



INCIDENTAL HARASSMENT AUTHORIZATION

Garden State Offshore Energy, LLC (GSOE), is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to harass marine mammals incidental to marine site characterization surveys off the coast of Delaware in the area of the Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf (OCS-A 0482) and coastal waters where one or more cable route corridors will be established, when adhering to the following terms and conditions.

1. This incidental harassment authorization (IHA) is valid for a period of one year from the date of issuance.
2. This IHA is valid only for marine site characterization survey activity, as specified in the IHA application, in the Atlantic Ocean.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of GSOE, the vessel operator and other relevant personnel, the lead protected species observer (PSO), and any other relevant designees of GSOE operating under the authority of this IHA.
 - (b) The species authorized for taking are listed in Table 1. The taking, by Level B harassment only, is limited to the species and numbers listed in Table 1. Any taking of species not listed in Table 1, or exceeding the authorized amounts listed in Table 1, is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (c) The taking by injury, serious injury or death of any species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.
 - (d) GSOE shall ensure that the vessel operator and other relevant vessel personnel are briefed on all responsibilities, communication procedures, marine mammal monitoring protocols, operational procedures, and IHA requirements prior to the start of survey activity, and when relevant new personnel join the survey operations.
4. Mitigation Requirements – the holder of this Authorization is required to implement the following mitigation measures:
 - (a) GSOE shall use at least four (4) NMFS-approved PSOs during HRG surveys. The PSOs must have no tasks other than to conduct observational effort, record observational data, and communicate with and instruct relevant vessel crew with regard to the presence of marine mammals and mitigation requirements. PSO resumes shall be provided to NMFS for approval prior to commencement of the survey.
 - (b) Visual monitoring must begin no less than 30 minutes prior to initiation of survey equipment and must continue until 30 minutes after use of survey equipment ceases.



- (c) Exclusion Zones – PSOs shall establish and monitor marine mammal Exclusion Zones. The Exclusion Zones are as follows:
- (i) a 25 m Exclusion Zone for harbor porpoises;
 - (ii) a 200 m Exclusion Zone for fin whales, sei whales and sperm whales;
 - (iii) a 500 m Exclusion Zone for North Atlantic right whales.
- (d) Marine mammal Watch Zone – PSOs shall establish and monitor a marine mammal Watch Zone. The Watch Zone shall represent a distance of 500 m from survey equipment.
- (e) Shutdown requirements – If a marine mammal is observed within, entering, or approaching the relevant Exclusion Zones as described under 4(c) while geophysical survey equipment is operational, the geophysical survey equipment must be immediately shut down.
- (i) Any PSO on duty has the authority to call for shutdown of survey equipment. When there is certainty regarding the need for mitigation action on the basis of visual detection, the relevant PSO(s) must call for such action immediately.
 - (ii) When a shutdown is called for by a PSO, the shutdown must occur and any dispute resolved only following shutdown.
 - (iii) Shutdown of HRG survey equipment is also required upon confirmed passive acoustic monitoring (PAM) detection of a North Atlantic right whale, except in instances when the PAM detection of a North Atlantic right whale can be localized and the whale is confirmed as being beyond the 500 m EZ. The PAM operator on duty has the authority to call for shutdown of survey equipment based on confirmed acoustic detection of a North Atlantic right whale at night even in the absence of visual confirmation. When shutdown occurs based on confirmed PAM detection of a North Atlantic right whale at night, survey equipment may be re-started no sooner than 30 minutes after the last confirmed acoustic detection.
 - (iv) Upon implementation of a shutdown, survey equipment may be reactivated when all marine mammals that triggered the shutdown have been confirmed by visual observation to have exited the relevant Exclusion Zone or an additional time period has elapsed with no further sighting of the animal that triggered the shutdown (15 minutes for harbor porpoises and 30 minutes for all other species).
 - (v) If geophysical equipment shuts down for reasons other than mitigation (*i.e.*, mechanical or electronic failure) resulting in the cessation of the survey equipment for a period of less than 20 minutes, the equipment may be restarted as soon as practicable if visual surveys were continued diligently throughout the silent period and the relevant Exclusion Zones are confirmed by PSOs to have remained clear of marine mammals during the entire 20 minute period. If visual surveys were not continued diligently during the pause of 20 minutes or less, a 30 minute pre-clearance period shall precede the restart of the geophysical survey equipment as described in 4(f). If the period of shutdown for reasons other than mitigation is greater than 20 minutes, a pre-clearance period shall precede the restart of the geophysical survey equipment as described in 4(f).

- (f) Pre-clearance observation – 30 minutes of pre-clearance observation shall be conducted prior to initiation of geophysical survey equipment. If a marine mammal is observed within or approaching the pre-clearance zones described below during the pre-clearance period, geophysical survey equipment shall not be initiated until the animal(s) is confirmed by visual observation to have exited the relevant pre-clearance zone, or, until an additional time period has elapsed with no further sighting of the animal (15 minutes for small delphinoid cetaceans and pinnipeds and 30 minutes for all other species). Geophysical survey equipment shall not be initiated if:
- (i) A North Atlantic right whale is observed within 500 m of geophysical survey equipment during the pre-clearance period; or
 - (ii) any marine mammals are observed within a 200 m radius of geophysical survey equipment during the pre-clearance period.
- (g) Ramp-up – when technically feasible, survey equipment shall be ramped up at the start or re-start of survey activities. Ramp-up will begin with the power of the smallest acoustic equipment at its lowest practical power output appropriate for the survey. When technically feasible the power will then be gradually turned up and other acoustic sources added in a way such that the source level would increase gradually.
- (h) Vessel Strike Avoidance – Vessel operator and crew must maintain a vigilant watch for all marine mammals and slow down or stop the vessel or alter course, as appropriate, to avoid striking any marine mammal, unless such action represents a human safety concern. Survey vessel crew members responsible for navigation duties shall receive site-specific training on marine mammal sighting/reporting and vessel strike avoidance measures. Vessel strike avoidance measures shall include the following, except under circumstances when complying with these requirements would put the safety of the vessel or crew at risk:
- (i) The vessel operator and crew shall maintain vigilant watch for cetaceans and pinnipeds, and slow down or stop the vessel to avoid striking marine mammals;
 - (ii) The vessel operator will reduce vessel speed to 10 knots (18.5 km/hr) or less when any large whale, any mother/calf pairs, whale or dolphin pods, or larger assemblages of non-delphinoid cetaceans are observed near (within 100 m (330 ft)) an underway vessel;
 - (iii) The survey vessel will maintain a separation distance of 500 m (1640 ft) or greater from any sighted North Atlantic right whale;
 - (iv) If underway, the vessel must steer a course away from any sighted North Atlantic right whale at 10 knots (18.5 km/hr) or less until the 500 m (1640 ft) minimum separation distance has been established. If a North Atlantic right whale is sighted in a vessel's path, or within 500 m (330 ft) to an underway vessel, the underway vessel must reduce speed and shift the engine to neutral. Engines will not be engaged until the North Atlantic right whale has moved outside of the vessel's path and beyond 500 m. If stationary, the vessel must not engage engines until the North Atlantic right whale has moved beyond 500 m;
 - (v) The vessel will maintain a separation distance of 100 m (330 ft) or greater from any sighted non-delphinoid cetacean. If sighted, the vessel underway must reduce

speed and shift the engine to neutral, and must not engage the engines until the non-delphinoid cetacean has moved outside of the vessel's path and beyond 100 m. If a survey vessel is stationary, the vessel will not engage engines until the non-delphinoid cetacean has moved out of the vessel's path and beyond 100 m;

- (vi) The vessel will maintain a separation distance of 50 m (164 ft) or greater from any sighted delphinoid cetacean. Any vessel underway shall remain parallel to a sighted delphinoid cetacean's course whenever possible, and avoid excessive speed or abrupt changes in direction. Any vessel underway shall reduce vessel speed to 10 knots (18.5 km/hr) or less when pods (including mother/calf pairs) or large assemblages of delphinoid cetaceans are observed. Vessels may not adjust course and speed until the delphinoid cetaceans have moved beyond 50 m and/or the abeam of the underway vessel;
 - (vii) All vessels underway will not divert or alter course in order to approach any whale, delphinoid cetacean, or pinniped. Any vessel underway will avoid excessive speed or abrupt changes in direction to avoid injury to the sighted cetacean or pinniped; and
 - (viii) All vessels will maintain a separation distance of 50 m (164 ft) or greater from any sighted pinniped.
 - (ix) The vessel operator will comply with 10 knot (18.5 km/hr) or less speed restrictions in any Seasonal Management Area per NMFS guidance.
 - (x) If NMFS should establish a Dynamic Management Area (DMA) in the area of the survey, within 24 hours of the establishment of the DMA GSOE shall work with NMFS to shut down and/or alter survey activities to avoid the DMA as appropriate.
5. Monitoring Requirements – The Holder of this Authorization is required to conduct marine mammal visual monitoring and PAM during geophysical survey activity. Monitoring shall be conducted in accordance with the following requirements:
- (a) A minimum of four NMFS-approved PSOs and a minimum of two certified PAM operator(s), operating in shifts, shall be employed by GSOE during geophysical surveys.
 - (b) Observations shall take place from the highest available vantage point on the survey vessel. General 360-degree scanning shall occur during the monitoring periods, and target scanning by PSOs shall occur when alerted of a marine mammal presence.
 - (c) PSOs shall be equipped with binoculars and have the ability to estimate distances to marine mammals located in proximity to the vessel and/or Exclusion Zones using range finders. Reticulated binoculars will also be available to PSOs for use as appropriate based on conditions and visibility to support the sighting and monitoring of marine species.
 - (d) PAM shall be used during nighttime geophysical survey operations. The PAM system shall consist of an array of hydrophones with both broadband (sampling mid-range frequencies of 2 kHz to 200 kHz) and at least one low-frequency hydrophone (sampling range frequencies of 75 Hz to 30 kHz). PAM operators shall communicate detections or vocalizations to the Lead PSO on duty who shall ensure the implementation of the appropriate mitigation measure.

- (e) During surveys conducted at night, night-vision equipment and infrared technology shall be used in addition to PAM. Specifications for night-vision and infrared equipment shall be provided to NMFS for review and acceptance prior to start of surveys.
- (f) PSOs and PAM operators shall work in shifts such that no one monitor will work more than 4 consecutive hours without a 2 hour break or longer than 12 hours during any 24-hour period. During daylight hours the PSOs shall rotate in shifts of 1 on and 3 off, and during nighttime operations PSOs shall work in pairs.
- (g) PAM operators shall also be on call as necessary during daytime operations should visual observations become impaired.
- (h) Position data shall be recorded using hand-held or vessel global positioning system (GPS) units for each sighting.
- (i) A briefing shall be conducted between survey supervisors and crews, PSOs, and GSOE to establish responsibilities of each party, define chains of command, discuss communication procedures, provide an overview of monitoring purposes, and review operational procedures.
- (j) PSO qualifications shall include completion of a PSO training course and direct field conducting similar surveys.
- (k) Data on all PAM/PSO observations shall be recorded based on standard PSO collection requirements. PSOs must use standardized data forms, whether hard copy or electronic. The following information shall be reported:
 - (i) PSO names and affiliations
 - (ii) Dates of departures and returns to port with port name
 - (iii) Dates and times (Greenwich Mean Time) of survey effort and times corresponding with PSO effort
 - (iv) Vessel location (latitude/longitude) when survey effort begins and ends; vessel location at beginning and end of visual PSO duty shifts
 - (v) Vessel heading and speed at beginning and end of visual PSO duty shifts and upon any line change
 - (vi) Environmental conditions while on visual survey (at beginning and end of PSO shift and whenever conditions change significantly), including wind speed and direction, Beaufort sea state, Beaufort wind force, swell height, weather conditions, cloud cover, sun glare, and overall visibility to the horizon
 - (vii) Factors that may be contributing to impaired observations during each PSO shift change or as needed as environmental conditions change (*e.g.*, vessel traffic, equipment malfunctions)
 - (viii) Survey activity information, such as type of survey equipment in operation, acoustic source power output while in operation, and any other notes of significance (*i.e.*, pre-clearance survey, ramp-up, shutdown, end of operations, etc.)
 - (ix) If a marine mammal is sighted, the following information should be recorded:

- (A) Watch status (sighting made by PSO on/off effort, opportunistic, crew, alternate vessel/platform);
 - (B) PSO who sighted the animal;
 - (C) Time of sighting;
 - (D) Vessel location at time of sighting;
 - (E) Water depth;
 - (F) Direction of vessel's travel (compass direction);
 - (G) Direction of animal's travel relative to the vessel;
 - (H) Pace of the animal;
 - (I) Estimated distance to the animal and its heading relative to vessel at initial sighting;
 - (J) Identification of the animal (*e.g.*, genus/species, lowest possible taxonomic level, or unidentified); also note the composition of the group if there is a mix of species;
 - (K) Estimated number of animals (high/low/best) ;
 - (L) Estimated number of animals by cohort (adults, yearlings, juveniles, calves, group composition, etc.);
 - (M) Description (as many distinguishing features as possible of each individual seen, including length, shape, color, pattern, scars or markings, shape and size of dorsal fin, shape of head, and blow characteristics);
 - (N) Detailed behavior observations (*e.g.*, number of blows, number of surfaces, breaching, spyhopping, diving, feeding, traveling; as explicit and detailed as possible; note any observed changes in behavior);
 - (O) Animal's closest point of approach and/or closest distance from the center point of the acoustic source;
 - (P) Platform activity at time of sighting (*e.g.*, deploying, recovering, testing, data acquisition, other);
 - (Q) Description of any actions implemented in response to the sighting (*e.g.*, delays, shutdown, ramp-up, speed or course alteration, etc.) and time and location of the action: and
 - (R) If observed within 447 m of geophysical survey equipment, marine mammals shall be documented as takes by Level B harassment.
6. Reporting – a technical report shall be provided to NMFS within 90 days after completion of survey activities that fully documents the methods and monitoring protocols, summarizes the data recorded during monitoring, estimates the number of marine mammals that may have been taken during survey activities, describes the effectiveness of the various mitigation techniques (*i.e.* visual observations during day and night compared to PAM detections/operations), provides an interpretation of the results and effectiveness of all monitoring tasks, and includes an assessment of the effectiveness

of night vision equipment used during nighttime surveys, including comparisons of relative effectiveness among the different types of night vision equipment used. Any recommendations made by NMFS shall be addressed in the final report prior to acceptance by NMFS.

(a) Reporting injured or dead marine mammals:

(i) In the event that the specified activity clearly causes the take of a marine mammal in a manner not authorized by this IHA, such as serious injury or mortality, GSOE shall immediately cease the specified activities and immediately report the incident to the NMFS Office of Protected Resources ((301) 427-8401) and the NMFS Northeast Stranding Coordinator ((866) 755-6622). The report must include the following information:

- (A) Time, date, and location (latitude/longitude) of the incident;
- (B) Vessel's speed during and leading up to the incident;
- (C) Description of the incident;
- (D) Status of all sound source use in the 24 hours preceding the incident;
- (E) Water depth;
- (F) Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- (G) Description of all marine mammal observations in the 24 hours preceding the incident;
- (H) Species identification or description of the animal(s) involved;
- (I) Fate of the animal(s); and
- (J) Photographs or video footage of the animal(s).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with GSOE to determine what measures are necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. GSOE may not resume their activities until notified by NMFS.

(ii) In the event that GSOE discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*e.g.*, in less than a moderate state of decomposition), GSOE shall immediately report the incident to the NMFS Office of Protected Resources ((301) 427-8401) and the NMFS Northeast Stranding Coordinator ((866) 755-6622). The report must include the same information identified in condition 6(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with GSOE to determine whether additional mitigation measures or modifications to the activities are appropriate.

(iii) In the event that GSOE discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the specified activities (*e.g.*, previously wounded animal, carcass with moderate to

advanced decomposition, or scavenger damage), GSOE shall report the incident to the NMFS Office of Protected Resources ((301) 427-8401) and the NMFS Northeast Stranding Coordinator ((866) 755-6622), within 24 hours of the discovery. GSOE shall provide photographs or video footage or other documentation of the sighting to NMFS.

7. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if NMFS determines the authorized taking is having more than a negligible impact on the species or stock of affected marine mammals.



Donna S. Wieting,
Director,
Office of Protected Resources,
National Marine Fisheries Service.

MAY 15 2018

Date

Table 1. Numbers of Incidental Take of Marine Mammals Authorized.

Species	Level A Takes Authorized	Level B Takes Authorized	Total Takes Authorized
North Atlantic right whale	0	1	1
Humpback whale	0	6	6
Fin whale	0	18	18
Sei whale	0	2	2
Minke whale	0	4	4
Sperm whale	0	1	1
Long-finned pilot whale	0	32	32
Bottlenose dolphin	0	1,148	1,148
Atlantic Spotted dolphin	0	24	24
Common dolphin	0	535	535
Atlantic white-sided dolphin	0	79	79
Harbor porpoise	0	102	102
Harbor seal	0	1,175	1,175
Gray seal	0	1,175	1,175