

Holtec Decommissioning International, LLC Comments on Tentative Determination to Deny a Modification to the Massachusetts Permit to Discharge Pollutants to Surface Waters for Pilgrim Nuclear Power Station, NPDES MA0003557 (August 31, 2023)

Holtec Decommissioning International, LLC (“Holtec”) submits these public comments in response to the July 24, 2023 Public Notice issued by the Massachusetts Department of Environmental Protection (“MassDEP”) of the issuance of a Tentative Determination to Deny a Surface Water Discharge permit modification requested by Holtec (“Tentative Determination”). Throughout the permitting and operating history of Pilgrim Nuclear Power Station (“Pilgrim”), industrial wastes have been discharged from Pilgrim into Cape Cod Bay, including treated water containing radiological wastes and other effluents from various parts of the plant. For the first time, the National Pollutant Discharge Elimination System (“NPDES”) Permit No. MA0003557 issued in 2020 expressly provided that “[t]he discharge of pollutants in spent fuel pool water (including, but not limited to, boron) is not authorized by this permit.” (NPDES Permit § I.B.2), although discharges of industrial wastes were permitted from other sources. Holtec initially believed that a permit modification would not be needed to discharge treated water from the radwaste effluent outfall, because discharges from that point had never been regulated by MassDEP and the U.S. Environmental Protection Administration (“EPA”) before. As EPA explained, “should Holtec wish to discharge any such water, it should first provide EPA with a full characterization of pollutants present in such water to determine whether Clean Water Act requirements apply. . . .” (Letter from EPA to Holtec (Feb. 17, 2022)).

Holtec met with MassDEP and EPA, in good faith, several times over the following months to discuss what Holtec would need to demonstrate to allow such discharges. On May 18, 2022, Holtec made a presentation to MassDEP and EPA on the basic water quality of the source water. MassDEP and EPA advised that this information was not sufficient to make any

regulatory decisions, and they would not authorize a discharge without a detailed pollutant characterization and further analysis. On October 17, 2022, Holtec met with MassDEP and EPA at EPA Region 1 Headquarters in Boston to further discuss source water characterization and treatment processes. MassDEP and EPA advised that a more complete characterization would be required, including a more accurate analysis of low-level pollutants, to make a regulatory decision. Also, MassDEP and EPA insisted that any level of Clean Water Act pollutants in the source water would require a NPDES permit modification to discharge. It was informally agreed to at this meeting that Holtec would pursue a permit modification to authorize the discharge. On February 15, 2023, Holtec made a presentation to MassDEP and EPA on the sampling and analytical procedures to support the modification submittal. In addition to the parameters in the proposed application, Mass DEP and EPA advised that “new source” effluent limitation guidelines (“ELG”) for an electric steam generator (40 CFR 423.15) were appropriate for the source water and effluent characterization to support the application. MassDEP also requested that PFAS be added to the analytical sampling suite to support the application. At no time did MassDEP ever suggest any objection that the Ocean Sanctuaries Act could prevent the modification. On April 4, 2023, Holtec applied to modify its Surface Water Discharge Permit to permit discharges from the existing radwaste effluent outfall (newly designated in the modification as Outfall #015) as a “new source” of industrial wastewater, exclusively for the purpose of characterizing extremely low levels of non-radiological pollutants and demonstrating that these pollutant levels were consistent with historic operational effluents from the same sources.

The Tentative Determination concludes that the Ocean Sanctuaries Act prohibits the proposed discharge and requires denial of the permit modification. This was based on a

misreading of the Ocean Sanctuaries Act resulting in two erroneous factual conclusions: (1) that the discharge of spent fuel pool water that continued to be used in the decommissioning process is not “associated with the generation . . . of electrical power,” and (2) that the discharge of the treated radwaste effluent is not an “existing discharge” as defined by the Ocean Sanctuaries Act. (Tentative Determination at p. 2). Attached to the Public Notice is a July 21, 2023 correspondence from MassDEP to the Office of Coastal Zone Management (“CZM”) presenting the same errors for CZM’s consideration (“MassDEP Letter”). As a result, CZM’s conclusions in its July 24, 2023 letter are also in error (“CZM Letter”).

The MassDEP letter misreads the exception for “all other activities, uses and facilities associated with the generation . . . of electrical power” in Section 16 of the Ocean Sanctuaries Act as being limited to “the planning, construction, reconstruction, operation and maintenance” during the pre-operating and operating phases and excluding decommissioning. (MassDEP Letter at p. 5). The exception for generation “activities, uses or facilities” contains two separate clauses. The first is a specific authorization for “the planning, construction, reconstruction, operation and maintenance of industrial liquid coolant discharge and intake systems” The second is a catch all provision that covers “all other activities, uses and facilities associated with the generation, transmission, and distribution of electrical power” that have been permitted by federal and state agencies. G.L. c. 132A, § 16.

MassDEP and CZM must consider the historical development of the statute to understand why the two clauses are separate and why the first clause does not modify the second. The version of the exception that existed immediately prior to its existing form provided an exception only for “the construction, operation and maintenance of industrial liquid coolant discharge and intake systems in conjunction with the public and private supply of electrical power as allowed

and licensed by the division of water pollution control.” St. 1974, c. 822, § 1. That is, the exception was limited to a specific activity, use, and facility: coolant discharge. In 1977, the Legislature amended the exception, as it is in its current form, specifically adding the distinctly separate catch all exception in terms that are necessarily broad and not limited to commercial generation of electricity, because it includes “*and all other* activities, uses and facilities *associated with*” generation. St. 1977, c. 897, § 1 (emphasis added). Nothing in the second clause suggests that it is limited to the commercial operation of the plant.

Indeed, a ruling that the provision excludes decommissioning activities would be entirely inconsistent with the current NPDES permit, which MassDEP approved in 2020, long after Pilgrim ceased generation of electricity, and which permits the discharge of industrial wastes from other outfalls into the Cape Cod Bay Ocean Sanctuary. Further, the Administrative Order on Consent (“AOC”) of the 2020 NPDES permit (executed on November 23, 2020) was developed to manage and discharge industrial wastewater strictly associated with decommissioning activities post shutdown. The 2020 NPDES permit discharge conditions amended under the AOC (now expired) are reflective of waters that are “distinct from prior uses” (MassDEP Letter at pg. 3) due to reduced flow rate such that “increased pollutant concentrations,” (MassDEP Letter at pg. 3) notably for total residual oxidants and temperature, could potentially be present in the waters discharged from Pilgrim during the effective period of the AOC.

The decommissioning of a nuclear power plant is inextricably “associated with” the plant’s generation of electrical power. A nuclear power plant cannot be licensed to operate without the plant ultimately being decommissioned. Indeed, owners of every nuclear power station are required to maintain sufficient funding throughout each facility’s respective lifecycle

from commercial operation through completion of decommissioning 10 C.F.R. §§ 50.75(b), (f); 50.82(a)(6), (a)(8)(v); 50.54(bb). The purpose of NRC regulations governing decommissioning of commercial reactors is to reduce on-site radioactivity that was generated during power operations. As NRC’s decommissioning Generic Environmental Impact Statement (“GEIS”) states, “[g]enerally, the major environmental impact from decommissioning, especially for power reactors, occurs when the decision is made to operate the reactor.” (U.S. NRC, NUREG-0586, Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, at x (Aug. 1988)). Pilgrim is still subject to its NRC operating license and the provisions of 10 C.F.R. Part 50 governing operating reactors and cannot terminate its NRC operating license until the facility is fully decommissioned—including the spent fuel pool. *See* 10 C.F.R. §§ 50.51(b); 50.82(a)(9). As MassDEP and EPA recognized in the 2020 permit, cessation of power sales did not eliminate the need for ongoing discharges to support the continued operation, maintenance, and decommissioning of the Pilgrim power reactor.¹ MassDEP’s conclusion that the removal of plant equipment and materials used to produce electricity for nearly fifty years is not “associated with the generation . . . of electrical power”—just because those activities are occurring after the facility has stopped generating power—is simply incorrect.

Further, the record does not support the conclusion that the pollutants in the treated radwaste effluent were “produced as a function of decommissioning activities.” The testing of the samples can only provide the characterization of the pollutants contained in the water before

¹ *See, e.g.*, NPDES Permit, Response to Comments, p. 32 (“According to Entergy, the circulating water is primarily used for dilution to meet the NRC’s requirements for the liquid radiological waste disposal system and for fire protection purposes, as well as for backflushing the circulating water pump lines to manage biofouling. While PNPS has ceased generating electricity, it is not certain at this point how long post-shutdown activities that require use of the circulating pumps will last. For this reason, the Final Permit does not include a date certain upon which the use of the circulating water pumps must cease.”)

and after treatment, not before the decommissioning process began.² They do not demonstrate that new pollutants were added. The Tentative Decision ignores the fact that during the commercial operation of the plant, the water in the spent fuel pool was frequently commingled with water in the reactor cavity and dryer separator pit. The volume of water in the spent fuel pool that accumulated during commercial operations has not significantly changed. That is, water currently in the spent fuel pool includes water that, before decommissioning began, was previously in contact with plant components and surfaces such as the reactor vessel internal components. These components were, at times temporarily removed, modified, or replaced underwater during operational and refueling periods, using similar tooling and techniques to those currently being utilized for their ultimate removal and segmentation for disposal. The use of the water during the plant’s operational period—radiation shielding—was the same as it is in the decommissioning process. The activities and use of the water in the decommissioning process are not distinctly “decommissioning activities.” As NRC’s decommissioning GEIS states, “[r]eview of the activities that occur during decommissioning showed that they are similar to the activities that occur during the construction, operation, maintenance, and refueling outages of a power reactor (e.g., decontamination, steam generator replacement, and pipe removal).” (NUREG-0586 Supp. 1, p. 2-1 (Nov. 2002)). Therefore, the activities and processes in place (including continuous local filtration) result in water quality level consistent with all phases of the plant’s lifecycle. The proposed effluent discharge from the existing radwaste effluent outfall,

² The water in the torus is essentially unaffected by decommissioning activities as no work was performed within the torus volume. A single batch of water containing nitrates/chlorides was the only known or suspected introduction of water containing contaminants into the torus since the end of plant operation in May 2019.

now designated as Outfall #015, will undergo the same general treatment process that was applied to radwaste effluent while Pilgrim was in commercial operation.³

The Tentative Decision incorrectly concludes that because the current NPDES permit prohibits discharge of pollutants from the spent fuel pool, torus, reactor cavity, and dryer separator pit, “the proposed discharge is not the continuation of an existing discharge” and the exception for an “existing discharge” under Section 16 does not apply. (Tentative Decision at 2). An “existing discharge” is defined as “a municipal, commercial or industrial discharge at the volume and locations authorized by the appropriate federal and state agencies . . . on December eighth, nineteen hundred and seventy-one, in the case of the Cape Cod Bay . . . Sanctuary.” It is irrelevant that in modifying the NPDES permit, the proposed discharge was designated as a “new source” *for the purpose of permitting* under the Federal Clean Water Act, 33 U.S.C. §§ 1251 *et seq.*, and the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53. Those statutory schemes are entirely separate and cannot be used to construe the applicability of the Ocean Sanctuaries Act. What is relevant for the purpose of determining whether the Ocean Sanctuaries Act applies is what discharge was permitted on December 8, 1971. G.L. c. 132A, §§ 12, 16.

What is missing from the MassDEP Letter’s representation to CZM that “Holtec did not provide any authorization for any discharge of pollutants related to plant operations prior to 1975” (MassDEP Letter a p. 7) is that MassDEP did not even ask Holtec to provide such documentation nor did Holtec provide any historical permitting as it is not required during the modification process unless requested. MassDEP never mentioned that it believed that the Ocean Sanctuaries Act might apply. Further, had MassDEP checked its own records, it would

³ During early years of Pilgrim’s commercial operation, large volumes were discharged through the same radwaste discharge point. The treatment process was modified over the decades of plant operation to leverage improved treatment technology. As a result, this discharge was significantly reduced in volume and significantly increased in water quality over the years.

have had to disclose to CZM that, on January 8, 1969, the Division of Water Pollution Control issued a permit pursuant to G.L. c. 21, § 43 “for the discharge of industrial wastes from Pilgrim Station into Cape Cod Bay.” This permit was in effect on December 8, 1971. The only conditions were that radiological and ecological studies of the receiving waters would be conducted and modifications to the equipment or operations of the effluent discharge would be made if necessary, that the operator would develop a method for the operation and control of the use of chlorine in the circulation cooling water system, and that the operator would maintain and make available to the Division operating records that it considered necessary “pertaining to the treatment of liquid wastes including levels of radioactivity and to the discharge of effluents to Cape Cod Bay.”

Notably, the 1969 permit did not set any limitations on the quantities or concentrations of pollutants in the discharges. In 1969, effluent limits were not required. At the time, G.L. c. 21, § 43 provided, in relevant part, only that:

No person shall make or permit a new outlet for the discharge of sewage or industrial waste or wastes, or the effluent therefrom, into any of the waters of the commonwealth nor shall he construct or operate a new disposal system for the discharge of sewage or industrial or other wastes or the effluent therefrom into the waters, of the commonwealth without first obtaining a permit, which the director is hereby authorized to issue subject to such conditions as he may deem necessary to insure compliance with the standards established for the waters affected.

St. 1966, c. 685, § 1. At the time, Section 27 of Chapter 21 also did not require the Division of Water Pollution Control to establish effluent limits, but only required it to adopt water quality standards. *Id.* Surface water discharge permits were not required to establish effluent limits until 1973. St. 1973, c. 546, § 9. The regulatory scheme at the time also did not regulate specific outfalls, and thus the 1969 permit broadly authorized the discharge of any industrial wastes

“from Pilgrim Station into Cape Cod Bay.” Because the 1969 permit set no limits on specific pollutants, MassDEP’s observations that the authorized discharges “would not be the same as those proposed” and that “the proposed discharges contain pollutants resulting from decommissioning” are misplaced. (MassDEP Letter at p. 7). The authorized discharge—“industrial waste”—did not differentiate based on the constituent pollutants.

Because the discharge of *any* industrial waste from Pilgrim Station into Cape Cod Bay was authorized prior to December 8, 1971, subject to oversight by the Division of Water Pollution Control, the discharge of treated wastewater from the spent fuel pool, torus, dryer separator, and reactor cavity falls within the definition of “existing discharge” under the Ocean Sanctuaries Act and would not be prohibited by that Act. This is not to say that unlimited discharges of any pollutants should be permitted. Those limits would be governed by the Massachusetts Clean Waters Act, and not the Ocean Sanctuaries Act. Therefore, discharges to Cape Cod Bay would be allowed if authorized by a NPDES permit and a State Water Discharge Permit. MassDEP is required to make a determination whether the permit modification can be granted under the Massachusetts Clean Waters Act.

As documented in Holtec’s March 31, 2023 application for a modification to its NPDES permit #MA0003557 for Pilgrim Nuclear Power Station, testing shows that the levels of EPA-regulated pollutants in the treated water are similar to or lower than what is present in the receiving waters or what is currently permitted from other outfalls, or they will be diluted to non-detectable levels before entering Cape Cod Bay. Given the characterization of the effluent pollutants, denial of the permit modification could only be pretext for an improper attempt to regulate radioactive materials that are regulated by the Nuclear Regulatory Commission. The treated water to be discharged is not environmentally harmful, and thus should not be

characterized as waste that is likely to “significantly alter” or otherwise endanger the ecology or appearance of Cape Cod Bay. 301 CMR 27.02. For these reasons, MassDEP is free to evaluate the requested permit modification for approval on its merits in accordance with the Massachusetts Clean Waters Act and consistent with the Ocean Sanctuaries Act.