

A MILLION GALLONS OF RADIOACTIVE WATER DUMPED IN OUR BAY

Holtec needs to “dispose of” more than a million gallons of Pilgrim’s radioactive contaminated water. On December 1, the NRC told Congressman Keating that “Holtec has informed the NRC that it plans to discharge liquid effluents sometime in the first quarter of 2022.” Since then, Holtec has backtracked and said it will not discharge any radioactively contaminated during 2022, but what then?

Holtec says it has three alternatives – dump the radioactive water in Cape Cod Bay where tides will bring the water into Plymouth/Kingston/Duxbury Bay, send it offsite to an existing licensed, radioactive waste dump, or evaporate the water first before shipping offsite. The NRC will allow Holtec to take the cheap route, dump it in our bay. There should be no doubt in anyone’s mind that Holtec will take that route. Holtec will not spend any money to ship the contaminated water offsite - unless it is forced to do so.

Holtec’s plan to dump radioactive water in our bays is not and cannot be kept a secret. Doing so will contaminate the water, and millions of oysters, lobsters, mussels, clams, and fish. Public perception could destroy a hundreds-of-millions-of-dollars aquaculture industry. Island Creek Oysters in Duxbury reported (May 2021) \$42.86 M annual revenue. It is only one of many farmers.

What can be done to prevent this? Seafood Industry, political and public pressure.

1. Get the press and the public involved.

NDCAP, the Nuclear Decommissioning Citizens Advisory Panel, meets the 4th Monday of every-other month. The next meeting will be at Plymouth Hall at 6:30 on January 24. Before that meeting, there will be a citizens’ Speak-Out starting at 5 pm at the same location, in the same room.

Get as many that oppose this dumping to come and speak at the 5 pm speak-out, and to stay around for, and try to make their voices heard, at the NDCAP meeting. Hopefully, there will be a large attendance, and a lot of press.

2. The NRC has (but rarely follows) a fundamental regulation (10 CFR 20.1101(b) that requires Pilgrim to “use ... procedures ... to achieve ... doses to the public that are as low as reasonably achievable (ALARA). It defines ALARA as “making every reasonable effort to maintain exposures to ionizing radiation as far below the dose limits as possible.”

There is an extremely straightforward way to achieve ALARA here – send the radioactive water to an existing licensed radioactive waste dump rather than dumping it into our bay.

Write Senator Markey and Congressmen Keating, and Governor Baker, telling them what Holtec proposes to do and the effect on both the aquaculture industry and the public, and ask them to pressure the NRC and Holtec to follow NRC's own fundamental regulation.

3. Massachusetts state law (MGL Ch. 21E,) and DOE regulation 310 CMR 40.006 define "hazardous materials" to include radioactive materials.

Ch. 21E says that Holtec is "liable, without regard to fault" to both the Commonwealth and to any person damaged by a radioactive release (Sec 5), that both the Commonwealth and affected people can sue Holtec (Sec. 11A), and that ten or more residents of any "municipality potentially affected" can force the state department of environmental protection (DEP) to meet with them and respond to their concerns. (Sec. 14).

Massachusetts state law (Ch 270, Sec. 16) makes it a crime to discharge waste or other materials of any kind in or upon coastal or inland waters.

In the Settlement Agreement, Holtec agreed to "comply with all applicable environmental and human-health based standards and regulations of the Commonwealth.

NRC NUREG 1736 3.20.207 says that "Nothing in this subpart relieves the licensee from complying with other applicable Federal, State and local regulations governing other toxic or hazardous properties of material that may be disposed of...." (Underline added)

DEP regulations could easily be amended to make explicit that dumping of radioactive water into Massachusetts coastal water is prohibited.

Write the Governor, your state senators and representatives and the Massachusetts Attorney General, make sure they understand the economic and health effects of Holtec's planned dumping and the need for action – both legislative and regulatory.

4. Get your Town to establish a regulation prohibiting the discharge of any radioactive water into Plymouth, Kingston, or Duxbury Ba, all of which flow into Cape Cod Bay.

Plymouth is key. Pilgrim is located there, and the dumping will be there. Plymouth must enforce its Board of Health regulation that flatly prohibits "Placing, **dumping**, burying, burning, **or disposing of any** trash, bottles or cans, refuse, rubbish, garbage, debris, scraps, demolition or construction materials of any kind, **hazardous waste**, all wastes of any other material of any kind from any residential, commercial, industrial or municipal use is prohibited **on any land or in any waters within the Town of Plymouth.**

All other towns that abut any of the bay need to make sure that they have the needed regulations, and to enforce them

5. Get ten residents of your town to petition the DEP to meet with you publicly, listen to your concerns, and develop a public plan to respond to the dumping threat.
6. Consider suing in either state or federal court to enjoin the dumping.

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Appendices

I. NRC DOCUMENTS

10 CFR

20.1003 - ALARA is an acronym for "as low as (is) reasonably achievable," which means making every reasonable effort to maintain exposures to ionizing radiation as far below the dose limits as practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

20.1101(b) The licensee shall use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).

NUREG/CR -2907, Vol. 24

1.2 Scope - The NRC uses the information on radioactive releases, along with other information collected during routine inspections of each facility, to ensure NPPs are operated safely within regulatory requirements. One of those requirements includes maintaining radiation doses from radioactive effluents "as low as is reasonably achievable" (ALARA).

NUREG – 1736:

3.20.2007 COMPLIANCE WITH ENVIRONMENTAL AND HEALTH PROTECTION REGULATIONS Statement of Requirement: Nothing in this subpart relieves the licensee from complying with other applicable Federal, State, and local regulations governing any other toxic or hazardous properties of materials that may be disposed of under this subpart.

Comment: The NRC could easily resolve this issue simply by enforcing 10 CFR 20.1101(b) and prohibiting Holtec's planned dumping. NUREG/CR-2907 admits that "maintaining radiation doses from radioactive effluents 'as low as is reasonably achievable' (ALA)," is an NRC requirement.

NUREG – 1736 is somewhat ambiguous. What are "other toxic or hazardous properties of materials that may be disposed of under" this part of 10 CFR 20?

II. MASSACHUSETTS LAWS AND REGULATIONS

Settlement Agreement:

10 (I) Holtec shall comply with all applicable environmental and human-health based standards and regulations of the Commonwealth.

16. Nothing in this Agreement shall release any person from the obligation to investigate and remediate new, undiscovered, or undisclosed releases of radiological contamination or non-radiological oil or hazardous materials in accordance with federal or Massachusetts statutes and regulations.

Comment: The Massachusetts Attorney General must hold Holtec to its agreement, which is not limited to current regulations.

MGL Ch 21E – Massachusetts Oil and Hazardous Material Release Prevention and Response Act

Comment: This is the most important Massachusetts law directed to hazardous (e.g., radioactive) waste. It says, among other things, that Pilgrim's owner and operator are liable for any damage caused by the proposed dumping, that either the commonwealth or individuals may sue to recover for damage to them, and requires DEP to respond to a citizens' petition.

Sec. 2 – Definitions

"Department" – the department of environmental protection.

"Hazardous material", material including but not limited to, any material, in whatever form, which, because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment, when improperly stored, treated, transported, disposed of, used, or otherwise managed. The term shall not include oil. The term shall also include all those substances which are included under 42 USC Sec. 9601(14), but it is not limited to those substances.

"Release", excludes: release of source, by product, or special nuclear material from a nuclear incident, as those terms are defined in 42 USC Sec. 2014, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under 42 USC Sec. 2210....

One open question is the extent to which, if any, this limitation in the definition of "release" may apply. The relevant federal law is the Price-Anderson Act. It generally deals with

indemnifying licensees such as Pilgrim if the damage caused by a “nuclear incident” exceeds the plant’s own insurance.

Section 5: Persons liable –

- (a) Except as otherwise provided in this section, (1) the owner or operator of a ... a site from or at which there is or has been a release or threat of release of oil or hazardous material **shall be liable, without regard to fault**, (i) to the commonwealth for all costs of assessment, containment and removal incurred pursuant to sections three A, four, five A, five B, and eight to fourteen, inclusive relative to such release or threat of release, (ii) to the commonwealth for all damages for injury to and for destruction or loss of natural resources, including the costs of assessing and evaluating such injury, destruction or loss, incurred or suffered as a result of such release or threat of release, (iii) to any person for damage to his real or personal property incurred or suffered as a result of such release or threat of release, and (iv) to any person for any liability that another person is relieved of pursuant to the fourth paragraph of section four. Except as provided in paragraphs (b) and (k), such liability shall be joint and several.

Section 6: Department requirements for prevention and control of releases; restrictions on property; notice; liability

The department may specify reasonable requirements, applicable to sites and vessels where releases of hazardous material or oil might occur and to activities which might cause, contribute to, or exacerbate a release of hazardous material or oil, to prevent and control, and to counter the effects of, such releases.

Section 9 – Orders to conduct assessment, containment or removal.

Whenever in the opinion of the department a release or threat of release poses a significant danger to the public health, safety, welfare, or the environment, the department may issue to any person described in paragraph (a) of section five an order requiring such person to conduct such containment and removal actions, consistent with the Massachusetts Contingency Plan, as the department reasonably deems necessary.

Section 11: Violations; penalties, actions to recover costs

Any violation of this chapter, or of any regulation adopted or order issued thereunder, shall be presumed to constitute irreparable harm to the public health, safety, welfare or the environment. Such presumption may be rebutted by a preponderance of evidence.

Section 11A: Civil actions

Notwithstanding any other general or special law to the contrary, civil actions pursuant to this chapter shall be brought in accordance with the following deadlines:

(1) Actions brought by the attorney general pursuant to sections five or ten or both to recover response costs incurred by the commonwealth ... shall be commenced within five years from the date the commonwealth incurs all such costs or five years from the date the commonwealth discovers that the person against whom the action is being brought is a person liable pursuant to this chapter for the release or threat of release on account of which the commonwealth has incurred such costs, whichever is later.

(2) brought by persons other than the commonwealth pursuant to sections four or four A to Actions recover reimbursement, contribution or equitable share shall be commenced within three years after the date the person seeking such recovery discovers or reasonably should have discovered that the person against whom the action is being brought is a person liable pursuant to the provisions of this chapter for the release or threat of release for which such costs or liability were incurred, or within three years of the time when the person bringing the action first learns of a material violation of an agreement entered into pursuant to section four A, or within three years after the person bringing the action incurs all response costs, or within three years after payment by the person seeking contribution, reimbursement, or an equitable share for liability pursuant to the provisions of this chapter, or within three years after sending notice pursuant to the first paragraph of section four A, whichever is later.

Section 14: Response actions at sites; meetings; public notice and participation

(a) Upon written petition of ten or more residents of a municipality in which a site is located, or of a municipality potentially affected by a site, the department shall hold a public meeting at a time and location convenient to the affected public, and at such meeting shall present a proposed plan for involving the public in decisions regarding response actions at the site. The department shall inform residents of potentially affected communities of the meeting by causing notice thereof to be published in newspapers that circulate in said communities and by concurrently submitting to said newspapers a press release with the same information. The department shall design the proposed plan to ensure the following: that interested members of the public will have sufficient notice, access to documents and opportunity to comment to enable them to affect decisions regarding response actions at the site; that all public meetings or hearings will be held at locations and times convenient to the affected public; and that public documents regarding the site will be available at locations and at times convenient to the affected public. Following the meeting on the proposed plan, the department shall revise the plan to reflect comments it receives and make it available to the public. The department may, by regulation or order or both, require persons who carry out response actions to carry out the requirements of this section. Nothing in this section shall preclude the department from developing a public participation plan or

conducting public meetings or hearings in the absence of a petition, or from requiring persons who carry out response actions to do so.

(b) Subject to appropriation, the department may provide for limited grants to be given to any group of individuals who may be affected by oil or hazardous materials from any site, or to any city or town or agency thereof that might be affected by oil or hazardous materials from any site, or to any district or other body politic that owns or operates a public water supply system that might be affected by oil or hazardous materials from any site. Any recipient of such a grant shall use it to obtain advice and technical assistance on matters relating to handling of sites pursuant to this chapter. The department shall have in effect at all times regulations, which the department may amend or revise from time to time, specifying terms and conditions of eligibility for and use of such grant.

(c) The chief municipal officer of a city or town in which a site is located may appoint from members of the potentially affected public an individual or individuals, to inspect the site on behalf of the community. Such individual or individuals shall be given reasonable opportunities by the department and the site owner or operator, or a fiduciary or secured lender, who has ownership or possession of the site, to inspect such site prior to, during and after the implementation of major response actions, and may bring with them on such inspections experts on oil or hazardous materials releases or responses.

Section 15: Citizen enforcement

In any suit by Massachusetts residents to enforce the requirements of this chapter, or to abate a hazard related to oil or hazardous materials in the environment, the court may award costs, including reasonable attorney and expert witness fees, to any party other than the commonwealth who advances the purposes of this chapter.

MGL Ch 270 – Crimes Against Public Health

Section 16: Disposal of rubbish, etc. on or near highways and coastal or inland waters; penalties; enforcement; park rangers

Whoever places, throws, deposits or discharges or whoever causes to be placed, thrown, deposited or discharged, trash, bottles or cans, refuse, rubbish, garbage, debris, scrap, waste or other material of any kind on a public highway or within 20 yards of a public highway, or on any other public land, or in or upon coastal or inland waters, as defined in section 1 of chapter 131, or within 20 yards of such waters, or on property of another, or on lands dedicated for open space purposes, including lands subject to conservation restrictions and agricultural preservation restrictions as defined in chapter 184, shall be punished by a fine of not more than \$5,500 for the first offense and a fine not to exceed \$15,000 for each subsequent offense; provided, however, that 50 per

cent of the fine imposed shall be deposited in the conservation trust established in section 1 of chapter 132A and the court may also require that the violator remove, at his own expense, the trash, refuse, rubbish, debris or materials.

MGL Ch 131 – Inland Fisheries and Game and other Natural Resources.

Comment: This garden-variety statute is not directed specifically at radioactive waste, but it clearly covers it. The statute says that discharging waste of any kind “in or upon coastal or inland waters” or “within 20 yards of such waters,” is a crime.

Section 1 – Definitions; Rules of Construction

“Coastal waters”, all waters of the commonwealth within the rise and fall of the tide and the marine limits of the jurisdiction of the commonwealth, but not waters within or above any fishway or dam nor waters above any jurisdictional boundary legally established pursuant to section five of chapter one hundred and thirty of the General Laws in rivers and streams flowing into the sea.

Comment: This section defines “coastal waters of the commonwealth.” One obvious question is whether a Town’s jurisdiction over the waters abutting it similarly includes “all waters ... within the rise and fall of the tide and the marine limits”

105 CMR 120 – The Control of Radiation

Comment: This is one of a number of regulations that could easily be amended to cover what Holtec intends to do, but that may not as they are currently written. This regulation at least recognizes ALARA.

120.002:

Purpose and Scope Except as otherwise specifically provided, 105 CMR 120.000 apply to all persons who receive, possess, use, transfer, own, or acquire any source of radiation; provided, however, that nothing in 105 CMR 120.000 shall apply to any person to the extent such person is subject to regulation by the U.S. Nuclear Regulatory Commission (NRC). Regulation by the Commonwealth of source material, byproduct material, and special nuclear material in quantities not sufficient to form a critical mass is subject to the provisions of the agreement between the State and the NRC and to 10 CFR Part 150 of the NRC's regulations.

120.005

As Low as is Reasonably Achievable (ALARA) means making every reasonable effort to maintain exposures to radiation as far below the dose limits in 105 CMR 120.000 as is practical, consistent with the purpose for which the licensed or registered activity is

undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of ionizing radiation and licensed or registered sources of radiation in the public interest.

310 CMR 30.000 – Hazardous Waste

Comment: Another DEP regulation that could easily be amended to much better “protect public health, safety, and welfare, and the environment.” Nothing requires it to exclude source, special or by-product material.”

30.002: Purpose - 310 CMR 30.000 is intended to protect public health, safety, and welfare, and the environment, by comprehensively regulating the generation, storage, collection, transport, treatment, disposal, use, reuse, and recycling of hazardous waste in Massachusetts.

30.010 Hazardous Waste means a waste, or combination of wastes, which because of its quantity, concentration, or physical, chemical or infectious characteristics may cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness or pose a substantial present or potential hazard to human health, safety, or welfare or to the environment when improperly treated, stored, transported, used or disposed of, or otherwise managed. See 310 CMR 30.104 for possible exemptions. Hazardous waste includes the hazardous waste component(s) of mixed waste. See 310 CMR 30.010: Mixed Waste

30.104: Wastes Subject to Exemption from 310 CMR 30.000

(1) Wastes Based Upon Exclusions from the Definition of Hazardous Waste Pursuant to M.G.L. c. 21C... **Comment:** the Ch 21C definition says that "Hazardous waste" does not include “Source, special nuclear or by-product material as defined by the Atomic Energy Act of 1954, as amended, 43 U.S.C. § 2011 *et seq.*”

310 CMR 40.000 – Massachusetts Contingency Plan.

Comment: Unlike the two previous DEP regulations, but consistent with MGL Ch 21, this regulation’s definition of hazardous materials includes radioactive material, but does not exclude materials that are also subject to NRC regulation.

40.0006 - Hazardous Material means material, including, but not limited to, any material in whatever form which, because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential

threat to human health, safety, welfare, or to the environment, when improperly stored, treated, transported, disposed of, used, or otherwise managed. The term shall not include oil, but shall include waste oil and all those substances which are included under 42 U.S.C. § 9601(14), but it is not limited to those substances. The term shall also include, but is not limited to, material regulated as hazardous waste or recyclable material under 310 CMR 30.000: *Hazardous Waste*.

40.0301 –

(1) The purpose of 310 CMR 40.0300 is to identify oil and hazardous material which are subject to the provisions of this Contingency Plan, to identify those releases and threats of release of such oil and hazardous material that require notification to the Department, to set forth the time periods and procedures for notification, and to set forth provisions to allow limited removal of such oil and hazardous material under certain circumstances.

(2) Nothing in 310 CMR 40.0300 shall relieve any person described in M.G.L. c. 21E, § 5(a)(1) through (5) from any liability which that person would otherwise possess in connection with a release or threat of release of any oil or hazardous material that is listed at 310 CMR 40.1600, identified by characteristic in 310 CMR 40.0347 or otherwise meets either the definition of oil or the definition of hazardous material, which are set forth in 310 CMR 40.0006.

40.0401 - The purpose of 310 CMR 40.0400 is to describe the nature and extent of Preliminary Response Actions that are undertaken at a site or vessel following a release or the discovery of a release or a threat of release of oil and/or hazardous material, and to prescribe standards and procedures for conducting Immediate Response Actions, Release Abatement Measures, and Utility-related Abatement Measures, whether they are conducted as part of a Preliminary Response Action or at any other time.

40.0403(3) Preliminary Response Actions, as described in 310 CMR 40.0405, shall be conducted within the one year period following the earliest date specified in 310 CMR 40.0404(3).

III. Local Regulations

Duxbury Board of Health

3.03 PROHIBITED DISPOSAL

(a) Placing, dumping, burying, burning, or disposing of any trash, bottles or cans, refuse, rubbish, garbage, debris, scraps, demolition or construction materials of any kind, hazardous waste, all wastes of any other material of any kind from any residential, commercial, industrial

or municipal use is prohibited on any land or in any waters within the Town of Duxbury, unless specifically permitted under Section 3.04 of these regulations. No property owner shall permit such placing, dumping, burying, or disposing on his/her land. The property owner shall be responsible for the removal of any materials that are in violation of Chapter 111, 150A of these regulations. All materials noted above shall be disposed of at a facility approved by the Department of Environmental Protection and holding a valid operating permit issued by the Department of Environmental Protection under Chapter 111, 150A.

(b) LOW-LEVEL RADIOACTIVE WASTE

(1) Acceptance of any low-level radioactive waste, deregulated or otherwise, at any landfill, transfer station or other waste site or facility within the boundaries of the Town of Duxbury is prohibited.

(2) Disposal of any low-level radioactive waste, deregulated or otherwise, at any landfill, transfer station, waste site or elsewhere within the boundaries of the Town of Duxbury is prohibited.

(3) As used in this regulation, the term “low-level radioactive waste” means any radioactive material that (i) is by-product material, as defined in the United States Code, Title 42, Section 1024(e) (l), (ii) the United States Nuclear Regulatory Commission classifies as low-level radioactive waste, or (iii) the United States Nuclear Regulatory Commission classified as low-level radioactive waste as of January 1, 1989, whether or not such material was thereafter classified as below regulatory concern or declared exempt from regulatory control by the United States Nuclear Regulatory Commission, the United States Environmental Protection Agency, the United States Department of Energy, or any other agency of the United States Government. The term “low-level radioactive waste” does not include waste which remains a federal responsibility, as designated in section 3(b) of the Low-Level Radioactive Waste Policy Act, as in effect as of the effective date of this regulation or as amended, 42 U.S.C. Section 2021(c)

Plymouth Board of Health

PROHIBITED DISPOSAL REGULATIONS Purpose: These rules and regulations are intended to protect the public health, safety, and the environment in the Town of Plymouth by regulating the disposal of solid waste, as defined in 310 CMR 18.00 21.00 of the State Environmental Code, and to ensure compliance with the provisions of C 111, sec 150A of the Commonwealth of Massachusetts; the Rules and Regulations stated in 310 CMR 18.0 21.00 of the State Environmental Code; 527 CMR 34.0 of the Board of Fire Prevention Regulations; and the zoning bylaws of the Town of Plymouth. Authority These regulations are adopted by the Plymouth Board of Health as authorized by Massachusetts General Law, Chapter 111, Section 31.

These regulations supersede all previous regulations adopted by the Board of Health pursuant to disposal of solid waste, except low level radioactive waste regulation adopted on April 11, 1999, and incorporated in these regulations.

Prohibited Disposal: (a) Placing, dumping, burying, burning, or disposing of any trash, bottles or cans, refuse, rubbish, garbage, debris, scraps, demolition or construction materials of any kind, hazardous waste, all wastes of any other material of any kind from any residential, commercial, industrial or municipal use is prohibited on any land or in any waters within the Town of Plymouth.