pilgrim and the Commonwealth, and particularly their representatives on this Panel, provide NDCAP written answers in sufficient time before the next two NDCAP meetings to allow NDCAP and the public to consider them.

Background

The legislation that created NDCAP is clear. NDCAP's principal duties are:

(4) to serve as a conduit for public information and education on and to encourage community involvement in matters related to the decommissioning of the PNPS and to receive written reports and presentations on the decommissioning of the Station at its regular meeting;

* * *

(6) to receive reports regarding the decommissioning plans for the PNPS, including any site assessments and post-shutdown decommissioning assessment reports; provide a forum for receiving public comment on these plans and reports; and to provide comment on these plans and reports as the panel may consider appropriate to state agencies and the owner of the PNPS and in the annual report described in clause (3).

The June 16, 2020 Settlement Agreement between the Commonwealth, Holtec Pilgrim and Holtec Decommissioning International specifies in considerable detail the information that the Holtec entities must provide to DEP and DPH, and what DEP and DPH must do in response.

NDCAP cannot perform its statutory duties unless it receives complete and accurate information from Pilgrim's owners, and also from DPH and DEP. To ensure that NDCAP receives the information it needs, the enabling legislation fortunately required that the panel members include

two representatives of the Pilgrim Nuclear Power Station, a designee of the secretary of energy and environmental affairs (David Johnston of DEP) and a member from DPH's Radiological Control Program (John Priest). The Pilgrim representatives, Mr. Priest and Mr. Johnston are particularly knowledgeable about Pilgrim's decommissioning plans and the requirements imposed by the Settlement Agreement.

The questions that this Panel should ask Pilgrim's representatives should be directed at three principal subjects – the scope of Pilgrim's site assessment, compliance with the Settlement Agreement, and environmental monitoring - and should include the following, at minimum.

I. The Scope of the Site Assessment

The Commonwealth's and Pilgrim Watch's petitions to the NRC, and the earlier re-licensing proceedings (to which Pilgrim Watch was a party) specifically identified a significant number of likely contaminated sites at Pilgrim.

At the June 22, 2020 NDCAP meeting, Patrick O'Brien of CDI refused to say that Holtec would look at any of them.

The supposed site assessment planning has now been underway for several months. It is time for Pilgrim to tell this panel and the public exactly what Pilgrim will, and will not, look at.

- *Will Holtec's site assessment look at any of these known and likely areas of contamination described in Sections A-D below? If not, why not?*
- *What will any plan "approved" by DEP and DPH" require Holtec to investigate, and as necessary remediate?*
- *How will DEP and DPH ensure that Holtec does what the approved work plan requires? Will DEP and DPH do their own sampling? Do they have sufficient funds to do so?*

A. Contaminated Areas Identified in the Commonwealth Petition.

In a sworn declaration filed with the Commonwealth Petition, Mr. Priest, based on his personal knowledge of the Pilgrim site, identified the following contamination:

1. Soil in the vicinity of the condensate water storage tank.
2. Soil in the vicinity of the reactor truck lock.
3. Soil in the vicinity of the radioactive waste building.
4. Contamination resulting from releases into the environment associated with a former condenser tube refurbishment building east of the radioactive waste truck lock.
5. Contaminated soil from previous site remediation "stockpiled" on a small hill along the east protected area fence.
6. Soils and groundwater far from the small excavation made to repair the leaks that likely allowed reactor condensate to enter into the site soils for many years.

B. Contamination identified in the Pilgrim Watch Petition

1. Contamination resulting from leaks from the Condenser Bay Area.
2. Contamination resulting from leaks through seismic gaps.
3. Contamination resulting from a crack in the Torus Floor.

4. Drums of hazardous waste buried on the Pilgrim site, off the Access Road.

With respect to the latter, numerous sources have reported, and it is an open “secret” in Plymouth, that drums of hazardous waste were buried on the Pilgrim site. Barrels of chemical waste were reportedly shipped from New Jersey, buried along Power House Road (Pilgrim’s access road), and then over-planted with trees, many now dead, located we understand in what is known as the “donut hole.” This contamination was the subject of public comments to the NRC in 2007. These comments are reported in Pilgrim’s “Generic Environmental Impact Statement for License Renewal:”

“The public, NRC officials and Entergy staff also are well aware of burials off the Access Road.”

The NRC responded to this comment by saying that the comment was noted and would be kept on file to “ensure that these types of areas will be identified during plant decommissioning.” In October 2015, community members filed a formal “Chapter 21E”⁵⁷ report to MassDEP about these hazardous materials. The Chapter 21E report triggers regulations that requires the agency to investigate and report its findings to the public. MassDEP made no investigation.

C. Radioactive Contamination Identified During License Renewal

1. Condensate Tanks – 2 near reactor, facing bay - 275 gallons in each tank

The CST are the 2 large tanks facing the Bay (275 gallons each tank) close to the building above ground.

There is underground pipe between the plant and the tanks, that water is contaminated and if the tanks leaked there would be an environmental mess with the potential to leak into Cape Cod Bay.

2. Stand by gas treatment

Pipeline that runs from the Radwaste section of the plant to the out fall - the ocean. That line is used to discharge wastewater from the plant to the ocean.

3. Torus – crack in floor mat

D. Non-Radioactive Contamination Identified During License Renewal

Fuel Oil Underground Tanks and Pipes

There are at least 6 fuel oil tanks underground at PNPS - 2 for the heating boilers, 2 for the emergency diesel generators, and 2 for the station blackout diesel. They have leak detection built into them. However, they can and most likely will or have leaked.

Buried fuel tanks – fill pipe is where the truck can add fuel to the tank, that line runs from the top of the tank to the top of the ground, likewise the vent line. Underground

Fuel Pipes - the heating boilers for the plant burn # 2 fuel oil to heat the hot water that keeps the process buildings warm. The boilers use a forced feed for the fuel oil, that means the fuel oil is pumped from the underground tanks and the boiler uses what fuel oil it needs to maintain the heat called for by the system. The fuel oil not burned is returned to the underground tank. That fuel oil supply from the tank and the return line to the tank run underground.

All the other underground fuel oil tanks also have lines that send the fuel into the buildings - for the emergency diesels - the station blackout diesel and the line from the emergency diesels to the fire pump diesel in the screen house. Those are all underground.

There is a fill line outside the turbine building to pump turbine oil (used to lubricate the large turbine generator) into or out of the turbine lube oil tank located in the turbine basement. Those lines are underground.

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II. Settlement Agreement Between the Commonwealth of Massachusetts and Holtec Pilgrim LLC and Holtec Decommissioning International LLC Regarding PNPS

The Following Questions Focus on Compliance with the Agreement

1. Documents related to radiological and non-radiological contamination.

Section 10(a) of the Settlement Agreement requires that “Within sixty (60) days of the Effective Date, Holtec shall provide to DEP and DPH all documents referenced in section 10 of the Historical Site Assessment for Pilgrim dated December 8, 2018 (“HSA”) and any other document related to radiological and non-radiological contamination at the Site that it or Holtec International possesses or may come to possess through a request to Entergy within the sixty-day (60) period.

The 60-day period ended on August 15, 2020.

Q1: Has Holtec provided to DEP and DPH all documents referenced in section 10 of the Historical Site Assessment for Pilgrim dated December 8, 2018 (“HSA”).

Q2: Has Holtec provided to DEP and DPH any other document related to radiological and non-radiological contamination at the Site that it or Holtec International possesses? We note that this encompasses all documents that relate to potential contamination at any of the areas listed above. or may come to possess through a request to Entergy within the sixty-day (60) period that ended August 15, 2020. (Section 10 a)

Q3: When will copies of all these documents be provided to NDCAP and made public?

2. Licensed LSP.

Section 10(b) of the Settlement Agreement requires that “Within thirty (30) days of the Effective Date, Holtec shall provide notice to DEP and DPH that it is has retained a Massachusetts Licensed Site Professional (“LSP”), as that term is defined in 310 C.M.R. § 40.0006, along with the identity of the LSP.

The 30-day period ended on July 16, 2020.

Q1. Has Holtec provided notice to DEP and DPH that it is has retained a Massachusetts Licensed Site Professional (“LSP”), as that term is defined in 310 C.M.R. § 40.0006, along with the identity of the LSP by July 16, 2020, as required by Section 19(b) of the Settlement Agreement?

Q2. If so, when did it do so?

Q3. Who is the LSP?

3. Meet and Confer

Section 10(c) of the Settlement Agreement requires that “Within sixty days of the Effective Date, Holtec shall schedule a meeting with DEP and DPH to meet and confer about compliance with the terms of this Section III.”

The 60-day period ended on August 15, 2020.

Q1. When was such a meeting scheduled?

Q2. Has any such meeting(s) taken place? If so, when, who attended, and what the substance of the meeting(s)?

Q3. If not, when will it take place?

4. Submission of Initial Pilgrim Environmental Site Assessment Work Plan

Section 11 of the Settlement Agreement requires that “Within one hundred and twenty (120) days of the Effective Date, Holtec shall submit to DEP and DPH for their review and approval the Initial Pilgrim Environmental Site Assessment work plan prepared by the LSP retained in accordance with Paragraph 10(b).”

The 120-day period will end on October 14, 2020.

Q1. Has any such plan been submitted? If so, when?

Q2. Have there been any discussions between Pilgrim and either DEP or DPH about the substance of such a plan? If so, when, who was present at any such discussions, and what was their substance?

Q3. When will a copy of the Initial Pilgrim Environmental Site Assessment Work Plan be provided to NDCAP and made publicly available?

5. Contents of Initial Pilgrim Environmental Site Assessment Work Plan

Sections 11(a)-(l) of the Settlement Agreement require the Initial Pilgrim Environmental Work Plan to include, at a minimum:

- (a) An inventory of all structures, buildings, rooms, equipment, workspaces, land areas, and groundwater resources to be assessed, together with any proposed Operable Units. Consistent with the Atomic Energy Act, HDI shall delineate Operable Units in a manner that maximizes areas available for immediate site characterization, remediation, and release
- (b) A description of all proposed assessment activities to address data gaps identified by the LSP's review of the HSA
- (c) A proposed schedule of all proposed activities to be undertaken under the plan (including characterization, demolition, on-site management, regrading, and reseeding)
- (d) A proposed schedule for completion of site-wide environmental assessment activities for the Site
- (e) A proposed list of potential radiological and non-radiological contaminants for which sampling and testing will be conducted at the Site or, in the event Holtec designates Operable Units, each Operable Unit at the Site and the sampling and analysis protocols for the Site or each Operable Unit, if any
- (f) A proposed plan for testing and demonstrating compliance with the radiological cleanup standard set forth in Paragraph 10(d), which shall include a plan to submit confirmatory radiological surveillance and analytics to DPH and DEP with the Permanent Solution Statement required by Paragraph 10(e) above
- (g) A proposed plan to perform initial groundwater sampling of radiological and non-radiological contamination, including a plan for the installation of any additional monitoring wells necessary to characterize the scope and extent of radiological and non-radiological groundwater contamination; proposed sampling and independent analysis protocols, including the frequency with which sampling will occur, the contaminants to be tested, and the results of the independent laboratory analysis reported to DEP and DPH; protocols for quality assurance and split sampling with DEP and DPH; and proposed protocols in the event a radionuclide or hazardous material is identified

(h) A proposed plan to perform initial soil sampling of radiological and non-radiological contamination, including a plan for the location of surficial soil samples, soil borings and/or test pits necessary to characterize the scope and extent of radiological and non-radiological soil contamination; proposed sampling and independent analysis protocols, including the frequency with which sampling will occur, the contaminants to be tested, and the results of the independent laboratory analysis reported to DEP and DPH; protocols for quality assurance and split sampling with DEP and DPH; and proposed protocols in the event a radionuclide or hazardous material is identified

(i) A proposed plan to perform initial sampling of radiological and non-radiological contamination in environmental media other than soil and groundwater consistent with the recommendations contained in the HSA and the data gap review

(j) A proposed schedule for submitting a plan that complies with the MCP and the Massachusetts Solid Waste regulations for use of off-site materials proposed to be used as fill on Site, including a proposed plan to characterize off-site materials that includes, at a minimum, the following: a list of all non-radiological contaminants for which the off-site materials will be characterized and the specific sampling and analysis methods and processes that will be used to characterize the off-site materials

(k) A proposed schedule for submitting a detailed description of how concrete material will be processed, managed, and removed from the Site, including how concrete materials will be processed (removal of rebar and other reinforcing materials) and resulting size of specification of resulting aggregate material; and

(l) A description of a process to characterize each below grade structure and the steps that Holtec would need to take if removal of those structures is necessary for Partial Site Release or under the terms of this Agreement.

Q1. If such a plan has been submitted, did it include all the above in sufficient detail to satisfy DEP and DPH?

Q2. Whether or not such a plan has been submitted, have there been any discussions with DEP or DPH to discuss the terms of the work plan and a reasonable schedule for conducting the Initial Pilgrim Environmental Assessment. If so, what was the substance of each discussion?

Q3. Whether or not such a plan has been submitted, have there been any discussions with DEP or DPH about what should be included to meet the requirements of the Settlement Agreement? If so, what was the substance of each discussion with respect to each of requirements (a)-(l) listed above?

Q4. If such a plan has not been submitted, when will it be?

6. Radiological Standard

Section 10(d)(5) the Settlement Agreement says that to demonstrate compliance with Paragraph 10(d), radiological standard, Holtec must use MARSSIM “to determine the amount of residual radioactivity that remains in all pathways and ... the ‘resident farmer scenario’ and ‘basement inventory model’ to model the potential exposure to residual radioactivity in all pathways, provided, however, that the Parties may mutually agree to an alternative standard for modeling if an approved future reuse supports the use of such an alternative standard.”

Q1. Will Pilgrim agree to not using any alternative standard?

Q2. If not, what has been the substance of any discussions within or among any Holtec entities, or with either DEP or DPH, about use of an alternative; and describe the alternative? Who participated in the discussions, and when?

Q3. What has been the substance of any discussions within or among any Holtec entities, or with either DEP, DPH or any representatives of the Town of Plymouth about future reuse of the property, other than for unrestricted use? Who participated in them, and when?

We recognize these questions are extensive, but the NDCAP must know the answers to them if it is to accomplish its statutory duties, including “advis[ing] the governor, the general court, the agencies of the commonwealth, and the public on issues related to the decommissioning of the PNPS.”

III. DPH/DEP Monitoring and Sampling

In addition to our concern that Pilgrim has not provided, and likely will resist providing, answers to the above-questions, we are concerned that the Settlement Agreement seems not to address what Pilgrim must do, and how the Commonwealth is to ensure that, that there is effective monitoring not only during decommissioning but thorough out any period that any spent nuclear fuel or other high level waste remains at the Pilgrim site.

Holtec should give the Commonwealth access to the Pilgrim site during decommissioning and thereafter to the extent reasonably required for Commonwealth personnel to accompany NRC personnel during NRC inspections and to take and test its own samples and split samples. In other words, to test and verify.

Pilgrim Watch believes that for environmental monitoring to be effective Holtec should also agree to each of the following, and that the Commonwealth must verify that each is done. This Panel should ask Pilgrim whether it will agree to each of the following, and ascertain what the Commonwealth will do to ensure effective monitoring and sampling.

If there is any to which Pilgrim will not agree, or that the Commonwealth will not ensure, the Panel needs to be told the reason.

1. Holtec will provide sufficient monies, that include funding state laboratories, to cover the Massachusetts Department of Public Health (DPH) expenses for offsite and onsite radiological monitoring and testing until the spent fuel leaves the site.
2. Holtec must work cooperatively with MDPH and DEP to develop appropriate protocols related to radiological and non-radiological remediation and site restoration for information sharing, obtaining samples from onsite environmental media, conducting site visits and inspections, site characterization, remediation, site restoration, and notifications.
3. These protocols must be acceptable to MDPH and DEP, be made publicly available, and shall recognize that MDPH and DEP must approve all work plans and testing protocols prior to implementation and retain authority over all determinations of compliance related to non-radiological site characterization and remediation, nonradiological site closure, and site restoration.
4. Holtec must provide to MDPH & DEP copies of all decommissioning radiological surveys and radiochemical analysis data provided to the NRC or maintained on site as required by NRC regulations.
5. MDPH and DEP shall have the right to obtain confirmatory measurements and sampling throughout decommissioning and site restoration, provided that it does not interfere with the licensee's schedule.

Offsite Monitoring:

6. MDPH's real-time air monitoring stations must be maintained; environmental media sampling and testing must continue on a regular basis.
7. Holtec must agree to perform regular offsite radiological surveys and provide an annual report to the NRC and the Commonwealth with the location of the samples and findings. The report must be available to the public,

Onsite Monitoring:

8. The Commonwealth must maintain current monitoring well program, and the addition of additional monitors as required.
9. Holtec must agree to provide the State with split samples during decommissioning and split samples from the final status surveys that are intended to document that soil and structure remediation will allow the site to be released for unrestricted use at NRC license termination and conform to state <10 ml/rem/yr. and < 4 ml/rem/yr. in drinking water sources of water.

10. Holtec must agree to perform a new hydrological assessment required when structures on the site are removed and agrees to participation of relevant state agencies in reviewing the protocol and findings.
11. Holtec must agree to add additional monitoring wells as required by the Commonwealth to make assessment when the hydrology has changed due to the removal of onsite structures.
12. Holtec must agree to remediate or remove structural materials or soil containing detectable tritium, even if the level of tritium is less than required by the NRC for license termination, as was done at Yankee Rowe.
13. Holtec must agree to remediate or remove structural materials or soil containing detectable tritium, even if the level of tritium is less than required by the NRC for license termination, as was done at Yankee Rowe.
14. Holtec must perform biannual radiological monitoring of groundwater (including both previously impacted and down gradient monitoring wells) until the NRC has released the site for unrestricted use. A post-completion monitoring plan approved by NRC, MDPH, DEP will identify the sampling locations and analytical parameters specific to each location.
15. The NRC must provide the state with splits of any samples NRC has taken as part of its oversight program, and also provide MDPH with sampling locations and copies of its analysis of any and all samples taken from the site.

Spent Fuel-Dry Cask & Pad Monitoring

16. Holtec must agree to monitor in real-time each cask for heat, helium and radiation recognizing that the canisters and concrete outer packs are prone to cracking, exacerbated by salt corrosion. MDPH shall be linked to readings, as is the case with the current ring-monitors.

Rationale: Measuring for heat and helium will provide early warning so that overpacks can be ordered and located onsite. Monitors used, unlike TLDs, shall provide on-going measurements rather than providing an average figure, and shall not be limited to reading only to a maximum threshold, and will read both high and low let alpha and beta.

17. The pad for the casks is subject to corrosion. The Commonwealth must have the ability to inspect the pad shall receive reports documenting Holtec and NRC inspections.

Vermont has temperature and radiation monitors. The temperature monitors are read twice a day. The radiation monitors are read once a day.

Respectfully submitted

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September 17, 2020