

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
THE OFFICE OF APPEALS AND DISPUTE RESOLUTION

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In the Matter of  
Entergy Nuclear Operations, Inc. and  
Entergy Nuclear Generation Co.

OADR Docket No. 2015-009  
DEP File No.: Waterways Application  
No. W14-4157, Superseding Written  
Determination  
Plymouth, MA

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**REQUEST FOR PROPOSED FINDINGS OF FACT AND RULINGS OF LAW  
OF APPLICANTS ENTERGY NUCLEAR OPERATIONS, INC.  
AND ENTERGY NUCLEAR GENERATION CO.**

**I. REQUESTED FINDINGS OF FACT**

**A. Procedural Background**

1. This is an appeal of a Superseding Written Determination the Department of Environmental Protection (“MassDEP”) issued on February 27, 2015 for Waterways Application #W14-4157 (“Superseding Written Determination”).
2. Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc. are the owner and operator, respectively, of the Pilgrim Nuclear Power Station (“PNPS” or “Station”) in Plymouth, Massachusetts (the “Site”). (Entergy Nuclear Generation Co. and Entergy Nuclear Operations, Inc. are referred to collectively herein as “Entergy”.)
3. On May 9, 2014, Entergy submitted an application to the MassDEP for a Water-Dependent Chapter 91 License to construct and maintain two (2) helical moorings with associated buoys and outhaul lines in the intake embayment of the Station (the “Project”), within flowed tidelands of Cape Cod Bay, adjacent to the main building at PNPS (the “Application”).
4. Entergy supplemented the Application in September 2014.
5. On November 18, 2014, MassDEP held a public hearing at the Town Hall in Plymouth, Massachusetts regarding the Application.

6. MassDEP issued a Superseding Written Determination on February 27, 2015.<sup>1</sup> MassDEP determined correctly that Entergy's Application consisted of the use of Private Tidelands for a water-dependent use, and that the Project complies with the applicable environmental regulatory programs of the Commonwealth pursuant to the Waterways Regulations.
7. Petitioners appealed MassDEP's Superseding Written Determination on March 19, 2015 pursuant to (a) 310 CMR 9.17(1)(b) for the Jones River Watershed Association ("JRWA"); and (b) 310 CMR 9.17(1)(c) for the twelve residents of the Commonwealth pursuant to M.G.L. c. 30A, Section 10A.

**B. Entergy Needs the Project to Comply With a Nuclear Regulatory Commission ("NRC") Order**

8. The Project consists of a proposed outhaul and mooring system which will accommodate the deployment of floating strainers and semi-rigid suction pipe into the intake embayment of the Station in the event of beyond-design-basis external event ("BDBEE") (as defined below) that requires a significant heat sink. Prefiled Testimony of Eric J. Las, PE, LEED AP ("Las") ¶9.
9. Entergy needs the Project to implement the Diverse and Flexible Coping Strategies ("FLEX Strategy") as required by the Nuclear Regulatory Commission ("NRC") based on its Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" issued on March 12, 2012 ("NRC Order"). Prefiled Testimony of Philip D. Harizi ("Harizi") ¶5; Harizi, Exhibit 2.
10. The NRC Order was issued in the aftermath of the earthquake and tsunami at the Fukushima nuclear power plant in March 2011. Harizi, ¶7. After that event, the NRC determined that additional requirements were needed to mitigate BDBEES at all power reactor sites throughout the United States. Harizi, ¶7.
11. The purpose of the FLEX Strategy is to prevent a Fukushima-like disaster (i.e., fuel damage in the reactor and spent fuel pool) in a situation where the Station loses both power and normal access to the ultimate heat sink. Harizi, ¶8; Harizi, Exhibit 2.
12. To be in compliance with the NRC Order, Entergy must have mobile, self-contained systems that can provide the necessary power and water resources in the event of a BDBEE. Harizi, ¶9; Harizi, Exhibit 2.
13. The FLEX Strategy is supplementary to the existing safety systems which would continue to be the first step in responding to an anticipated emergency. Harizi, ¶9, n 2.

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<sup>1</sup> MassDEP issued a Written Determination on February 20, 2015 but then issued the Superseding Written Determination on February 27, 2015.

14. Entergy's Overall Integrated Plan ("OIP") sets forth the plan of action for PNPS in the event of a BDBEE. Harizi, ¶11; Harizi, Exhibit 3.
15. PNPS will take sequential steps to ensure that PNPS remains within all safety parameters. Harizi, ¶12; Harizi, Exhibit 3. The NRC mandates that the OIP be Entergy's response to the absolute worst-case scenario even though Entergy's actual response may vary depending upon the circumstances and the availability of on-Site water sources even during or in the aftermath of a BDBEE. Harizi, ¶¶12-13.
16. The NRC determined that, if Entergy implements the FLEX Strategy as set forth in the OIP, it will meet the requirements of the NRC Order. Harizi, ¶17; Harizi, Exhibit 4.
17. Pursuant to the scenario set forth in the OIP, assuming (as required by the NRC) that the Station loses all off-Site power and access to all on-Site water sources and requires seawater for the ultimate heat sink to maintain the necessary temperatures in the Reactor Pressure Vessel ("RPV"), for the first nine hours, the Station will continue to be cooled by the Reactor Core Isolation Cooling ("RCIC") system using only the inventory of water initially inside Primary Containment. Harizi, ¶14(a); Harizi, Exhibit 3.
18. At the nine-hour mark, the Station will transition from RCIC cooling to FLEX equipment for the low pressure Core Cooling Function. Harizi, ¶14(b); Harizi, Exhibit 3. The FLEX pumps will be used to inject seawater through the strainers and into the common condensate storage tank suction line, providing seawater to either the High Pressure Coolant Injection ("HPCI") pump or the RCIC pump, using the existing infrastructure to the RPV feedwater lines. Harizi, ¶14(b); Harizi, Exhibit 3. The new connection point has been constructed in a stainless steel enclosure designed to withstand a BDBEE. Harizi, ¶14(b).
19. If the connection to the condensate storage tank common suction line is not available, the alternative injection point for the seawater is at the Residual Heat Removal ("RHR") System via the firewater to service water cross-tie. Harizi, ¶14(c); Harizi, Exhibit 3. Testimony of William Maurer, September 24, 2015 Adjudicatory Hearing Transcript ("Tr.") 90:2-21; 92:5-10.
20. The Spent Fuel Pool ("SFP") will be cooled in a similar manner with no once-through heat exchange processes needed for cooling either the RPV or the SFP. Harizi, ¶¶14(f) and 15.
21. The OIP sets forth the worst-case scenario. Even in the event of a BDBEE, PNPS likely will have a sufficient quantity of cooling water for at least the initial 72-hour period. Harizi, ¶13.
22. If the Station loses access to the municipal water supply and if its condensate, firewater or demineralized storage tanks become unavailable, PNPS will first utilize the FLEX groundwater wells which are independent of any existing systems and which also have been created to address BDBEEs. Harizi, ¶13. Only when all of these preferred water

sources are exhausted or unavailable will PNPS need to use seawater for emergency cooling water. Harizi, ¶13.

23. Due to the multiple preferred sources of water, it is very unlikely that any scenario would result in the deployment of the Project moorings and outhaul system during the height of a violent storm. Harizi, ¶13. In addition, as there are multiple means of injecting the seawater to the Station in the event of a BDBEE, there will be no need to “spray” water onto the Station as was done in the Fukushima disaster. Harizi, ¶14(d). Testimony of Pine duBois, Tr. 65: 7-12; Testimony of Philip Harizi, Tr.212:12-18.

### **C. Details of the Project**

24. The Project consists of two Eco-Mooring Systems comprised of helical pile moorings that will be mechanically augered into the sand. Las, ¶9; Las, Exhibit 2.
25. Each helical mooring has a square thickness of 1 ½” and is 15’ in total length; each helical mooring will be augered into the sand to a maximum embedment of approximately 14.5’. Las, ¶11; Las, Exhibit 3. The environmental impact of the proposed helical pile moorings is minimal compared to the typical bottom weighted mooring alternative that is commonly used for boat moorings; the proposed moorings are less intrusive than thousands of other moorings located throughout Chapter 91 jurisdictional property in the Commonwealth. Las, ¶11; Testimony of Pine duBois, Tr. 39:1-19.
26. There will be no dredging associated with the Project. Las, ¶13.
27. The Project is located within the Cape Cod Bay Ocean Sanctuary. Las, ¶27.
28. The Project includes a float and Grainger snatch block pulley anchored to each mooring with a line to the surface which will then be connected to the shore by means of the outhaul system. Las, ¶12; Las, Exhibit 2.
29. In the event of a BDBEE, two floating strainers will be connected to semi-rigid suction pipe which will be deployed with the outhaul system and will allow seawater to be pumped to the Reactor Pressure Vessel (“RPV”) as described above. Las, ¶14. In this scenario, the semi-rigid suction pipes and floating strainers are temporarily installed as needed to pump seawater to the Station. Las, ¶15.
30. The Project is limited to the moorings and outhaul system which are located seaward of the current high water line. Las, ¶17; Las, Exhibit 3. The security fence, truck access road, concrete wall, buried water pipe and outhaul land connections are landward of the current high water line and outside of Chapter 91 jurisdiction.<sup>2</sup> Las, ¶18. Testimony of Eric Las, Tr. 244:7-14.

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<sup>2</sup> Exhibit 2 to Steven Sovick’s Prefiled Testimony is not reliable because the basis for Mr. Sovick’s data is NAVD88 data calculated based on what he thought was a buoy in Plymouth Harbor that reported data in absolute  
*(Footnote continued on next page)*

#### **D. The Project is Located in Private Tidelands**

31. The Project is located in Private Tidelands as defined in the Waterways Regulations at 310 CMR 9.02. Prefiled Testimony of David E. Hill (“Hill”) ¶¶10-14. Testimony of David Hill, Tr.300-302.<sup>3</sup>
32. MassDEP properly relied on information provided by the Massachusetts Office of Coastal Zone Management (“CZM”) called the “Massachusetts Chapter 91 Mapping Project, Final Report” (“Mapping Project”), prepared by BSC Group, Inc., dated June 9, 2006 (Hearing Exhibit 5). Hill, ¶13.
33. The Mapping Project information demonstrates that the Project is located landward of the historic low water mark. Hill, ¶14.
34. The determination of the historic low water mark using the Mapping Project is supported by two additional pieces of information.
  - a. First, Exhibit 9 to the Rebuttal Testimony of E. Pine duBois, Plan 35214A Sheet 1 of 5, which is a survey that dates to 1967 or 1968, before the Station was constructed, includes a “Low Water Mark” that is between 290’± and 420’± from the “Mean High Water Mark”. The Project is located “much less” than 290 feet from the current mean high water mark. Testimony of David Hill, Tr. 293-295.
  - b. Second, the first page of Exhibit 11 to the Rebuttal Testimony of E. Pine duBois is a photograph of the area of the Station, Cape Cod Bay and the surrounding area during the initial phases of construction of the Station. The location of the Project is on the sandy portion of the beach, landward of the low water mark, which supports the conclusion that the Project is located on Private Tidelands. Testimony of David Hill, Tr. 295-297.

elevations (see Testimony of Steven Sovick, Tr. 146-147, 162-163); however, the Plymouth tidal gauge reports information in relative data (see Testimony of David Hill, Tr. 297-299). Mr. Sovick conceded that he has no reason to believe that the tide reaches the concrete security wall (Testimony of Steven Sovick, Tr. 141-144).

<sup>3</sup> The Petitioners did not establish an alternate historic low water mark as defined in the Waterways Regulations. Testimony of Steven Sovick, Tr. 126:9-11.

### **E. The Project is Water-Dependent**

35. The Project has been properly classified as a water-dependent use project in accordance with the Waterways Regulations, 310 CMR 9.12(2). The Station is an “Infrastructure Facility” that produces, delivers or otherwise provides electricity to the public and requires the withdrawal of large volumes of water from Cape Cod Bay for cooling purposes. The Station existed prior to the effective date of the current Waterways Regulations (October 4, 1990), therefore, MassDEP shall presume that any alteration or expansion of the Station that requires the withdrawal of water from Cape Cod Bay is water-dependent. Hill, ¶18.
36. The sole purpose of the moorings is to facilitate a method to bring seawater from Cape Cod Bay to the Station in the event of an emergency. Hill, ¶18.
37. The Project could not be reasonably located or operated away from the Cape Cod Bay. Harizi, ¶14; Las, ¶14, Las, Exhibit 2 at 2-1.

### **F. The Project Complies with the Applicable Requirements of the Waterways Regulations, Specifically 310 CMR 9.31.**

38. The Secretary of the Executive Office of Energy and Environmental Affairs determined that the Project is not subject to MEPA Review. See January 8, 2015 letter from Secretary of Executive Office of Energy and Environmental Affairs, submitted to MassDEP during the Chapter 91 Licensing proceeding.
39. The Project received an Order of Conditions from the Plymouth Conservation Commission issued on June 6, 2014, which was not appealed by any entity. Las, ¶28; Las, Exhibit G to Exhibit 4.
40. The Project will not lead to the unauthorized discharge of cooling water to the Cape Cod Bay. Once the cooling water is injected into the RPV, it will flow through the safety relief valves or other flow path to the suppression pool (the Torus) which is designed to be flooded if electrical power is unavailable to maintain cooling. Harizi, ¶14(f); Harizi, Exhibit 3.
41. During the 30-day period following a BDBEE, there would not be any need to discharge cooling water as the FLEX Procedures do not involve the discharge of any water from the Station. After the 30-day period, any discharges will continue to comply with the existing NPDES permit for the Station. Harizi, ¶16.
42. The Project will comply with the requirements of the Ocean Sanctuaries Act because the Project will not result in any unauthorized discharge to the area of the Project.
43. MassDEP did not receive any comments to the Chapter 91 License from CZM during the public comment period. Hill, ¶20.

44. The Massachusetts Division of Marine Fisheries contacted MassDEP during the Chapter 91 Licensing proceeding and stated that “Marine Fisheries has no recommendation on the proposed scope of work at this time.” Hill, ¶20.
45. The regulatory programs listed in 9.33(1)(c),(d), (e), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q) and (r) are not applicable to the Project. Hill, ¶20.
46. The location of the proposed moorings is within a Safety and Security Exclusion Zone (“Exclusion Zone”) established pursuant to federal Coast Guard regulations and, therefore, the public does not have access to the area of the proposed moorings. Harizi, ¶24; Harizi, Exhibit 5.
47. No members of the general public have any public rights in navigation, free passage over and through water, fishing and fowling or on-foot passage in the tidelands in the vicinity of the Project because of the Safety and Security Exclusion Zone. Harizi, ¶26.
48. Entergy’s plans were stamped by Eric J. Las, a registered Professional Engineer in the Commonwealth of Massachusetts. Las, Exhibit 2.
49. The proposed helical moorings with associated buoys and outhaul lines are of a typical design for Chapter 91 projects, although most mooring systems are generally utilized to secure recreational and commercial vessels or floating docks which have a far greater mass and surface area than the proposed suction pipes and strainers that would be attached to the moorings in the event of an emergency as part of this Project. Hill, ¶23.

#### **G. The Petitioners Lack Standing**

50. The Petitioners lack standing to challenge the Superseding Written Determination. The mouth of the Jones River is approximately 8 miles from the proposed mooring location measured over land and water; the distance is even longer if limited to a water route. Las, ¶30; Las, Exhibit 7; Testimony of Pine duBois, Tr. 37:21 - 38:3
51. JRWA’s Property appears to be at least one mile upstream from the mouth of the Jones River. Las, ¶30; Las, Exhibit 7. The Petitioners do not challenge and “are not worried about” the environmental impact the moorings. Testimony of Pine duBois, Tr. 38:4-11.

## **II. REQUESTED RULINGS OF LAW**

### **A. The Petitioners Do Not Have Standing**

1. The Jones River Watershed Association (“JRWA”) is not an aggrieved person (as defined in 310 CMR 9.02) and, therefore, does not have standing to challenge the Superseding Written Determination.
2. The Petitioners have failed to put forth credible evidence that “the proposed license allows use of Tidelands in a manner that will degrade, harm and impair the quality, habitat and ecosystem of Cape Cod Bay.”
3. The JRWA has not shown that the Project will impact the JRWA in a manner that is different in kind or magnitude from that suffered by the general public.
4. Issuance of the Chapter 91 License will not cause JRWA to suffer an injury in fact which is different either in kind or magnitude from any injury, if any, that the general public could suffer and which is within the scope of the public interests protected by Chapter 91 and Chapter 21A.
5. The 12 Residents who filed the appeal as a Ten Residents Group have failed to provide credible evidence that the Project will cause damage to the environment, and, therefore, do not have standing to challenge the Superseding Written Determination.
6. The Petitioners have not set forth sufficient proof that either the JRWA or the 12 residents as a Ten Residents Group may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the public interests protected by Chapter 91 and Chapter 21A of the Massachusetts General Laws.

### **B. The Project is Located in Private Tidelands**

7. MassDEP properly determined that the Project is located within Private Tidelands.
8. Petitioners have failed to meet their burden of proof by submitting any plan or depiction that asserts an alternative location for the historic low water line or historic high water line.
9. The security fence and wall, truck access route, buried pipe, and outhaul land connection are not within Chapter 91 jurisdiction.

### **C. The Project is Water-Dependent**

10. The Department properly determined that the structures and/or uses authorized by the Superseding Written Determination are water-dependent pursuant to 310 CMR 9.12(2).



11. The Project cannot reasonably be located or operated away from the Cape Cod Bay.
12. The Department is not required “to determine the efficacy of the Project” before making a presumption regarding water-dependency.

**D. The Project Complies with the Chapter 91 Regulations**

13. The Superseding Written Determination/Chapter 91 License complies with the applicable requirements of 310 CMR 9.31.
  - a. The MEPA Office determined that the Project was not subject to MEPA Review.
  - b. The Project received the necessary approval pursuant to the Wetlands Protection Act.
  - c. The Project will comply with the requirements of the Ocean Sanctuaries Act because the Project will not result in an unauthorized discharge to the Cape Cod Bay Ocean Sanctuary.
  - d. The Project will comply with the Marine Fisheries Laws.
  - e. The regulatory programs listed in 9.33(1)(c),(d), (e), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q) and (r) are not applicable to the Project.
14. The structures and/or uses authorized by the Superseding Written Determination/Chapter 91 License comply with the applicable standards governing the preservation of water-related public rights in accordance with 310 CMR 9.31(1)(d) and 9.35.
15. The Petitioners, along with the general public, do not have any public rights in navigation, free passage over and through water, fishing and fowling or on-foot passage in the tidelands in the vicinity of the Project because of the Safety and Security Exclusion Zone.
16. The structures and/or uses authorized by the Chapter 91 License comply with the applicable standards governing engineering and construction of structures in accordance with 310 CMR 9.31(1)(f) and 9.37.
17. MassDEP is not required to make a “Proper Public Purpose” finding for the Project because it is a water-dependent project located solely on Private Tidelands. If, however, MassDEP was required to do so, the structures and/or uses authorized by the Superseding Written Determination/Chapter 91 License comply with the “Proper Public Purpose Requirement” of 310 CMR 9.31(2).
18. Pursuant to 310 CMR 9.31(2)(a), the Department shall presume the proper public purpose requirement is met for all water-dependent use projects. The presumption has not been overcome in accordance with the criteria at 310 CMR 9.31(3).

19. Although the proper public purpose requirement does not apply, the Project nevertheless “provides greater benefit than detriment to the rights of the public in said lands” by constituting an enhancement in the safety measures for PNPS.

Respectfully submitted,  
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Entergy Nuclear Generation Co.,  
By its attorneys,



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Dated: November 6, 2015

CERTIFICATE OF SERVICE

I, Ruth H. Silman, hereby certify under the pains and penalties of perjury that I have this 6<sup>th</sup> day of November 2015 served a copy of the foregoing document by electronic mail upon the following:

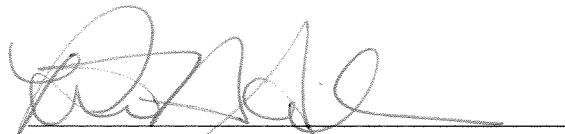
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